Technical Report 1079

Analog Scales of Affective and Continuance Commitment

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14. ABSTRACT *(Maximum 200 words)*:

The Army has assembled an archive of survey data for use in studies and analyses on practical issues pertinent to the career decisions of officers. This effort applied the "analog" approach for empirically deriving and validating measures in order to expand the value of the archive for longitudinal research on organizational commitment. Accordingly, an expert panel selected 13 questionnaire items that fit with the content domains of Meyer and Allen's (1991) affective commitment (AC) and continuance commitment (CC). It was expected that the average of responses to the items selected for a construct could serve as an analog scale for measuring the construct. To test this, the original Meyer and Allen items and the candidate analog items were administered to 404 Army officers. Confirmatory factor analyses showed that responses to the analog and original items defined dimensions representing AC and CC. Correlations of analog scale scores with rank and career intent were also similar to those obtained for the original scales. Use of the validated analog scales links findings from the Army archive to the wider research on organizational commitment and increases the certainty and applicability of these findings.

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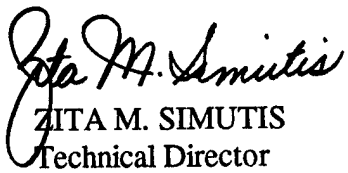
FOREWORD

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), in collaboration with the U.S. Military Academy (USMA), jointly established the Center for Leadership and Organizations Research (CLOR) to conduct programmatic research on Army-wide priorities in the areas of organizational leadership and leader development. A major CLOR program has involved the formation of a longitudinal database to serve as a test bed for research on leader development. This test bed has been called the Baseline Officer Longitudinal Data Set (BOLDS). Formation of BOLDS began with cadets entering USMA as the Class of 1998.

The research reported here tested the viability of using an already existing Army archive to expand BOLDS to officers after commissioning and over the course of their careers. ARI has accumulated this archive over the period of the past decade. This archive contains survey data on Army officers and on their opinions about issues pertinent to careers and career decisions. The effort here sought to develop valid measures of organizational commitment from data collected and retained in the Army archive. Results were highly encouraging. They showed that commitment measures developed from archival data, referred to as analog measures, had properties resembling those of measures more widely used in research on organizational commitment.

These findings open the existing Army archive to research, as well as studies and analyses, on wider issues of organizational commitment. The findings also show the potential for adapting the survey methodology used to assemble the archive for expansion of BOLDS by USMA and CLOR. Adaptations would involve inclusion of BOLDS officers in future surveys for the archive and modification of survey items to obtain information which links career decisions to the leader development of officers.



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ANALOG SCALES OF AFFECTIVE AND CONTINUANCE COMMITMENT

EXECUTIVE SUMMARY

Research Requirement:

Over the past decade, the Army has assembled a data archive with high potential for longitudinal research, study, and analysis of the development of the organizational commitment of commissioned officers. This archive, known earlier as Longitudinal Research on Officer Careers (LROC) and later as the Survey of Officer Careers (SOC), contains items written to address practical issues, as opposed to standard measures of commitment used in other research. Absence of standard or otherwise validated measures reduces the value of the archive by isolating its findings from the wider body of academic and applied research. Review of questionnaire items, however, revealed that several items seemed to fit well with the content domains of two components of commitment currently investigated in the wider body of research: affective commitment (AC) and continuance commitment (CC; Meyer & Allen, 1991). This effort applied the "analog" approach (Evans, 1997) to develop and test the validity of the items as scales for measuring the two forms of commitment and for linking findings from the Army archive with other relevant research on organizational commitment.

Procedure:

In accordance with the analog approach, three military researchers reached consensus on the LROC survey items which reflected the meanings of AC and CC and were common to the five survey administrations spanning the years of 1988 to 1996. The selected analog items and the items standardly used in commitment research were included in questionnaires and completed by 404 Army officers. For each sample, responses were factor analyzed to assess whether the items represented dimensions corresponding to the commitment components. The validity of the analog scales was further examined by examining descriptive properties and by testing hypotheses based on results of past research.

Findings:

Results indicated that, overall, the selected LROC/SOC items combined into analog scales that like the original scales, were distinguishable from each other as measures of AC and CC. The analog and original scales also showed similar relationships with the other variables studies. As hypothesized, both the analog and original scales indicated that officers' commitment to the Army was stronger in terms of the affective component than in terms of the continuance component. Officers in one sample tended to be higher in rank than the other sample. Congruent with rank differences, the more senior sample also reported relatively higher levels of AC and lower levels of CC. Correlations with career intent also supported the analog scales as measures of commitment. For both the analog and original scales, AC was more strongly and positively related to career intent than was CC. Despite the overall support for the analog scales, other results cautioned that the original affective scale predicted career intent over and above the analog

scales. In contrast, the analog continuance scale predicted career intention over and above the original continuance scale.

Utilization of Findings:

Due to the longitudinal period covered, the LROC/SOC offers a potentially unique opportunity for research on organizational commitment, its development, and measurement. The analog scales, developed and tested here, represent two components of commitment studied in the wider literature. Use of the analog scales will help to realize the research potential of the LROC/SOC data set by linking and anchoring findings to the wider body of research on commitment. While theory based analyses will contribute to larger literature, it is important to recognize that this linkage also helps to strengthen certainty about implications for practical issues. Accordingly, the finding that AC had the stronger relationship with career intent fits with the wider literature and suggests a focus on organizational conditions that foster the AC of its members.

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Introduction

The Army has a need to develop and maintain a force of soldiers who are highly motivated and capable for military service. This need partly derives from the unique conditions of military service which can involve long-term obligation to a life requiring travel, frequent relocation, and selflessness in the execution of life-threatening duties. *Organizational commitment* is a construct potentially useful for characterizing and understanding soldiers' willing and active military service despite the associated hardships. Following from its early investigation (Porter, Steers, Mowday, & Boulian, 1974), organizational commitment has been generally viewed as a complex construct involving acceptance of organizational values, willingness to put forth effort for the organization, and desire for continued membership.

Empirical results have shown the utility of organizational commitment for understanding the behavior of members of organizations. Numerous studies have examined commitment as an antecedent of turnover (Bluedorn, 1982; Farkas & Tetrick, 1989; Michaels & Spector, 1982; Williams & Hazer, 1986). Strong support has been found for an inverse relationship between organizational commitment and turnover intentions (Hackett, Bycio, & Hausdorf, 1994; Meyer, Allen, & Smith, 1993; Porter et al., 1974; Whitener & Walz, 1993) and turnover behavior (Somers, 1993; Whitener & Walz, 1993). Mathieu and Zajac's meta-analysis (1990) also verified relationships between organizational commitment and a number of indicators of performance, with the direction and strength of relationship varying by performance indicator. For example, Mathieu and Zajac found positive mean correlations (weighted and corrected for attenuation) between organizational commitment and performance ratings, output measures, and attendance. In contrast, mean correlations were negative with variables associated with withdrawal from the organization: perceived job alternatives, intention to search, intention to leave, lateness, and turnover. Mathieu and Zajac also noted that the influence of organizational commitment on performance may not be direct, but instead mediated or moderated by other variables such as role states and pay policies.

Since the middle 1970s, the literature on changes in the Army's culture has also driven concerns about development and maintenance of soldiers' commitment to military service. As this literature proposed (Moskos, 1977, 1981, 1983, 1986), the Army has traditionally fostered identification or commitment to the Army based on acceptance of and willing subordination to the values and norms of the military institution. Changes have introduced another model of attachment based on the competitiveness of the military, relative to the other organizations, in meeting the occupational interests and needs of individuals. This view suggests an infusion into the military of variation in the values on which the commitment of soldiers is based. Empirical results have shown the potential importance of these variations. Tremble and Goodwin (1992), for example, described trends across samples. These trends indicated that attachment to the Army based on institutional values was more characteristic of soldiers and more consistently predicted soldiers' rank and career intentions, compared to attachment based on the Army's occupational

attractiveness. Such trends suggest that for the military, acceptance of traditional, institutional values is important for the stability and involvement of its members.

Longitudinal Studies of Organizational Commitment

It has been suggested that the development of organizational commitment is a gradual process (Mowday, Porter, & Steers, 1982). Based on their review of the empirical literature, Mathieu and Zajac (1990) emphasized a need for research which determines "how organizational commitment develops over time and what factors are most critical to employees at various career stages" (p. 191). Allen and Meyer (1996) also advocated developmental research to determine how to measure commitment over time. Based on these views, longitudinal studies appear to hold promise for understanding the development of organizational commitment and for determining its antecedents, consequences, and measurement.

Several longitudinal studies of organizational commitment have been conducted (e.g., Bateman & Strasser, 1984; Fisher, 1985; Meyer & Allen, 1987; Mowday & McDade, 1979, 1980; Mowday et al., 1982; Pierce & Dunham, 1987; Porter, Crampion, & Smith, 1976; Porter et al., 1974; Van Maanen, 1975; Werbel & Gould, 1984). In these studies, the longitudinal period covered did not typically exceed 12 months. Evidence indicates that longer tracking periods may be needed to reap the benefits of longitudinal research. Mowday et al. (1982), for example, found that personnel entering an organization undergo an initial socialization period and that the factors determining commitment likely change over the course of this time period. In a sample of police officers, Van Maanan (1975) also found that organizational commitment did not stabilize before 30 months of employment.

Over the past decade, the Army has assembled a data archive potentially suitable for longitudinal research on the development of the organizational commitment of commissioned officers. This archive was produced through mail surveys administered during the period of 1988 to 1996 and as part of a research program known earlier as Longitudinal Research on Officer Careers (LROC) and later as the Survey of Officer Careers (SOC). Despite some variation, there was considerable continuity in the questionnaire items in the five survey administrations. In all surveys, questionnaire items sought officers' views on a number of practical issues including career decision making. Several reports describe the purpose and preliminary results of the surveys (Harris, 1994; Harris, Wochinger, Schwartz, & Parham, 1993; McCloy, Laurence, & DiFazio, 1996). As described in these reports, the LROC/SOC data have been formed into an archive ready for use in longitudinal research, studies, and analyses.

The LROC and SOC questionnaires contained items written to address practical issues and did not include standard measures of commitment or other behavioral constructs. Absence of standard or otherwise validated measures has limited the research value of the archive by reducing certainty about the meaning of findings from the data and their relationship to the wider body of research. Review of questionnaire items, however, revealed that several items seemed to fit well with the content domains of two forms of commitment measured in current research on organizational commitment. These are two of the three forms of commitment in Meyer and Allen's componental model of organizational commitment (see Meyer & Allen, 1997). The two

forms are affective commitment and continuance commitment. This fit suggested the possibility of applying the "analog" approach to the LROC/SOC archive. The analog approach transforms administrative, personnel, or organizational archival data into measures of behavioral constructs for research use.

By the analog approach (Evans, 1997), data already existing in an archive (in our case, the LROC/SOC) and likely useful for measuring a construct are selected. Statistical procedures are then applied to determine how to combine or transform the data into a measure of the construct. Using samples with data available on both the selected archival items and a standard measure of the construct, the descriptive and predictive properties of the measure derived from the archival data are compared with those of the standard measure. The derived measure is treated as an "analog" of the standard measure when it is structurally similar to the standard measure in terms of both descriptive and predictive properties. Evans (1997) used the analog approach and reported on the viability of scales derived through regression and tested as analogs of the scales in the NEO-Personality Inventory and in the Assessment of Background and Life Experiences.

Organizational commitment

Meyer and Allen (1991) built on and refined earlier research on organizational commitment, much of which had been stimulated by Porter et al. (1974). In doing so, Meyer and Allen defined organizational commitment as "a psychological state that (a) characterizes the employee's relationship with the organization and (b) has implications for the decision to continue membership in the organization" (Meyer & Allen, 1991; p. 67). As mentioned previously, Meyer and Allen distinguished between three states or components of organizational commitment. These three components differ in terms of the sources of attraction for relationship with the organization[1] and are referred to as affective commitment, continuance commitment, and normative commitment.

"Affective commitment (AC) refers to the employee's emotional attachment to, identification with, and involvement in the organization" (Meyer & Allen, 1997; p. 11). Employees with strong AC remain in the organization because they *want* to. This component of commitment may encourage adherence to the expectations and values of organization. "Continuance commitment (CC) refers to an awareness of the costs associated with leaving the organization" (Meyer & Allen, 1997; p. 11). Employees with strong CC remain in the organization because they *need* to. This component of commitment has been associated with the side bets or investments an employee makes with an organization. "Normative commitment (NC) reflects a feeling of obligation to continue employment" (Meyer & Allen, 1997; p. 11). This component of commitment may be brought on by the desire to conform to normative pressures perceived by family and friends. Employees with a strong NC remain in the organization because they feel they *ought* to.

[1] The sources of attraction distinguishing the components of commitment seem to reflect the early literature's distinctions (Deutsch & Gerard, 1955; Kelman, 1958) among social influence based on compliance, identification, and internalization.

Meyer and Allen have developed measures for the three proposed components of commitment. The measure for a component consists of the average of self-report responses to Likert-type questionnaire items. Sample items include: "This organization has a great deal of personal meaning for me" (AC), "Right now, staying with my organization is a matter of necessity as much as a desire" (CC), and "I was taught to believe in the value of remaining loyal to one organization" (NC).

Allen and Meyer (1996) reviewed over 40 studies in which their scales were used. They reported acceptable median reliabilities (internal consistencies) for all three scales. These reliabilities were .85 and .79 for their AC and CC scales, respectively. Further evidence on construct validity has been obtained in exploratory (Allen & Meyer, 1990; McGee & Ford, 1987; Reilly & Orsak, 1991) or confirmatory factor analyses (Meyer, Allen, & Gellatly, 1990; Moorman, Niehoff, & Organ, 1993; Shore & Tetrick, 1991; Somers, 1993), to include studies with samples of Army officers (e.g., Teplitsky, 1991; Oliver, Tiggle, & Hayes, 1996). The factor analytic studies have consistently demonstrated that the AC and CC items differentially load on separate factors, as expected. The factor analytic studies have also consistently shown the unidimensionality of the AC scale, but results have been less clear about the dimensionality of CC. Results of both exploratory analyses (McGee and Ford, 1987) and confirmatory analyses (Hackett et al., 1994; Bullis & Wong, 1994) have indicated the possibility of separating the CC items into two continuance subscales, one composed of the items concerning available alternatives (CC_{alt}) and the other composed of items on the personal sacrifices created by leaving the organization (CC_{sac}). While factor patterns have suggested a two dimensional conceptualization of CC, the empirical evidence (Hackett et al., 1994) and theoretical reasoning (Bullis & Wong, 1994) have not fully agreed about formation of two separate CC scales.

Meyer and Allen's AC and CC scales have produced the pattern of prediction found in the wider literature on commitment. For example, Hackett et al. (1994) found that motivation correlated positively with AC ($r = .52$) and negatively with CC ($r = -.11$). The value of distinguishing among forms of commitment has also been shown in that while all three of Meyer and Allen's scales have correlated negatively with turnover intentions, AC has usually produced a relatively stronger association (Hackett et al., 1994; Meyer et al., 1993).

Meyer and Allen's measures have been used in several studies concerned with the career intention of Army soldiers. For example, Oliver et al. (1996) surveyed 503 Army soldiers in an attempt to identify the "before deployment status" of reserve soldiers who had volunteered for an overseas deployment. Consistent with findings on extra role organizational behavior (e.g., O'Reilly and Chatman, 1986), nearly 88% of this sample of volunteers reported intentions to remain in the Army for the duration of a full career (20 years of service). Consistent with their career intentions, Oliver et al.'s sample also expressed strong levels of both AC and CC.

In another Army study, Teplitsky (1991) predicted an officer's "propensity to stay" in the Army (based on a function of two questions) using Meyer & Allen's AC scale. A significant path coefficient of .35 ($p < .01$) was found between AC and propensity to stay in the Army. This suggests that officers with high levels of AC are more inclined to remain in the Army beyond their initial obligation than officers with lower levels of AC.

Purpose

The purpose of this research has been to develop and validate analog scales of AC and CC for use with the LROC/SOC database. In accordance with the analog approach, three military researchers reviewed LROC questionnaires to identify items common to the administrations in different years and reflecting of Meyer and Allen's definitions of AC and CC. The researchers reached consensus on six items for AC and seven items for CC. Close inspection showed that similar to the items in the original CC scale, three of the selected items reflected sacrifices (numbers one, three, and five) and four items concerned available alternatives (numbers two, four, six, and seven). The expectation was that the average of responses to the items selected for a Meyer and Allen commitment component could serve as an analog scale for measuring that construct.

To test this, the Meyer and Allen and the candidate analog items were included in questionnaires administered to the samples of Army officers participating in two projects investigating commitment. For each sample, responses were factor analyzed to assess whether the resulting factors were characterized by the expected items and, thereby, represented Meyer and Allen's framework. Descriptive properties of analog and Meyer and Allen scales were also compared. Finally, the construct validity of the analog scales was examined by testing four hypotheses. Hypotheses were based on results of past research on commitment and their applicability to the samples of participating officers.

While both samples consisted of Army officers, they otherwise differed in terms of both internal and external characteristics. Sample one was mostly comprised of officers assigned to combat support or combat service support units. Sample one also consisted of those officers who were still stationed at an Army post a few months prior to post inactivation. Based on findings about downsizing and the commitment of survivors (Wong & McNally, 1994), exposure of sample one to the inactivation process could have influenced commitment levels, perhaps reducing AC or increasing the ascendance of issues of CC. On the other hand, the remaining officers may have been chosen to close down the post, because they had demonstrated high levels of AC. In contrast to sample one, sample two was mostly comprised of officers assigned to combat arms battalions. Research on organizational attachment has suggested (Segal and Yoon, 1984) that the combat arms more closely represent the traditional Army institution and, as a result, that officers assigned to such units may be more likely to endorse traditional values than officers in noncombat, support units. These differences in the characteristics of the two samples raise the expectation that the samples also differed in commitment. The mix of sample differences, however, does not support a directional hypothesis.

In summary, four hypotheses were tested. In accordance with the research strategy, support for the hypotheses for both the derived scales and the original scales was considered evidence for use of the scales as analog as stand ins for the original Meyer and Allen scales. The four hypotheses were:

(1) Officers are higher in AC than CC.

(2) The commitment of the officers in sample one is different from the commitment of the officers in sample two.

(3) Rank is positively correlated with AC.

(4) AC and CC are positively correlated to career intentions, with AC correlating more strongly than CC.

Method

Participants

Two samples of commissioned Army officers served as participants in this study. Sample one consisted of 550 officers[2] at an Army post in the western United States who were mailed questionnaires during the summer of 1993. The post was scheduled to close later that fall. A total of 312 questionnaires were returned for a response rate of 57%. Of those returned, 278 had complete data from commissioned officers that were usable for this study.

Sample two consisted of 144 Battalion staff officers distributed across 47 battalions who responded to questionnaires. These officers represented approximately 76% of the 188 staff officers originally selected from those units to rate the transformational leadership of their superiors (see Tremble, Kane, & Stewart, 1997). Of the 144 questionnaires completed, 126 had data that were usable for this study.

Table 1 summarizes the gender, ethnicity, and military rank reported by participants in the obtained samples. Both samples were primarily white males. Officer rank in sample one ranged from second lieutenant (O1) to colonel (O6), with a modal rank of captain. The range of officer rank in sample two was relatively smaller than in sample one, increasing from second lieutenant to major (O4). Despite the smaller range, the majority of officers in sample two were also captains.

Instruments

Table 2 describes the original Meyer and Allen and analog questionnaire items administered to the two samples. Consistent with other Army research (Oliver et al., 1996; Teplitsky, 1991), both samples completed seven of the eight Meyer and Allen Affective Commitment (AC) items and eight of the nine Continuance Commitment (CC) items.[3] The

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[2] Surveys were mailed to both warrant and commissioned officers; however, this report covers commissioned officers only.

[3] The omitted Meyer and Allen AC item was "I would be happy to spend the rest of my career in this organization." It was believed that this item confounded the criterion of interest (career intent) with the intended predictor (AC). The omitted Meyer and Allen CC item was "If I had not already put so much of myself into this organization, I might consider working elsewhere."

Table 1

Descriptive Statistics

	Sample 1	Sample 2	Combined Sample
Gender			
Male	79.0%	90.3%	82.5%
Female	21.0%	9.7%	17.5%
Ethnicity			
White	81.9%	83.2%	82.3%
Black	7.2%	8.0	7.5%
Hispanic	4.7%	5.6%	5.0%
Asian	3.6%	0.8%	2.7%
Other	2.5%	2.4%	2.5%
Rank			
(1) 2nd Lieutenant	2.9%	5.6%	3.7%
(2) 1st Lieutenant	23.0%	23.8%	23.3%
(3) Captain	39.2%	48.4%	42.1%
(4) Major	16.5%	22.2%	18.3%
(5) Lieutenant Colonel	13.3%	0.0%	9.2%
(6) Colonel	5.0%	0.0%	3.5%
	Means and Standard Deviations		
Rank	3.30	2.87	3.16
	1.19	0.82	1.10
Career Intent[4]	3.71	4.07	3.82
	0.94	1.15	1.03

Note. Percentages for gender, ethnicity, and rank are reported. Means and standard deviations are also reported for rank and career intent. The numbers next to each rank represent the numerical codes assigned for statistical analyses.

Meyer and Allen items were modified to state "the Army" instead of "my organization." Both samples also responded to six analog AC items and seven analog CC items.

In each sample, the commitment items were intermingled among other questionnaire items. For sample one, the other items concerned awareness of and beliefs about post inactivation policies. For sample two, the other items tapped commitment and satisfaction with the Army.

[4] Career intent was not compared across samples, because, as described later, different scales were administered in the two samples.

Table 2

Summary of Administered Commitment Items

Meyer and Allen Affective Commitment	Analog Affective Commitment
1. I really feel as if the Army's problems are my own.	1. Civilians are more likely to share my values and beliefs than other officers.*
2. The Army has a great deal of personal meaning for me.	2. One of the things I value most about the Army is the sense of community or camaraderie I feel.
3. I enjoy discussing the Army with people outside it.	3. I would discourage a close friend from joining the Army.*
4. I do not feel "emotionally attached" to the Army.*	4. I can count on Army people to help out when needed.
5. I do not feel a strong sense of belonging in the Army.*	5. I am quite proud to tell people I am in the Army.
6. I do not feel like "part of the family" in the Army.*	6. I feel I am really a part of the Army organization.
7. I think I could easily become as attached to another organization as I am to the Army.*	
Meyer and Allen Continuance Commitment	**Analog Continuance Commitment**
1. I am not afraid of what might happen if I quit the Army without another job lined up.*	1. It would be difficult for me to find a good civilian job right now, considering my own qualifications and current labor market conditions.
2. Too much of my life would be disrupted if I decided I wanted to leave the Army now.	2. The overall standard of living is better in the military, compared to a civilian job that I could realistically expect to get.
3. It wouldn't be too costly for me to leave the Army in the near future.*	3. It would be difficult for me to leave the Army in the next year or so, given my current personal or family situation.
4. One of the major reasons I may stay in the Army is that leaving would require considerable personal sacrifice -- another organization may not match the overall benefits I have.	4. The opportunities to advance are better in military, compared to a civilian job that I could realistically expect to get.
5. It would be very hard for me to leave the Army right now, even if I wanted to.	5. It would be difficult for me financially to be unemployed for 2 or 3 months if I needed time to find a new job.
6. I feel I have too few options to consider leaving the Army.	6. The overall quality of life is better in the military, compared to a civilian job that I could realistically expect to get.
7. Right now, staying in the Army is a matter of necessity as much as a desire.	7. Personal freedom is better in the military, compared to a civilian job that I could realistically expect to get.
8. One of the few negative consequences of leaving the Army would be the scarcity of available alternatives.	

* Reverse coded items.

Given their intermingling, the commitment items were formatted to retain, as much as possible, their original presentation but also to fit with the questionnaire of which they were a part. Accordingly, the AC items for both samples and the CC items for sample two were presented as declarative statements, as illustrated in Table 2. Participants responded to these items by choosing from a five-point Likert scale with anchors ranging from "strongly agree" to "strongly disagree". The sample one questionnaire permitted greater preservation of the formats used in the LROC/SOC questionnaire. Thus, four of the analog CC items (numbers two, four, six, and seven) were presented as declarative statements. Participants responded to these four items by choosing from a seven-point Likert scale. The other three analog CC items for sample one (numbers one, three, and five) were posed as interrogative questions and answered on a five-point Likert scale with anchors ranging from "very difficult" to "very easy". For example, analog CC item number one was posed in the following format: "How difficult would it be for you to find a good civilian job right now, considering your qualifications and current labor market conditions?"

Each questionnaire also included a single item similar to the items used in previous Army research to measure career intent (e.g., Bullis & Wong, 1994; Oliver et al., 1996; Teplitsky, 1991). In sample one, the career intent item read: "Which of the following best describes your career in the Army or your current intentions for a career?" Sample one officers responded by selecting from a nine-point scale. As administered, the response scale for this question had options ranging (and anchored) from one ("I will attempt to leave the Army before the completion of my initial obligation"); through five ("I have stayed or plan to stay beyond my initial obligation, but I will probably leave the Army before retirement"); to nine ("I have been in the Army for 20 or more years"). In sample two, the career-intent item read: "Which of the following best describes your career intentions at the present time?" Officers in sample two responded to this question on a five-point scale ranging (and anchored) from one ("I will definitely leave the Army upon completion of my present obligation") to five ("I will definitely stay in the Army until retirement").

Procedure

The overall survey for sample one concerned the effects of post inactivation on the organizational commitment of survivors (officers with reassignments to other elements of the Army). In this investigation, all officers remaining at the post received survey packets mailed from a centralized Army survey office. The survey packets contained a letter signed by an official of the post (designed to introduce the study and encourage participation); a 122-item questionnaire; and a self-addressed, stamped envelope for returning the survey. The questionnaire and its administration sought to ensure (and to maximize participants' sense of) anonymity.

In sample two, researchers distributed and administered 160-item questionnaires to officers during in-class sessions held at the posts. One session was held for each of the 47 battalions sampled. Staff officers participated along with other members of their units. Administration procedures emphasized response confidentiality, as opposed to participant anonymity.

In order to examine the construct validity of the analog scales and compare the psychometric properties of the four commitment scales, both exploratory and confirmatory factor analyses were performed. Additionally, the predictive validity of these scales was examined for the two variables rank and career intent. Both correlational and regression analyses were performed. Regression analyses revealed the differential percent of variance accounted for in career intent by each commitment scale.

Results

The analyses reported in this section were based on data combined from both sample one and sample two. As appropriate, parallel analyses were conducted for each of the samples. Sample specific results are occasionally summarized here but are more completely reported in the appendices.

Factor Structure of Commitment Items

It was expected that the Meyer and Allen items and the analog items, when analyzed separately or as a combined set, form dimensions that can be interpreted using Meyer and Allen's framework. This expectation was tested using LISREL (Joreskog & Sorbom, 1989) to conduct confirmatory factor analyses (CFAs) for each set of items and for the combined set. In all CFAs, two- and three-factor models were tested. Both models hypothesized a single Affective Commitment (AC) factor. The three-factor model separated the Continuance Commitment (CC) component into sacrifices and alternatives. Exploratory factor analyses (i.e., principal components analyses with oblique rotations and no a priori specification of the number of factors) were also conducted for description and illumination of CFA results.

Analysis of the Meyer and Allen items. Table 3 depicts the results of the CFAs for the Meyer and Allen items in terms of the criteria suggested by Bagozzi and Yi (1988). Neither of the two models tested was superior to the other. This similarity of results for the two models suggests that separation of sacrifices and alternatives did not improve the model. Both models had the same adjusted goodness of fit index of .85, which was close to the standard (.90) described by Bagozzi and Yi.

Table 4 summarizes the results of the principal components factor analysis for the combined sample. This analysis produced three factors which together accounted for 54.2% of the variance. The items hypothesized to measure CC, with two exceptions, loaded highly on the first factor. All items hypothesized to tap AC loaded strongly on the second factor. The third factor perhaps provided a partial explanation for results of the CFAs. The items that loaded strongly on the third factor were the two CC items not explained by the first factor. While these two items were not unique to either sacrifices or alternatives, both of these items had been reverse coded, possibly implying a methodological artifact. This factor was also found by McGee and Ford (1987) and emerged in the factor analyses conducted separately for sample one and sample

Table 3

Summary of Confirmatory Factor Analyses for the Meyer and Allen Scale

Model	χ^2	df	Goodness-of-Fit	Adjusted Goodness-of-Fit	Root Mean Square Residual	Delta (Normed Fit Index)
Null Model	2467.13	105				
2-Factor Model (AC and CC)	395.49	89	.89	.85	.075	.84
3-Factor Model (AC, CC_{alt}, CC_{sac})	367.83	87	.89	.85	.067	.85

Table 4

Meyer and Allen Exploratory Factor Analysis

Question	1 CC	2 AC	3 Reverse Coded
Meyer & Allen Affective Commitment (AC)			
1. Army problems are my own	.1693	.5644	-.1266
2. Army has a great deal of personal meaning to me	.1391	.7884	-.0061
3. Enjoy discussing the Army with people outside it	.1569	.6173	-.1416
4. Not emotionally attached to the Army*	.0531	.7683	.2329
5. Not feel a sense of belonging to the Army*	.0033	.7952	.2287
6. Not feel "part of the family" in the Army*	.0234	.7164	.0866
7. Could easily attach to another organization*	.1243	.5119	.3753
Meyer & Allen Continuance Commitment (CC)			
1. Not afraid to quit without another job lined up*	.2996	.0119	.6897
2. Life would be disrupted if I left the Army	.7366	.2237	.2210
3. Wouldn't be too costly to leave the Army*	.1597	.1229	.7676
4. Leaving would require considerable personal sacrifice	.7566	.0831	.2495
5. Very hard for me to leave the Army	.6514	.2585	.0884
6. Have too few options to leave the Army	.7565	.0049	.2263
7. Staying in the Army is a matter of necessity	.7637	-.0339	-.0184
8. A neg conseq of leaving is the scarcity of alternatives	.7634	.0940	.1201
Percent of variance accounted for	26.5	19.7	8.0

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

two (Appendix A). The consistency of this third factor across studies raises the possibility that systematic method variance reduced the theoretical fit of the two models tested by CFA.

Analysis of analog items. As with the Meyer and Allen items, LISREL was used to test the two- and three-factor models with the analog commitment items. Table 5 shows the three-component model specifying CC sub-components provided the better overall fit. The three component model was also acceptable in terms of adjusted goodness of fit. These results together suggest that the Meyer and Allen model did provide a framework for structuring the analog items; however, this model was most explanatory with separation of CC into alternatives and sacrifices.

Table 6 describes results of the principal component factor analysis performed on the analog items. Three factors accounting for 55.7% of the variance were extracted. Items comparing the military to a civilian job loaded highly on the first factor. This factor appeared to represent CC_{alt} accounting for 28.4% of the variance. All of the items hypothesized to measure AC had high loadings on the second factor. This second factor accounted for 18.1% of the variance. Items describing difficulties of leaving the Army loaded highly on the third factor. This factor appeared to represent CC_{sac} and accounted for 9.2% of the variance. Sample specific factor analyses (Appendix B) produced similar structures. Results of these analyses were compatible with the CFA testing of the three component model.

Analysis of combined item set. Two-, three-, and six-factor models were tested using both the Meyer and Allen and the analog commitment items. The six-component model extended the two-factor model by separating the two scales by origin (Meyer and Allen vs. analog) as well as by separating the CC scale into CC_{sac} and CC_{alt}. Table 7 summarizes the results for the three models. While not fully reaching the level of fit recommended for acceptance, the six component model tended to produce the best fit. For this model, the expected factor loadings were as expected (positive) and statistically significant. The phi matrix of correlations between factor scores for the six components (Table 8) showed the expected pattern of divergence between the AC and CC factors and the expected pattern of convergence between the two AC factors. The correlations in Table 8 indicated considerable convergence between scores for all CC components except for analog CC_{alt}.

Results of the principal component factor analysis for the combined item set are reported in Table 9. Five factors accounting for a total of 55.1% of the variance were extracted. The first factor appeared to represent CC with seven of the eight Meyer and Allen CC items and four of seven analog CC items loading highly on it. This factor accounted for 24.4% of the variance. The second factor appeared to represent AC as all of the analog AC items and all but two of the Meyer and Allen AC items loaded highly on it. This factor accounted for 16.7% of the variance. The third factor accounted for 5.4% of the variance. It appeared to represent analog CC_{alt} with all four of the analog alternative items loading highly on it. However, none of the Meyer and Allen alternative items loaded highly on this factor. The fourth and fifth factors accounted for 4.6% and 4.0% of the variance, respectively, and tended to apply to the Meyer and Allen items more than to the analog items. The items with the highest loadings on factor four were the reverse coded items: four of the six Meyer and Allen and one of the two of the analog reverse coded items. The majority of the AC items loaded negatively on the fifth factor, with four Meyer

Table 5

Summary of Confirmatory Factor Analyses for the Analog Scale

Model	χ^2	df	Goodness-of-Fit	Adjusted Goodness-of-Fit	Root Mean Square Residual	Delta (Normed Fit Index)
Null Model	1970.60	78				
2-Factor Model (AC and CC)	417.90	64	.86	.80	.085	.79
3-Factor Model (AC, CC_{alt}, CC_{sac})	173.98	62	.94	.91	.05	.91

Table 6

Analog Exploratory Factor Analysis

Question	1 CCalt	2 AC	3 CCsac
Analog Affective Commitment (AC)			
1. Civilians share my values*	-.0365	.6200	.1613
2. Value sense of community in Army	.1614	.6141	-.0206
3. Discourage a friend from joining the Army*	.1319	6095	-.0532
4. Can count on Army people	.2119	6766	-.1475
5. Proud to tell people I'm in the Army	.2723	.7358	.0784
6. Feel part of the Army organization	.2821	.7995	.0614
Analog Continuance Commitment (CC)			
1. Difficult to find job given quals and labor market	.3304	.0236	.7891
2. Standard of living is better in the Army	.7978	.2212	.3697
3. Difficult to leave due to personal or family situation	.3037	.0769	.8292
4. Opportunities to advance are better in Army	.7675	.1666	.2806
5. Difficult to be financially unemployed	.1334	-.0372	.7406
6. Quality of life is better in the Army	.8517	.3260	.3274
7. Personal freedom is better in the Army	6243	.1269	.0584
Percent of variance accounted for	28.4	18.1	9.2

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Table 7

Summary of Confirmatory Factor Analyses for Both Commitment Scales

Model	χ^2	df	Goodness-of-Fit	Adjusted Goodness-of-Fit	Root Mean Square Residual	Delta (Normed Fit Index)
Null Model	5867.34	378				
2-Factor Model (AC and CC)	1568.49	349	.77	.74	.086	.73
3-Factor Model (AC, CC_{alt}, CC_{sac})	1556.44	347	.77	.74	.085	.73
6-Factor Model (Meyer & Allen: AC, CC_{alt}, CC_{sac}, Analog: AC, CC_{alt}, CC_{sac})	1091.61	335	.83	.80	.065	.81

Table 8

Phi Correlation Matrix for Six-Factor Confirmatory Model

	Meyer and Allen (M&A)			Analog		
	AC	CC_{alt}	CC_{sac}	AC	CC_{alt}	CC_{sac}
Meyer & Allen						
AC	--					
CC_{alt}	.05	--				
CC_{sac}	.25	.94*	--			
Analog						
AC	.95*	.06	.25	--		
CC_{alt}	.27*	.50*	.62*	.33*	--	
CC_{sac}	.11	.92*	.92*	.08	.50*	--

* $p < .05$

Table 9

Exploratory Factor Analysis of Both Commitment Scales

Question	1 CC	2 AC	3 Analog CCalt	4 Reverse Coded	5 AC
Meyer and Allen Affective Commitment (AC)					
1. Army problems are my own	.1774	.3635	-.0902	.2524	-.6301
2. Army has a great deal of personal meaning to me	.1267	.7490	-.2242	.3177	-.4085
3. Enjoy discussing the Army with people outside it	.0909	.5444	-.2334	.0632	-.4471
4. Not emotionally attached to the Army*	.0904	.5750	-.1919	.5844	-.4018
5. Not feel a sense of belonging to the Army*	.0245	.7148	-.1042	.5145	-.2958
6. Not feel "part of the family" in the Army*	.0466	.7759	-.1199	.2633	-.1561
7. Could easily attach to another organization*	.1229	.2458	-.2900	.6763	-.2581
Analog Affective Commitment (AC)					
1. Civilians share my values*	.0684	.4837	.0306	.5847	-.0312
2. Value sense of community in Army	-.0106	.5634	-.1752	.2694	-.2022
3. Discourage a friend from joining the Army*	-.0707	.6112	-.1022	.1431	.0491
4. Can count on Army people	-.0269	.6658	-.1683	.1042	-.0374
5. Proud to tell people I'm in the Army	.1470	.7465	-.2382	.1383	-.1889
6. Feel part of the Army organization	.1242	.8000	-.2424	.2453	-.2070
Meyer and Allen Continuance Commitment (CC)					
1. Not afraid to quit without another job lined up*	.4077	.1440	-.0145	.3233	.5908
2. Life would be disrupted if I left the Army	.7324	.1281	-.3452	.2458	-.0847
3. Wouldn't be too costly to leave the Army*	.2126	.0547	-.1308	.6206	.2449
4. Leaving would require considerable personal sacrifice	.7037	.0528	-.4713	.1327	.0397
5. Very hard for me to leave the Army	.6178	.1445	-.3183	.2355	-.1890
6. Have too few options to leave the Army	.7485	-.0443	-.3477	.0767	.0440
7. Staying in the Army is a matter of necessity	.7413	-.0514	-.2057	-.0976	-.0019
8. A neg conseq of leaving is the scarcity of alternatives	.7289	.0832	-.3839	-.0092	.0480
Analog Continuance Commitment (CC)					
1. Difficult to find job given quals and labor market	.7504	.0489	-.3360	.1162	.1188
2. Standard of living is better in the Army	.4439	.1856	-.8113	.1907	.0526
3. Difficult to leave due to personal or family situation	.7999	.0442	-.2894	.2196	-.0082
4. Opportunities to advance are better in Army	.3440	.1854	-.7650	.0833	-.0273
5. Difficult to be financially unemployed	.5772	-.0720	-.1466	.1940	.2616
6. Quality of life is better in the Army	.3810	.2896	-.8556	.2447	-.0278
7. Personal freedom is better in the Army	.2131	.1541	-.5644	.0625	-.1793
Percent of variance accounted for	24.4	16.7	5.4	4.6	4.0

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

and Allen items having the strongest loadings. The analysis conducted on sample one produced four factors which mirrored the first four summarized in Table 9 (Appendix C).

The factors extracted in the principal components analysis add information for explaining the less than desired level of fit of the CFAs for the combined item set. The third minor factor was congruent with earlier results (Table 7 and the separate analysis of the analog items). These results together suggest that only the analog items for CC_{alt} separate from the remaining CC items and scales. This seems compatible with the increased fit of the third model over the other two models but also with the failure of this third model to meet standards for acceptance. The fourth and fifth factors seemed to represent variance around constructs other than those specified in the Meyer and Allen model. Given the negative orientations of these factors, this variance could reflect sensitivity of the items to a "nay say" response tendency or to some psychological state of disengagement (e.g., alienation as opposed to commitment).

Summary. Altogether, results on the factor structures of the Meyer and Allen and the analog items indicate that the Meyer and Allen model provided as good a basis for structuring the analog items as it did the original Meyer and Allen items. In the CFAs, the model fit was less than ideal for the original items alone and for the combination of original and analog items. Regardless, the exploratory analyses showed that the dominant factors in each item set tended to represent AC and CC. The original and analog items were otherwise differentiated by somewhat different sources of variance. The analog items, for example, more consistently supported separation of CC into two components. The Meyer and Allen items tended to reflect variance associated with a negative response tendency. These patterns together raise the possibility of differences in the predictive validities of the analog and original scales.

Scale Development

Separately for the original and analog items, scales were developed or each of the two components of commitment. Each commitment scale was calculated as the mean of the items administered for the scale. Prior to calculation, all items were coded so that higher scores reflected greater favor toward the construct.[5] Descriptive statistics and reliabilities for all four commitment scales are reported in Table 10 for each individual sample, as well as the combined sample. The obtained scale reliabilities were consistent with the median of the reliabilities (.85 and .79 for AC and CC respectively) reported in the studies reviewed by Allen and Meyer (1996).

Sample and Scale Differences

For each scale, an independent sample t-test was performed to examine the differences in scale scores between sample one and two. As presented in Table 10, sample one was consistently higher in AC ($\underline{M}$ = 3.74 and 4.05 as compared to $\underline{M}$ = 3.64 and 3.85) and lower in CC ($\underline{M}$ = 2.58 and 2.40 as compared to $\underline{M}$ = 2.81 and 2.87) when measured by either scale. This may reflect the differences in seniority between the two samples (sample one consisted of higher ranking officers). Statistically significant differences were found between the samples on the analog AC

[5] Responses originally scored 1-7 were reassigned values as follows: 1=1, 2=1.67, 3=2.33, 4=3, 5=3.67, 6=4.33, 7=5.

Table 10

Descriptive Statistics and Reliabilities for Both Commitment Scales

Scale	Sample 1	Sample 2	Combined Sample
Meyer & Allen Affective Commitment			
M	3.74	3.64	3.67[d]
SD	0.67	0.69	0.69
α	0.80	.82	0.81
Analog Affective Commitment			
M	4.05[a]	3.85[a]	3.92[e]
SD	0.63	0.65	0.65
α	0.79	.74	0.75
Meyer & Allen Continuance Commitment			
M	2.58[b]	2.81[b]	2.74[d]
SD	0.74	0.78	0.77
α	0.79	.79	0.79
Analog Continuance Commitment			
M	2.40[c]	2.87[c]	2.72[e]
SD	0.79	0.71	0.76
α	0.81	.74	0.78

[a] $t_{(248)} = 2.92$, $p \leq .004$
[b] $t_{(252)} = 2.88$, $p \leq .004$
[c] $t_{(218)} = 5.69$, $p \leq .000$
[d] $t_{(399)} = 20.01$, $p \leq .000$
[e] $t_{(396)} = 26.51$, $p \leq .000$

scale ($t_{(248)} = 2.92$, $p = .004$), Meyer and Allen CC scale ($t_{(252)} = 2.88$, $p = .004$), and the analog CC scale ($t_{(218)} = 5.69$, $p = .000$). The only scale on which the samples did not significantly differ was the Meyer and Allen AC scale ($M = 3.74$ and 3.64; $t_{(247)} = 1.30$, $p = .194$). With the exception of the Meyer and Allen AC scale, these results supported the hypothesis that the commitment of officers in sample one differ from the commitment of officers in sample two.

Two dependent sample t-tests were performed to determine if there were significant differences between AC and CC scales in the combined sample. Support for the hypothesis that officers are higher in AC than CC was found for both commitment measures. As displayed in Table 10, the mean for the Meyer and Allen AC scale was 3.67 while the mean for the Meyer and

Allen CC scales was 2.74 ($t_{(399)} = 20.01$, $p = .000$). The mean for the analog AC scale was 3.92 while the mean for the analog CC scale was 2.72 ($t_{(396)} = 26.51$, $p = .000$).

Correlational Analyses

The correlations between rank, career intent, and the four commitment scales for the combined sample are reported in Table 11. Support was found for the hypothesis that rank is significantly correlated with career intent ($r = .27$, $p < .01$). The expected relationship between rank and AC was obtained when AC was measured by the Meyer and Allen AC scale ($r = .11$, $p = .026$), but this relationship was not significant for the analog AC scale ($r = -.01$, $p = .84$). However, career intent was significantly correlated with both types of commitment and for both the analog and original scales: AC (.38 and .32, $p < .01$) and CC (.13 and .19, $p < .01$). Consistent with expectation, correlations between AC and career intent were relatively higher than correlations between CC and career intent for both measures.

Table 11 also contains data pertinent to the convergent validity of the analog scales. The two AC scales were significantly correlated with one another ($r = .73$, $p < .01$), and the two CC scales were significantly correlated with one another ($r = .70$, $p < .01$). The correlations across constructs were appreciably smaller.

Sample specific correlations are reported in Appendix D. With only a few exceptions, results for the two samples appeared to be generally similar to each other and to those for the combined sample. Most exceptions seem to have been associated with the overall pattern of stronger correlations for sample one than for sample two. Within this pattern, results for sample one showed relatively less divergence between the measures of AC and CC and stronger relationships between CC and career intent.

In order to determine if AC predicted career intent above and beyond rank, two ANCOVAs were conducted. After covarying out the effects of rank, results revealed main effects for both AC scales on career intent when each scale was examined individually.

Regression Analyses

To examine whether the commitment scales accounted for similar proportions of variance in career intent, four stepwise multiple regressions were performed. In all equations career intent was the dependent variable. When the Meyer and Allen AC scale was entered into the equation first ($R^2 = .15$), the analog AC scale did not add significantly to the equation. When the analog AC scale was entered into the equation first ($R^2 = .10$), the Meyer and Allen AC scale did add unique variance to the equation ($R^2 = .15$). Thus, the Meyer and Allen AC scale appeared to account for more variance in career intent than the analog AC scale. In contrast, the analog CC scale accounted for more variance that did the original CC scale. More specifically, when the Meyer and Allen CC scale was entered into the equation first ($R^2 = .02$), the analog CC scale did add unique variance to the equation ($R^2 = .04$). When the analog CC scale was entered into the

Table 11

Correlations for Rank, Career Intent, and Both Commitment Scales

	Rank	Career Intent	Meyer & Allen AC	Analog AC	Meyer & Allen CC	Analog CC
Rank	--					
Career Intent	.27**	--				
Meyer & Allen AC	.11*	.38**	--			
Analog AC	-.01	.32**	.73**	--		
Meyer & Allen CC	.04	.13**	.17**	.10*	--	
Analog CC	.08	.19**	.24**	.20**	.70**	--

* $p < .05$, ** $p < .01$. AC = Affective Commitment. CC = Continuance Commitment.

equation first ($R^2 = .04$), the Meyer and Allen CC scale did not add significantly to the equation. Sample specific regressions, reported in Appendix E, showed similar patterns.

Discussion

The analog approach seeks to capitalize on and restructure existing organizational data files for use in research on broader, theoretical issues. This study applied the analog approach to develop and validate scales for use in longitudinal research on organizational commitment. Results generally supported the analog scales as proxy measures of affective (AC) and continuance commitment (CC). Despite their promise for research use, empirically derived scales suggest caution in interpreting results and drawing conclusions. With this reservation in mind, results of this development of analog scales add to the wider body of research on organizational commitment.

Results of this study altogether support the use of the analog scales in research on organizational commitment. The analog items formed the expected dimensions of AC and CC as indicated by results of the CFA. This analysis supported a three-factor model of commitment. These components included AC but separated CC into CC_{alt} and CC_{sac}. These components have been found in past factor analyses of the AC and CC items (e.g., McGee & Ford, 1987)). In line with the CFA, the first two factors extracted in all exploratory factor analyses tended to capture the AC or the CC items. The minor factors, in the exploratory analyses, generally complemented a more dominant CC factor or represented a variant of AC. Representation of the AC or CC components was further indicated by the internal consistencies of the analog scales and by the convergence of measures around the expected construct (AC or CC) as opposed to convergence around method (analog or original).

In addition to forming the expected dimensions, the analog scales generally performed like the original scales in predicting career intent and in describing sample differences. There were two major differences in the demonstrated predictive validity of the analog and original scales. First, only the original AC scale was significantly correlated with rank. While significant, this correlation was relatively weak (.11). Second, for the officers in sample one, the expectation that career intent has a relatively stronger relationship with AC than with CC was supported with the original scales only. In sample one, analog AC and CC did not differentially relate to career intent, with both analog scales having shown moderately low correlations (about .30) with career intent.

While results were promising, the regression analyses revealed a disadvantage of the analog scales. That is, as argued earlier, analog scales have value when they "perform like" the originals. The regression analyses showed that the original and analog scales overlapped in their prediction of career intent, but the overlap was not complete. The lack of overlap was such that for any pair of scales, one scale explained variance over and above that explained by the other scale. For the AC scales, the stronger scale was the Meyer and Allen scale. The analog scale was the stronger CC predictor. Given these patterns, use of the analog AC scale risks a failure to uncover relationships that actually exist with AC. On the other hand, use of the analog CC scale risks results that falsely portray (too strong, non-existent) relationship of CC with other variables. Sample one results for career intent may reflect these risks.

The divergence between analog and original scales calls into question the content validity of the analog scales. This divergence suggests that the analog scales measured more (CC) or fewer (AC) aspects of a construct than did the originals. Shortfalls in content validity are likely when proxy measures are developed through empirical approaches. By such approaches, existing data are used to measure a construct. The resulting content validity of a measure depends on qualities of the existing pool of data and on the procedures used to manipulate the data into a proxy measure. In an earlier application (Evans, 1997), analog scales were derived by regression analyses. The present application used expert judgment to select items and likely yielded greater face validity in the items combined into the scale for a construct. Regardless, results suggest that the constructs of AC and CC were not perfectly represented by the items selected.

Inspection of the items in the original and analog scales (see Table 1) allows speculation about the types of differences that exist in the content of the analog and original items. The original AC items seem to have referents that are broad, general, and descriptive of internal states or emotions. In contrast, the analog AC items do not as consistently refer to the respondent's internal state. For the CC scales, differences are noticeable for both the alternative items and the sacrifice items. The original alternative items put focus on the alternatives whereas the analog items refer to the positive aspects of the Army. Differences for the sacrifice items are like those described for the AC items. The original sacrifice items tend to refer to a general loss, but the analog items refer to more specific difficulties.

The imperfect representation of AC and CC by the analog scales limits their use in description as well as in prediction. Summary statistics could misrepresent the level of commitment of a sample. In Table 9, for example, it appears that while the directions of differences between AC and CC were consistent for both the analog and original scales, the analog AC scale described somewhat stronger levels of commitment than did the Meyer and Allen scale. Moreover, with misrepresentation of the content space, responses to individual analog items would be less useful for ascertaining the aspect of AC or CC commitment that is important for understanding a particular finding. Limitations on description are likely greater when, as in the earlier application of the analog approach (Evans, 1977), the data used as proxy measure were selected and combined mainly on the basis of the level of their empirical prediction of the original measure.

While discipline in interpreting findings is warranted, results for the original and analog scales were generally consistent and contribute to the wider literature on organizational commitment. With respect to the measurement of commitment, AC and CC appear to be distinguishable from each other. This fits with Allen & Meyer's review (1996). Somewhat different from this review were the minor factors on which the original AC items had high loadings. The minor factors suggest the possibility that rather than a single dimension, the original AC item taps multiple, collinear dimensions. Inspection of the items with high loadings suggested that the minor factors possibly represented openness of the original AC items to a response set. Allen and Meyer's review suggested that this response set could reflect an individual attitude such as the dispositional affect of a respondent. The findings here are nevertheless consistent with the wealth of the literature on career propensity (Allen & Meyer).

The findings showed a relationship between commitment and career propensity, with a relatively stronger relationship found for AC than for CC.

Following the purpose of this study, future research would involve cautious use of the analog scales to restructure and open the LROC/SOC files to research on broad issues of organizational commitment. Due to the longitudinal period covered, the LROC/SOC offers a potentially unique opportunity for research on organizational commitment, its development, and measurement. The analog scales represent two components of commitment studied in the wider literature and, thus, help to realize the research potential of the LROC/SOC data set by linking and anchoring findings to the Meyer and Allen framework. While analyses based on theory will contribute to wider literature, it is important to recognize that this linkage also helps to strengthen certainty about implications for practical issues. Future research could take a number of different courses. As part of that future course, early attention should probably be directed toward confirmation of (1) the dimensionality of the analog items with LROC/SOC data and (2) the suitability of the confirmed scales for study of change in individuals across time.

References

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. Journal of Occupational Psychology, 63, 1-18.

Allen, N. J., & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49, 252-276.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16, 74-94.

Bateman, T. S., & Strasser, S. (1984). A longitudinal analysis of the antecedents of organizational commitment. Academy of Management Journal, 27, 95-112.

Bluedorn, A. C. (1982). A unified model of turnover from organizations. Human Relations, 35, 135-153.

Bullis, R. C., & Wong, L. (1994). Career intentions and organizational commitment: Is what a manager influences significant? Paper presented to the Careers Division, Academy of Management Meeting, Dallas, TX.

Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment . Journal of Abnormal and Social Psychology, 51, 629-36.

Evans, K. L. (1997). Estimating personality constructs from archival data. (ARI Technical Report 1063) Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A328816)

Farkas, A. J., & Tetrick, L. E. (1989). A three-wave longitudinal analysis of the causal ordering of satisfaction and commitment on turnover decisions. Journal of Applied Psychology, 74 (6), 855-868.

Fisher, C. D. (1985). Social support and adjustment to work: A longitudinal study. Journal of Management, 11, 39-53.

Hackett, R. D., Bycio, P., & Hausdorf, P. (1994). Further assessments of Meyer and Allen's (1991) three-component model of organizational commitment. Journal of Applied Psychology, 79, 15-23.

Harris, B. C. (1994). Perceptions of Army officers in a changing Army. (ARI Research Report 1662). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A282 636)

Harris, B. C., Wochinger, K., Schwartz, J. P., & Parham, L. (1993). Longitudinal research on officer careers: Volume 1. Technical manual for 1988-1992 surveys (ARI Research Product 93-10). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD 273 187)

Joreskog, K. G., & Sorbom, D. (1989). LISREL 7: A Guide to the program and applications (2nd ed.). Chicago: SPSS Inc.

Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. Journal of Conflict Resolution, 2, 51-60.

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. Psychological Bulletin, 108 (2), 171-194.

McCloy, R. A., Laurence, J. H., & DiFazio, A. S. (1996). Monitoring the attitudes and perceptions of junior officers: The longitudinal research on officer careers (LROC) survey. (ARI Study Note 96-08). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A320 598)

McGee, G. W., & Ford, R. C. (1987). Two (or more?) dimensions of organizational commitment: Reexamination of the affective and continuance commitment scales. Journal of Applied Psychology, 72, (4) 638-642.

Meyer, J. P., & Allen, N. J. (1987). A longitudinal analysis of the early development and consequences of organizational commitment. Canadian Journal of Behavioral Science, 19 (2), 199-215.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. Human Resource Management Review, 1, 61-98.

Meyer, J. P., & Allen, N. J. (1997). Commitment in the workplace: Theory, research, and application. Thousand Oaks: Sage Publications.

Meyer, J. P., Allen, N. J., & Gellatly, I. R. (1990). Affective and continuance commitment to the organization: Evaluations of measures and analysis of concurrent and time-lagged relations. Journal of Applied Psychology, 75 (6), 710-720.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to the organizations and occupations: Extension and test of a three-component model. Journal of Applied Psychology, 78, 538-551.

Michaels, C., & Spector, P. (1982). Causes of employee turnover: A test of the Mobley, Griffeth, Hand, and Meglino model. Journal of Applied Psychology, 67, 53-59.

Moskos, C. C. (1977). From instruction to occupation: Trends in military organization. Armed Forces and Society, 4 (1), 41-50.

Moskos, C. C. (1981). Institution versus occupation: Contrasting model of military organization. Final Report, AFOSR-TR-81-0295. Bolling AFB, DC: Air Force Office of Scientific Research.

Moskos, C. C. (1983). Contrasting models of military social organization. Unpublished Technical Report. Evanston, IL: Northwestern University.

Moskos, C. C. (1986). Institutional/Occupational trends in armed forces: An update. Armed Forces and Society, 12 (3), 377-382.

Moorman, R. H., Niehoff, B. P., & Organ, D. W. (1993). Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. Employee Responsibilities and Rights Journal, 6, 209-225.

Mowday, R. T., & McDade, T. (1979). Linking behavioral and attitudinal commitment: A longitudinal analysis of job choice and job attitudes. Proceedings of the 39th Annual Meeting of the Academy of Management, Atlanta, GA.

Mowday, R. T., & McDade, T. (1980, August). The development of job attitude, job perceptions, and withdrawal propensities during the early employment period. Paper presented at the 40th annual meeting of the Academy of Management, Detroit, MI.

Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). Employee-organization linkages: The psychology of commitment, absenteeism, and turnover. New York: Academic Press.

Oliver, L. W., Tiggle, R. B., & Hayes, S. M. (1996). Preliminary report on selected life course variables and reasons for volunteering for the 28th Sinai deployment. (Army Technical Report No. 1046). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A320 362)

O'Reilly, C., III, & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. Journal of Applied Psychology, 71 (3), 492-499.

Pierce, J. L., & Dunham, R. B. (1987). Organizational commitment: Pre-employment prosperity and initial work experiences. Journal of Management, 13, 163-178.

Porter, L. W., Crampion, W. J., & Smith, F. J. (1976). Organizational commitment and managerial turnover: A longitudinal study. Organizational Behavior and Human Performance, 15, 87-98.

Porter, L. W., Steers, R. M., Mowday, R. T., & Boulian, P. V. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. Journal of Applied Psychology, 59, 603-609.

Reilly, N. P., & Orsak, C. L. (1991). A career stage analysis of career and organizational commitment in nursing. Journal of Vocational Behavior, 39 (3), 311-330.

Segal, D. R., & Yoon, Y. H. (1984). Institutional and occupational models of the Army in the career force: Implications for definition of mission and perceptions of combat readiness. Journal of Political and Military Sociology, 12, 243-256.

Shore, L. M., & Tetrick, L. E. (1991). A construct validity study of the Survey of Perceived Organizational Support. Journal of Applied Psychology, 76, 637-643.

Somers, M . J. (1993). A test of the relationship between affective and continuance commitment using non-recursive models. Journal of Occupational and Organizational Psychology, 66, 185-192.

Teplitsky, M. L. (1991). Junior Army officer retention intentions: A path analytic model. (Army Technical Report No. 934). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A242 094)

Tremble, T. R., Jr., & Goodwin, G. F. (1992). Moskos' institutional orientations: A tracking through the 1980's. Proceedings of the 34th Annual Conference of the Military Testing Association, 1, 384-389. San Diego, CA: Navy Personnel Research and Development Center.

Tremble, T. R., Jr., Kane, T. D., & Stewart, S. R. (1997). A note on organizational leadership as problem solving. (ARI Research Note 97-03) Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A267 094)

Van Maanen, J. (1975). Police socialization: A longitudinal examination of job attitudes in an urban police department. Administrative Science Quarterly, 20, 207-228.

Werbel, J. D., & Gould, S. (1984). A comparison of the relationship of commitment to turnover in recent hires and tenured employees. Journal of Applied Psychology, 69, 687-690.

Whitener, E. M., & Walz, P. M. (1993). Exchange theory determinants of affective and continuance commitment and turnover. Journal of Vocational Behavior, 42, 265-281.

Williams, L. J., & Hazer, J. T. (1986). Antecedents and consequences of satisfaction and commitment in turnover models: A reanalysis using latent variable structural equation methods. Journal of Applied Psychology, 71, 219-231.

Wong, L., & McNally, J. (1994). Downsizing the Army: Some policy implications affecting the survivors. Armed Forces & Society, 20 (2), 199-216.

Appendix A

Sample Specific, Exploratory Analyses of the Meyer and Allen Commitment Scales

Tables A_1 and A_2 report results of the principal components analysis, performed for each sample, to the 15 Meyer and Allen affective commitment (AC) and continuance commitment (CC) items. For sample one (see Table A_1), three factors accounting for 54.8% of the variance were extracted. The first factor appeared to represent AC and accounted for 28.5% of the variance. A second factor appeared to represent CC and accounted for 18.0% of the variance. The final factor appeared to represent a method artifact of reverse coded items and accounted for 8.3% of the variance.

For sample two (see Table A_2), four factors accounting for 61.7% of the variance were extracted. The first factor appeared to represent CC and accounted for 23.8% of the variance. A second factor appeared to represent AC and accounted for 22.4% of the variance. The third factor appeared to represent reverse coded items and accounted for 8.7% of the variance. Only one of Meyer and Allen's AC items, "I really feel as if the Army's problems are my own," loaded highly on the final factor, which accounted for 6.8% of the variance. This particular item has loaded on its own factor in previous studies as well (Oliver et al., 1996).

Table A_1

Sample One: Meyer & Allen Exploratory Factor Analysis

Question	1 AC	2 CC	3 Reverse Coded
Meyer & Allen Affective Commitment (AC)			
1. Army problems are my own	.5872	.2087	-.0334
2. Army has a great deal of personal meaning to me	.7894	.1860	.0995
3. Enjoy discussing the Army with people outside it	.6195	.1312	-.1293
4. Not emotionally attached to the Army*	.7473	.1055	.3921
5. Not feel a sense of belonging to the Army*	.7991	.1281	.3081
6. Not feel "part of the family" in the Army*	.7233	.0525	.0622
7. Could easily attach to another organization*	.4842	.0796	.5557
Meyer & Allen Continuance Commitment (CC)			
1. Not afraid to quit without another job lined up*	.0007	.4133	.5818
2. Life would be disrupted if I left the Army	.2648	.7065	.2802
3. Wouldn't be too costly to leave the Army*	.0773	.1790	.7761
4. Leaving would require considerable personal sacrifice	.1362	.7580	.2618
5. Very hard for me to leave the Army	.2996	.6204	.0901
6. Have too few options to leave the Army	-.0216	.7273	.2643
7. Staying in the Army is a matter of necessity	.0372	.7995	-.0136
8. A neg conseq of leaving is the scarcity of alternatives	.1586	.7441	.0563
Percent of variance accounted for	28.5	18.0	8.3

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Table A_2

Sample Two: Meyer & Allen Exploratory Factor Analysis

Question	1 CC	2 AC	3 Reverse Coded	4 AC #1
Meyer & Allen Affective Commitment (AC)				
1. Army problems are my own	.0301	.2875	-.0276	.8751
2. Army has a great deal of personal meaning to me	.0103	.7494	-.0620	.3646
3. Enjoy discussing the Army with people outside it	.1429	.7341	-.0567	.0471
4. Not emotionally attached to the Army*	-.1055	.6760	.1200	.5267
5. Not feel a sense of belonging to the Army*	-.2187	.7568	.1803	.2633
6. Not feel "part of the family" in the Army*	-.0195	.7103	.2872	.2622
7. Could easily attach to another organization*	.2027	.6037	-.0788	-.1256
Meyer & Allen Continuance Commitment (CC)				
1. Not afraid to quit without another job lined up*	.1665	.0082	.7265	-.3267
2. Life would be disrupted if I left the Army	.7704	.1526	.0488	-.0537
3. Wouldn't be too costly to leave the Army*	.1719	.0383	.7798	.1712
4. Leaving would require considerable personal sacrifice	.7538	-.0292	.1298	.0178
5. Very hard for me to leave the Army	.6716	.2523	.0969	-.1208
6. Have too few options to leave the Army	.8189	.0008	.1548	.0867
7. Staying in the Army is a matter of necessity	.6683	-.0947	-.1544	-.2797
8. A neg conseq of leaving is the scarcity of alternatives	.7758	.0002	.2629	-.0442
Percent of variance accounted for	23.8	22.4	8.7	6.8

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Appendix B

Sample Specific, Exploratory Analyses of the Analog Commitment Scales

The factor structure of the 13 analog commitment items were examined for each individual sample. The results of these factor analyses are reported in Tables B_1 and B_2. For sample one (see Table B_1), three factors accounting for 54.7% of the variance were extracted. The first factor appeared to represent Affective Commitment (AC) and accounted for 29.9% of the variance. A second factor appeared to represent Continuance Commitment sacrifices (CC_{sac}) and accounted for 15.2% of the variance. The final factor appeared to represent Continuance Commitment alternatives (CC_{alt}) and accounted for 9.6% of the variance.

For sample two (see Table B_2), three factors accounting for 59.1% of the variance were extracted. The first factor appeared to represent CC and accounted for 27.7% of the variance. A second factor appeared to represent AC and accounted for 22.6% of the variance. The third factor appeared to represent CC_{alt} and accounted for 8.8% of the variance. The factors extracted for both of these analyses resemble the factors extracted in the same analysis with the combined sample and reported in Table 6.

Table B_1

Sample One: Analog Exploratory Factor Analysis

Question	1 AC	2 CCsac	3 CCalt
Analog Affective Commitment (AC)			
1. Civilians share my values*	.6118	.2144	-.0980
2. Value sense of community in Army	.6436	-.1081	-.1802
3. Discourage a friend from joining the Army*	.5634	.0554	-.2876
4. Can count on Army people	.6288	-.1563	-.3757
5. Proud to tell people I'm in the Army	.7448	.0699	-.3183
6. Feel part of the Army organization	.7776	.0886	-.4047
Analog Continuance Commitment (CC)			
1. Difficult to find job given quals and labor market	.1488	.8117	-.2191
2. Standard of living is better in the Army	.3185	.2144	-.8027
3. Difficult to leave due to personal or family situation	.1169	.8549	-.2426
4. Opportunities to advance are better in Army	.2773	.0997	-.7342
5. Difficult to be financially unemployed	-.0534	.7001	-.1338
6. Quality of life is better in the Army	.4477	.1888	-.8536
7. Personal freedom is better in the Army	.1685	.1803	-.6297
Percent of variance accounted for	29.9	15.2	9.6

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Table B_2

Sample Two: Analog Exploratory Factor Analysis

Question	1 CC	2 AC	3 CCalt
Analog Affective Commitment (AC)			
1. Civilians share my values*	-.0766	.6284	.2612
2. Value sense of community in Army	.1855	.5768	-.0349
3. Discourage a friend from joining the Army*	-.0991	.6707	-.1265
4. Can count on Army people	.0172	.7253	.0078
5. Proud to tell people I'm in the Army	.0832	.7632	-.1482
6. Feel part of the Army organization	.0154	.8427	-.1139
Analog Continuance Commitment (CC)			
1. Difficult to find job given quals and labor market	.7431	-.0990	-.2105
2. Standard of living is better in the Army	.7474	.1103	-.5293
3. Difficult to leav e due to personal or family situation	.7608	.0716	-.1639
4. Opportunities to advance are better in Army	.6540	.0927	-.5815
5. Difficult to be financially unemployed	.7020	.0018	.1483
6. Quality of life is better in the Army	.6599	.2505	-.6242
7. Personal freedom is better in the Army	.1439	.0061	-.8529
Percent of variance accounted for	27.7	22.6	8.8

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Appendix C

Exploratory Analyses of Both Commitment Scales

A principal components analysis was also performed for sample one to explore the factors obtained when the 28 items from all scales were entered at the same time. (A factor analysis with all of the commitment items for sample two was inappropriate due to the size of the sample.) As reported in Table C_1, six factors accounting for 58.9% of the variance were extracted for sample one. Only the first four factors, each accounting for more than 4% of the variance, are displayed. Factors five and six with eigenvalues of 1.09 and 1.06, accounting for 3.9 and 3.8% of the variance respectively, did not appear to be significantly different from factor seven with an eigenvalue of .92, accounting for 3.3% of the variance. Therefore, factors five and six are not reported. The first factor appeared to represent Affective Commitment (AC) and accounted for 26.2% of the variance. The second factor appeared to represent Continuance Commitment (CC) and accounted for 14.6% of the variance. The third factor appeared to represent analog CC_{alt} and accounted for 5.4% of the variance. The fourth factor appeared to represent reverse coding and accounted for 5.0% of the variance. Again, the factors extracted for this analysis resemble those extracted in the same analysis with the combined sample reported in Table 8.

Table C_1

Sample One: Combined Factor Analysis

Question	1 AC	2 CC	3 Analog CCalt	4 Reverse Coded
Meyer and Allen Affective Commitment (AC)				
1. Army problems are my own	.4043	.2364	.0762	.3017
2. Army has a great deal of personal meaning to me	.7909	.1817	.2858	.3371
3. Enjoy discussing the Army with people outside it	.5769	.1050	.2137	.0291
4. Not emotionally attached to the Army*	.6073	.1605	.2140	.6150
5. Not feel a sense of belonging to the Army*	.7199	.1398	.2465	.5141
6. Not feel "part of the family" in the Army*	.7563	.0671	.1966	.2229
7. Could easily attach to another organization*	.2867	.0936	.2913	.6951
Analog Affective Commitment (AC)				
1. Civilians share my values*	.4346	.1389	.0562	.5619
2. Value sense of community in Army	.5856	-.1031	.1750	.2652
3. Discourage a friend from joining the Army*	.5333	-.0240	.2705	.0288
4. Can count on Army people	.6151	.0145	.3483	.0902
5. Proud to tell people I'm in the Army	.7579	.1669	.2406	.1140
6. Feel part of the Army organization	.7983	.1778	.3355	.2651
Meyer and Allen Continuance Commitment (CC)				
1. Not afraid to quit without another job lined up*	.1100	.4609	.1174	.2993
2. Life would be disrupted if I left the Army	.1984	.7045	.2196	.3208
3. Wouldn't be too costly to leave the Army*	-.0029	.1994	.1993	.6722
4. Leaving would require considerable personal sacrifice	.1482	.7164	.4091	.1730
5. Very hard for me to leave the Army	.1621	.5759	.2773	.2287
6. Have too few options to leave the Army	-.0862	.7391	.2360	.2002
7. Staying in the Army is a matter of necessity	-.0146	.7598	.2213	-.0059
8. A neg conseq of leaving is the scarcity of alternatives	.1148	.7356	.2427	.0383
Analog Continuance Commitment (CC)				
1. Difficult to find job given quals and labor market	.1603	.7587	.1760	.1747
2. Standard of living is better in the Army	.2839	.3463	.7903	.2883
3. Difficult to leave due to personal or family situation	.0719	.7703	.1840	.2890
4. Opportunities to advance are better in Army	.2796	.1813	.7290	.1961
5. Difficult to be financially unemployed	-.1172	.4672	.1209	.1457
6. Quality of life is better in the Army	.3982	.2728	.8207	.3082
7. Personal freedom is better in the Army	.1293	.2221	.5962	.1531
Percent of variance accounted for	26.2	14.6	5.4	5.0

Note. *Reverse coded items. Loadings greater than or equal to .40 are shaded.

Appendix D

Sample Specific Correlations for Both Commitment Scales

The correlations between rank, career intent, and the four commitment scales are reported in Table D_1 for sample one and Table D_2 for sample two.

In sample one, rank was significantly correlated with career intent ($r = .28$, $p = .000$) and with the Meyer and Allen Affective Commitment (AC) scale ($r = .13$, $p = .029$). Career intent was significantly correlated with all four commitment scales. In addition, the two AC scales were significantly correlated with one another ($r = .75$, $p = .000$), and the two Continuance Commitment (CC) scales were significantly correlated with one another ($r = .66$, $p = .000$).

In sample two, rank was significantly correlated with career intent ($r = .43$, $p = .000$). The correlation between rank and the Meyer and Allen CC scale also approached significance ($r = -.17$, $p = .062$). Career intent was significantly correlated with three of the four commitment scales. (The correlation between the analog CC and career intent approached significance; $r = .17$, $p = .057$.) Once again, the AC scales were highly correlated with one another ($r = .70$, $p = .000$), and the CC scales were highly correlated with one another ($r = .79$, $p = .000$). It should be noted that the correlations for sample one were consistently higher than the correlations for sample two which may be a result of the different sample sizes.

Table D_1

Sample One: Correlations

	Rank	Career Intent	Meyer & Allen AC	Analog AC	Meyer & Allen CC	Analog CC
Rank	--					
Career Intent	.28**	--				
Meyer & Allen AC	.13*	.42**	--			
Analog AC	-.02	.31**	.75**	--		
Meyer & Allen CC	.07	.14*	.25**	.16**	--	
Analog CC	.10	.30**	.37**	.35**	.66**	--

* $p < .05$, ** $p < .01$. AC = Affective Commitment. CC = Continuance Commitment.

Table D_2

Sample Two: Correlations

	Rank	Career Intent	Meyer & Allen AC	Analog AC	Meyer & Allen CC	Analog CC
Rank	--					
Career Intent	.43**	--				
Meyer & Allen AC	.11	.31**	--			
Analog AC	.13	.29**	.70**	--		
Meyer & Allen CC	-.17	.20*	.03	.03	--	
Analog CC	-.14	.17	.08	.05	.79**	--

* $p < .05$, ** $p < .01$. AC = Affective Commitment. CC = Continuance Commitment.

Appendix E

Sample Specific Regression Analyses for Both Commitment Scales

In order to determine if the commitment scales account for different proportions of variance in career intent, four stepwise multiple regressions were performed for each sample. In all equations career intent was the dependent variable. For sample one, when the Meyer and Allen Affective Commitment (AC) scale was entered into the equation first (R^2 = .18), the analog AC scale did not add significantly to the equation. As could be expected, when the analog AC scale was entered into the equation first (R^2 = .10), the Meyer and Allen AC scale did add unique variance to the equation (R^2 = .18). In this sample, the Meyer and Allen AC scale appeared to account for more variance in career intent than the analog AC scale. On the other hand, when the Meyer and Allen Continuance Commitment (CC) scale was entered into the equation first (R^2 = .02), the analog CC scale did add unique variance to the equation (R^2 = .10). As could be expected, when the analog CC scale was entered into the equation first (R^2 = .09), the Meyer and Allen CC scale did not add significantly to the equation. In this sample, the analog CC scale appears to be accounting for more variance in career intent than the Meyer and Allen CC scale.

Likewise in sample two, the analog AC scale did not add any variance above and beyond that accounted for by the Meyer and Allen AC scale (R^2 = .18). The Meyer and Allen AC scale did add variance above and beyond that accounted for by the analog AC scale (ΔR^2 = .08). For this sample as well, the Meyer and Allen AC scale accounted for more variance in career intent than the analog AC scale. Similar to sample one, the analog CC scale did add variance above and beyond that accounted for by the Meyer and Allen CC scale (ΔR^2 = .08), but the Meyer and Allen CC scale did not add any variance above and beyond that accounted for by the analog CC scale (R^2 = .09). For this sample, the analog CC scale seemed to account for more variance in career intent than the Meyer and Allen CC scale. The amount of variance accounted for was consistently higher in sample one than in sample two, which is in agreement with the correlation matrices depicted previously.