



Protean and boundaryless careers: An empirical exploration

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Abstract

While the constructs of protean and boundaryless careers have informed career theory for years, rigorous empirical examinations of these career models have lagged behind. This study seeks to redress this situation by constructing and developing four new scales to measure protean and boundaryless career attitudes. The scales related to protean career attitudes measure self-directed career management and values-driven predispositions. The scales related to boundaryless career attitudes measure boundaryless mindset and organizational mobility preference. The initial validation of these scales, consisting of three studies, demonstrates their reliability and validity.

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1. Introduction

The decline of the traditional organizational career requires new ways of viewing careers. Over the last decade, two new perspectives on careers have emerged and become popular in the organizational literature: the protean career and the boundaryless career. The protean career as espoused by Hall (1976) and Hall (2002) focuses on achieving

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subjective career success through self-directed vocational behavior. The boundaryless career (Arthur, 1994) focuses on crossing both objective and subjective dimensions of career at multiple levels of analysis, including organizational position, mobility, flexibility, the work environment, and the opportunity structure while at the same time de-emphasizing reliance on organizational promotions and career paths.

While the protean and boundaryless career models have been very successful in informing theory, they have prompted limited research and application because they lack operational definition by appropriate psychometric measures. This article describes the construction and initial validation of scales that measure protean career attitudes and boundaryless career attitudes. The new scales were correlated with existing measures to begin establishing their convergent validity.

1.1. The protean and boundaryless models of career

The protean career centers on Hall's, 1976, 1996, 2002 conception of psychological success resulting from individual career management, as opposed to career development by the organization. A protean career has been characterized as (Hall, 1996) involving greater mobility, a more whole-life perspective, and a developmental progression. Whether these latter dimensions relate to the protean career remains to be seen. In more recent renditions of the protean career model, Briscoe and Hall (2002) have characterized it as involving both a values-driven attitude and a self-directed attitude toward career management.

Individuals who hold protean career attitudes are intent upon using their own values (versus organizational values for example) to guide their career (“values-driven”) and take an independent role in managing their vocational behavior (“self-directed”). An individual who did not hold protean attitudes would be more likely to “borrow” external standards, as opposed to internally developed ones, and be more likely to seek external direction and assistance in behavioral career management as opposed to being more proactive and independent. While most protean individuals might in fact exhibit more mobility and a learning orientation, we posit that mobility and learning may be correlates of a protean career, but not necessary components of it.

A person with a boundaryless career mindset “navigates the changing work landscape by enacting a career characterized by different levels of physical and psychological movement” (Sullivan & Arthur, current issue, p. 9). Related to the notion of psychological boundarylessness, we suggest that career actors will vary in the attitude that they hold toward initiating and pursuing work-related relationships across organizational boundaries. This does *not* necessarily imply physical nor employment mobility. Thus a person with a decidedly high “boundaryless” attitude toward working relationships across organizational boundaries is comfortable, even enthusiastic about creating and sustaining active relationships beyond organizational boundaries.

While we recognize a boundaryless career attitude that is primarily *psychological*, Arthur and Rosseau's emphasis (1996) upon careers which unfold beyond a single employment setting has frequently been interpreted as involving interfirm, *physical* employment mobility. As such, a second important boundaryless career attitude is the inclination toward physically crossing organizational boundaries in employment mobility. Someone high in such an organizational mobility attitude would be comfortable with, or even prefer a career that played out across several employers.

1.1.1. Relationship between the protean and boundaryless career models

While some overlap between the two is to be expected, we view protean and boundaryless career attitudes as independent yet related constructs. That is, a person could display protean attitudes and make independent, inner-directed choices, yet not prefer cross-boundary collaboration. In comparison, a person could embrace a boundaryless mindset, yet rely on one organization to develop and foster his or her career. There are myriad possibilities. We believe that being precise about the distinctions between the protean and boundaryless career attitudes and the possible combinations they generate will lead to better theory and research. These concepts are expected to impact one another to certain degrees in an individual's work experience; however, they may impact behavior in very different ways. Therefore, we expect that the protean, boundaryless mindset, and mobility preference attitudes will be distinct yet correlated.

The present series of three studies aimed to explore these expectations by first constructing and initially validating scales to measure protean and boundaryless career attitudes. The goal was to produce scales that researchers could use to test hypotheses about these two career models. The first study primarily involved scale construction. The second study further tested and refined the scales using a new group of participants. The third, and final, study explored the convergent validity of the refined and final scales.

2. Study 1

2.1. Method

2.1.1. Participants

Questionnaires assessing self-directed career management and a values-driven career attitude as well as boundaryless mindset, and mobility preference were distributed to three different samples: 100 undergraduate business students from a private eastern university and a regional public university in the Midwest; 113 part-time MBA students from the same universities as the undergraduate sample; and 85 middle manager and upper level executives from a Fortune 100 manufacturing organization.

2.1.2. Measures

2.1.2.1. Construction of the protean career attitudes scale. Items representing a self-directed career management attitude and a values-driven career attitude were written for this study. These new items were combined with relevant items from an earlier unpublished scale that broadly assessed protean career attitudes (Hall & Briscoe, 2001). Twelve items were generated to measure self-directed career attitudes and 10 items were written to measure values-driven career attitudes. An example of a self-directed item is "Ultimately, I depend upon myself to move my career forward." One values-driven item is, "What I think about what is right in my career is more important to me than what my company thinks." In the end, we settled upon 10 self-directed and eight values-driven items to submit to factor analysis.

Exploratory factor analysis was performed on the scale using principal axis factoring (PCA) and direct oblimin rotation. Three items were removed after an initial reliability analysis. Two items appeared to be converging due to reverse scoring, rather than legitimate relationships. Both items showed low item-total correlations and were deleted from

the subsequent factor along with a third item that also showed low item-total correlation. After final PCA results were examined, reliability analyses were performed on the two scales. No further items were indicated for deletion from either scale. The reliability coefficient was .81 for the self-directed career management scale and .69 for the values-driven scale.

2.1.2.2. Construction of the boundaryless career attitudes scale. Two scales to measure boundaryless career attitudes were also constructed. One scale was designed to measure “boundaryless mindset,” or one’s general attitude to working across organizational boundaries. A second scale was designed to measure “organizational mobility preference,” or the strength of interest in remaining with a single (or multiple) employer(s). These two scales were also included in the final set of copyrighted (Briscoe & Hall, 2005) items that include the two protean career attitude scales discussed above. Items were again generated deductively. Four items related to mobility preference and two related to boundaryless mindset were determined to be ambiguous and were removed prior to factor analysis.

The boundaryless mindset and mobility preference items were also subjected to PCA factor analysis with oblimin rotation. After the PCA results were examined, reliability analyses were conducted on the eight remaining boundaryless mindset and six remaining mobility preference items. The following item was dropped because doing so raised the reliability of the mobility preference score: “I look for employment in other companies to keep things interesting.” The boundaryless mindset score had an α coefficient of .89 and the mobility preference scale had a coefficient α of .75.

2.2. Results

2.2.1. Protean measurement

The initial PCA results indicated five factors with eigenvalues greater than one. However, the scree plot indicated a two-factor solution would be appropriate. In addition, items tended to load together with other items written to measure self-directed and values-driven career attitudes, respectively. Based on the initial PCA results, the remaining items were then subjected to PCA restricted to two factors. When the solution was restricted to two factors, the items clearly loaded on two separate factors represented by self-directed and values-driven career attitude items (see Table 1 for the rotated pattern matrix). Both scales were subjected to reliability analyses. No further items were indicated for deletion at this stage.

2.2.2. Boundaryless measurement

Initial PCA results indicate two factors with eigenvalues greater than one. Items postulated to relate to boundaryless mindset and mobility preference loaded cleanly on two factors. Reliability analyses were then conducted on the two scales. One item was dropped because doing so increased the reliability of the mobility preference score (see Section 2.1). One item showed cross-loading in the initial factor analysis and deletion was considered: “I would feel very lost if I couldn’t work for my current organization.” However, this question was retained because it substantially improved the reliability of the mobility preference scale. Table 2 is the rotated pattern matrix of the final 13 items.

Table 1
Pattern matrix factor loadings for the two-factor solution of the protean career attitudes scale

Items	Factor	
	1	2
I am in charge of my own career. (Self-directed)	.835	
Ultimately, I depend upon myself to move my career forward. (Self-directed)	.797	
I am responsible for my success or failure in my career. (Self-directed)	.569	
Where my career is concerned, I am very much “my own person.” (Self-directed)	.531	
Overall, I have a very independent, self-directed career. (Self-directed)	.513	
In the past I have relied more upon myself than others to find a new job when necessary. (Self-directed)	.414	
Freedom to choose my own career path is one of my most important values. (Self-directed)	.400	
When development opportunities have not been offered by my company, I’ve sought them out on my own. (Self-directed)	.348	
I’ll follow my own guidance if my company asks me to do something that goes against my values. (Values-driven)		.719
In the past I have sided with my own values when the company has asked me to do something I don’t agree with. (Values-driven)	.545	
What I think about what is right in my career is more important to me than what my company thinks. (Values-driven)		.448
It doesn’t matter much to me how other people evaluate the choices I make in my career. (Values-driven)		.388
People have told me that I march to the beat of my own drummer. (Values-driven) [<i>item not retained in final scale</i>]		.374
I navigate my own career, based upon my personal priorities, as opposed to my employer’s priorities. (Values-driven)	.279	.283
What’s most important to me is how I feel about my career success, not how other people feel. (Values-driven)	.226	.265

Note. Italicized values indicate loadings less than .3.

2.2.3. Correlations

Protean career attitude and boundaryless mindset are theoretically related. Therefore, correlation analyses were conducted to assess the relationship between the four subscales. Because the sample was composed of three different groups (undergraduate, MBA, and organizational), mean scores and correlations were also calculated separately by group to determine how the relationships might differ by sample.

Table 3 displays the means, standard deviations, α s, and correlations for values-driven, self-directed, boundaryless mindset, and mobility preference scales for the total sample. As would be expected, significant correlation exists between the two scores representing a protean career attitude; values-driven and self-directed ($r = .664, p < .01$). These two scores in turn showed significant correlation with the boundaryless mindset score (values-driven score $r = .270, p < .01$; self-directed score $r = .372, p < .01$). However, in the combined sample, the two protean career attitude scores showed no significant correlation with mobility preference, and mobility preference and boundaryless mindset actually exhibited a negative correlation ($r = -.117, p < .05$).

Because the three samples represent individuals in varied career stages, the underlying relationships of interest between these variables could occur differently in the different samples. Table 4 displays the means, standard deviations, α s, and correlations for values-

Table 2
Pattern matrix factor loadings for boundaryless career attitudes scale

	Factor	
	1	2
I enjoy working with people outside of my organization. (Boundaryless mindset)	.843	
I enjoy jobs that require me to interact with people in many different organizations. (Boundaryless mindset)	.822	
I enjoy job assignments that require me to work outside of the organization. (Boundaryless mindset)	.766	
I like tasks at work that require me to work beyond my own department. (Boundaryless mindset)	.698	
I would enjoy working on projects with people from across many organizations. (Boundaryless mindset)	.696	
I have sought opportunities in the past that allow me to work outside the organization. (Boundaryless mindset).	.646	
I am energized in new experiences and situations. (Boundaryless mindset)	.634	
I seek job assignments that allow me to learn something new. (Boundaryless mindset)	.563	
If my organization provided lifetime employment, I would never desire to seek work in other organizations (Mobility preference) R		.748
In my ideal career, I would work for only one organization. (Mobility preference) R		.715
I would feel very lost if I couldn't work for my current organization (Mobility preference) R		.660
I like the predictability that comes with working continuously for the same organization. (Mobility preference) R		.505
I prefer to stay in a company I am familiar with rather than look for employment elsewhere. (Mobility preference) R		.436

Note. R, reverse-scored items. Only factor loadings greater than .30 are shown.

Table 3
Total-sample *N*-size, means, standard deviations, and correlations between protean, boundaryless mindset, and mobility preference

Variable	<i>N</i>	Mean	<i>SD</i>	α	1	2	3	4
1. Self-directed	297.00	31.36	4.74	0.81	—			
2. Values driven	297.00	24.74	4.00	0.69	0.58*	—		
3. Boundaryless mindset	297.00	31.04	5.75	0.89	0.38*	0.28*	—	
4. Mobility preference	297.00	21.56	5.37	0.76	0.05	0.05	-0.10	—

Note. * $p < .01$ (2-tailed).

driven, self-directed, boundaryless mindset, and mobility preference scores for each subsample. Table 4 shows that the average mean for the two protean career attitude scores shows little change across the three groups. In turn the boundaryless mindset score steadily increases across the undergraduate, MBA, and executive samples. Yet, while the boundaryless mindset score correlates positively with mobility preference in the MBA sample ($r = .325, p < .01$), it exhibits a negative correlation in the executive population ($r = -.328, p < .01$) and no correlation in the undergraduate sample.

Meanwhile, the protean career attitude scores show no significant correlations with mobility preference in the undergraduate sample, moderate correlations with such a preference in the MBA sample ($r = .201, p < .05$ for both scales), and negative correlations with the same mobility preference in the executive sample (self-directed: $r = -.334, p < .01$; values driven: $r = -.274, p < .05$). However, in looking at the correlations between the protean career attitude scores and the boundaryless mindset score across the three groups,

Table 4

Means, standard deviations, and intercorrelations between protean, boundaryless mindset, and mobility preference attitudes, analyzed by sample

Variable	<i>N</i>	Mean	<i>SD</i>	α	1	2	3	4
<i>Undergraduate sample (n = 97)</i>								
1. Self-directed	97.00	30.46	5.10	.82	—			
2. Values driven	97.00	24.25	3.88	.61	0.59**	—		
3. Boundaryless mindset	97.00	28.14	5.78	.87	0.44**	0.30**	—	
4. Mobility preference	97.00	23.01	4.13	.66	0.07	0.10	0.16	—
<i>MBA sample (n = 115)</i>								
1. Self-directed	115.00	32.03	3.98	.75	—			
2. Values driven	115.00	24.97	4.25	.76	0.58**	—		
3. Boundaryless mindset	115.00	30.77	5.45	.87	0.42**	0.30**	—	
4. Mobility preference	115.00	23.97	4.99	.78	0.25**	0.23*	0.33**	—
<i>Executive sample (n = 85)</i>								
1. Self-directed	85.00	31.48	5.14	.86	—			
2. Values driven	85.00	25.00	3.78	.70	0.59**	—		
3. Boundaryless mindset	85.00	34.71	3.85	.84	0.28**	0.21	—	
4. Mobility preference	85.00	16.64	3.64	.52	-0.23*	-0.15	-0.26*	—

Note. * $p < .05$ (2-tailed). ** $p < .01$ (2-tailed).

significant correlations were found in the undergraduate sample (self-directed: $r = .420$, $p < .01$; values driven: $r = .312$, $p < .01$), the MBA sample (self-directed: $r = .424$, $p < .01$; values driven: $r = .288$, $p < .01$), and the executive sample (self-directed: $r = .282$, $p < .01$; values driven: $r = .249$, $p < .05$).

2.3. Discussion

A significant outcome of this study is that mobility preference did *not* necessarily correlate with either the protean career or the boundaryless mindset. This seems to establish an important finding that being protean or boundaryless in terms of career attitudes is not synonymous with job mobility preference as it has been perceived to be in the literature. A mobility preference did not correlate with the protean or boundaryless career attitude measures at the undergraduate level or with the group of executives studied, yet it did within the MBA sample. It may be that the undergraduate students, relatively inexperienced, perhaps with less career self-efficacy (Kossek, Roberts, & Sandra Demarr, 1998) have less interest in exploring unfamiliar settings. The MBA students in turn (all part-working adults) have had career experience, are demonstrating some degree of career self-management with the pursuit of an MBA while working, and may perceive a need to be mobile in order to achieve their career aspirations.

While the student samples represent a broad cross-sampling of research participants, the same heterogeneity does not exist with the executive sample. The executives work for a single manufacturing company. It is a well-respected and profitable company. It may be that their mobility preference is lower simply because they enjoy the situation they are in or feel settled. It may also be a career stage issue in which people later in their careers are less interested in moving. The data are inconclusive on these points, but compelling.

Is it possible that a higher status associated with their social identity (Ashforth & Mael, 1989) as powerful people in their organizations discourages mobility? Briscoe and DeMuth (2003) have suggested in a qualitative study of executive development and the “new” career that many organizations and executives may both be reluctant to encourage career independence in the interest of conserving the status quo. Alternatively it may be linked less to power or career stage and more to a positive person/organization fit. Does such a pattern exist among executives in other established organizations? These are important questions to explore further.

3. Study 2

A second study was conducted to investigate the reliability and validity of the scales constructed in Study 1. A different group of participants was used to examine the stability of the results obtained with the first group of participants. Gender and age data which were not available for Study 1 were also considered in Study 2.

3.1. Methods

3.1.1. Participants and procedure

Surveys were administered to undergraduate ($n=276$) and part-time MBA/EMBA ($n=298$) students at a large public Midwestern university and a large private Eastern university ($N=574$). The surveys were taken as part of a classroom career assessment process with results released on a voluntary basis. Cases were deleted if the participant did not fill out the entire measure. This resulted in removal of 12 undergraduate cases and one MBA case, leaving 561 participants for this study.

3.1.2. Analyses

Reliability for each scale was calculated and items were reconsidered for deletion based upon this analysis. No items were deleted from the self-directed scale which had a coefficient α of .75. One item (“People have told me that I march to the beat of my own drummer.”) did not perform well in the values-driven scale and was deleted from the final scale which had a reliability of .70. The boundaryless mindset score had a reliability coefficient of .87 and all items from Study 1 were retained. Finally, one item (“I look for employment in other companies to keep things interesting”) did not perform well in the mobility preference scale and was deleted, resulting in an α coefficient of .74. The final items retained for each of the four scales used in this study, as well as testing and scoring instructions appear in Appendix A.1. Correlation coefficients were again calculated between the four scores for the total, undergraduate, MBA, and EMBA samples.

The refined scales were subjected to confirmatory factor analysis (CFA) using LISREL 8.54 with the maximum likelihood method of analysis. Items were specified to load only on the factor they were developed to measure (self-directed, values-driven, boundaryless mindset, and mobility preference, as shown in Tables 4 and 6). In CFA it is necessary to set scale by fixing certain paths to a specified number. Scale was set with the items showing the highest item-total correlation in the reliability analysis for that scale. The reliability was used to calculate the values to fix the paths from the chosen item to the corresponding latent factor. When scale is set in this manner, it is also necessary to set the error term of the latent factor using the reliability of the scale and variance of the chosen item.

Table 5

Total-sample *N*-size, means, standard deviations, and correlations between protean, boundaryless mindset, and mobility preference attitudes

Variable	<i>N</i>	Mean	<i>SD</i>	α	1	2	3	4	5	6
1. Age	385.00	25.38	9.26		—					
2. Gender (224 male, 179 female)	403.00				−0.17**	—				
3. Self-directed	561.00	31.76	4.21	0.75	0.13*	0.01	—			
4. Values driven	561.00	21.66	3.55	0.70	0.16**	−0.02	0.59**	—		
5. Boundaryless mindset	561.00	30.85	5.26	0.87	0.12*	0.09	0.38**	0.31**	—	
6. Mobility preference	561.00	14.37	3.07	0.74	0.12*	−0.08	0.21**	0.11**	0.20**	—

Note. * $p < .05$ (2-tailed). ** $p < .01$ (2-tailed).

Table 6

Means, standard deviations, and intercorrelations between protean, boundaryless mindset, and mobility preference attitudes, analyzed by sample

Variable	<i>N</i>	Mean	<i>SD</i>	α	1	2	3	4	5	6
<i>Undergraduate sample (n = 264)</i>										
1. Age	196.00	18.23	0.64		—					
2. Gender (111 male, 114 female)	225.00				−0.16*	—				
3. Self-directed	264.00	31.40	4.21	.76	0.04	0.06	—			
4. Values driven	264.00	21.16	3.43	.68	−0.01	−0.07	0.61**	—		
5. Boundaryless mindset	264.00	29.83	5.12	.86	−0.02	0.18*	0.48*	0.32*	—	
6. Mobility preference	264.00	14.04	2.76	.70	0.02	−0.07	0.19*	0.07	0.18*	—
<i>MBA sample (n = 233)</i>										
1. Age	132.00	30.37	7.55		—					
2. Gender (82 male, 51 female)	133.00				−0.11	—				
3. Self-directed	233.00	32.39	4.20	.75	−0.01	−0.03	—			
4. Values driven	233.00	22.03	3.63	.71	0.03	0.07	0.59*	—		
5. Boundaryless mindset	233.00	31.34	5.40	.87	−0.11	0.01	0.21*	0.22*	—	
6. Mobility preference	233.00	14.58	3.46	.79	0.01	−0.07	0.21*	0.14*	0.17*	—
<i>EMBA sample (n = 64)</i>										
1. Age	57.00	38.39	6.55		—					
2. Gender (31 male, 14 female)	45.00				−0.00	—				
3. Self-directed	64.00	32.05	3.92	.75	0.12	0.07	—			
4. Values driven	64.00	22.44	3.54	.70	0.05	0.21	0.43*	—		
5. Boundaryless mindset	64.00	33.28	4.21	.86	−0.11	0.13	0.58*	0.45*	—	
6. Mobility preference	64.00	14.94	2.61	.63	−0.08	0.03	0.22	0.04	0.29*	—

Note. * $p < .05$ (2-tailed). ** $p < .01$ (2-tailed).

Overall model fit was assessed with the Root Mean Square Error of Approximation (RMSEA), Bentler's (1990) Comparative Fit Index (CFI), Bollen's (1989) Incremental Fit Index (IFI), and the Bentler and Bonnett (1980) Normed Fit Index (NFI). Because χ^2 is fairly sensitive to sample size, and because the sample size was large for this study, χ^2 was not examined as a fit index. The RMSEA measures how accurately a model approximates observed correlations. RMSEA values less than .05 indicate good fit, while values between .08 and .10 indicate moderate, but acceptable, fit (Byrne, 1998). The CFI, IFI, and the NFI are all incremental fit indices that evaluate a model's fit over the null, or independence, model. The CFI indicates the proportion in improvement of the overall fit of a hypothesized model relative to the null. The IFI is less variable in small samples and is more

consistent across estimators than the NFI (Hoyle, 1995). For the CFI, NFI, and IFI, values range from 0 to 1. The closer the value is to 1, the better the model fits the data (Raykov & Marcoulides, 2000). According to Hoyle (1995), values above .90 are judged as indicative of a good model fit.

3.2. Results

3.2.1. Correlations

Table 5 displays the means, standard deviations, α s, and correlations for values-driven, self-directed, boundaryless mindset, and mobility preference scores for the total sample. Table 6 displays the means, standard deviations, α s, and correlations for values-driven, self-directed, boundaryless mindset, and mobility preference scores for each subsample.

As can be seen in Table 6, the results for the overall Study 2 sample indicate relatively stable scores for each of the four scales. This is in contrast to Study 1, in which boundaryless mindset increased from the Undergraduate to Executive samples, and in which mobility preference increased from the Undergraduate to MBA samples, but then decreased for the Executive sample.

Similar to the total sample in Study 1, the results in Study 2 indicate a significant correlation between the two protean scores, self-directed and values-driven, with boundaryless mindset and mobility preference, and with the two protean scores and boundaryless mindset. But unlike with the total sample in Study 1, the collective results in Study 2 also showed a modest, significant correlation between self-directed, values-driven, and mobility preference ($r = .209$ and $.114$, respectively, $p < .01$). Boundaryless mindset also showed a significant correlation with mobility preference ($r = .198$, $p < .01$) for the collective Study 2 data, in contrast to Study 1.

In looking at the three subsamples, the two protean scores demonstrate strong correlation with one another across the three groups. Interestingly, while correlation between the two protean scores and the boundaryless mindset scores are significant in each subsample, it is notably higher in the Undergraduate and EMBA samples than with the MBA sample. Also, while significant relationships between boundaryless mindset and mobility preference exist in each sample, the correlation is higher in the EMBA than in the other two samples.

Age and gender were explored in relation to each of the four scores. No significant relationship between gender and the constructs under interest was evident, but a slight and significant positive relationship between age and *each* of the four scores was demonstrated in the collective Study 2 sample.

3.2.2. Confirmatory factor analysis

The CFA model ran in nine iterations. As expected, all of the estimated item paths were found to be significant at $p < .01$. This suggests that all of the items loaded appropriately on the expected factors. In addition, all of the paths between the latent factors were significant at $p < .01$. This indicates that all of the subscale factors show significant relationships. The RMSEA indicates moderate fit (RMSEA = .08). However, the other fit indices suggest good fit of the model to the data (CFI = .91; IFI = .91; NFI = .88). Of note are two large modification indices suggesting a positive cross loading of protean item 4 onto Self-Directed and a negative cross loading of protean item 12 onto Self-Directed.

3.3. Discussion

The results from Study 2 provide better support for the expected measurement properties of the developed measures, with the expected positive correlation between all four constructs evident from both the correlation analyses and the CFA. Although the factors were significantly correlated in the CFA, a few items showed cross loadings with other factors. This also supports our assertion that the factors are separate but related constructs. The fact that all of the paths between the items and the corresponding factors were significant is evidence that the items are appropriately measuring the hypothesized factors. Thus it appears that the negative correlation between boundaryless mindset and mobility preference in Study 1 was likely an anomaly related to the executive sample. While the EMBA sample in Study 2 is generally comprised of longer-tenured, higher ranking employees than the regular MBA sample, it is more diverse and likely younger than the Executive sample in Study 1. In addition, the executives from Study 1 were employed within the same organization. Therefore, differences in correlation could also be a result of espousing a particular organizational culture.

The fact that undergraduates and EMBA students' protean attitudes showed a stronger correlation with boundaryless mindset than in the MBA sample is interesting, with no obvious explanation. Could it be that for different reasons, undergraduates and EMBA students perceive a different opportunity structure than MBA students? Typically, the MBA students are part of an ongoing course of study, which may tie them to their employer which frequently sponsors their education. EMBA students in this sample are more likely in a time bounded program. Perhaps they are more actively considering future options, and how their education is enhancing it. In the case of undergraduates, perhaps they are mulling their options in a vocational "vacuum" of study before more "real-world" experience tempers their career imaginations.

4. Study 3

Study 3 explored the validity of the newly developed scales by looking primarily at measures which would be expected to demonstrate convergent validity. Proactive personality has been shown to correlate with independent career management and career success (Seibert, Crant, & Kraimer, 1999). For this reason it was investigated in this validation study to see if it would relate to self-directed career management.

No existing measure was identified to adequately provide validation for the protean values-driven scale. However, a construct of career authenticity was explored with the suggestion that a sense of authenticity in a role (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997) would result in higher levels of motivation. We inferred that such authenticity could be expected to relate to the career role and that it would relate strongly to the values-driven attitude.

Openness to experience (Costa & McCrae, 2003) is a long-established construct of the "Big 5" personality model related to one's posture toward ambiguous situations and willingness to try new things. We expect openness to experience to be closely tied to the boundaryless mindset construct developed here.

An emerging understanding is building that one's inclination toward goal setting can be governed by a "mastery" and/or "performance" orientation (Button, Mathieu, & Zajac, 1996). The mastery orientation is defined as emphasizing learning and embracing

challenge, whereas a performance orientation is thought to prioritize goals in which success is visible and assured. Because the protean and boundaryless careers, and their related attitudes explored here imply a career journey into potentially new and unknown territory for the individual, we expect the mastery learning orientation to relate to each of the protean and boundaryless career attitudes.

Finally, we consider the number of years working full-time, number of employers, and number of voluntary job changes for exploratory purposes to see how they related to the protean and boundaryless scales.

4.1. *Methods*

4.1.1. *Participants and procedure*

One undergraduate student sample from a large private Eastern University ($N = 228$) and several samples of part-time working MBA students at the same university and a regional public Midwestern University were utilized. In each case, the data were gathered as part of a self-assessment process with the students. All student groups were assessed in the primary measures of interest developed in this article. However, different student groups completed different additional measures from one another and so all measures in this study were not completed by all participants.

Thirty-four cases were removed because they did not complete the protean and boundaryless scales. Eleven additional cases were removed because they filled out protean and boundaryless measures but none of the validation measures of interest (resulting $N = 493$) Random missing scores were replaced with the respective scale means.

4.1.2. *Measures*

Proactive personality was measured using a 10-item scale (Seibert et al., 1999) that is a shortened version of an original 17-item proactive personality scale (Bateman & Crant, 1993). A measure of “career authenticity” was developed specifically for this study. The three-item scale was based upon a five-item psychological authenticity scale (Sheldon et al., 1997) and participants were asked to rate their “career in general” in terms of the following: “I experience this aspect of myself as an authentic part of who I am”; “This aspect of myself is meaningful and valuable to me”; and “I have freely chosen this way of being.” Because undergraduate students may not have had enough career experience to form a sense of career authenticity, they were also given a “student authenticity” scale which used the same items in relation to their “role as a student.” In the current study the career authenticity scale scores demonstrated an α reliability of .801 and the student authenticity scores had a reliability of .767. The 12-item openness to experience scale (Costa & McCrae, 2003) was used with the permission of the publisher. A mastery goal orientation was measured using an eight-item scale (Button et al., 1996). The eight-item performance goal orientation scale was also included in the study for exploratory purposes.

4.2. *Results*

The results are displayed in Table 7. As expected, proactive personality correlated with self-directed career management ($r = .40, p < .01$) but also values-driven ($r = .28,$

Table 7

Means, standard deviations, and intercorrelations between protean scores, boundaryless scores, mobility preference scores, and validation measures

	<i>N</i>	Mean	<i>SD</i>	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Self-directed	493	31.54	4.31	.761	—														
2. Values directed	493	21.57	3.55	.684	.573**	—													
3. Boundaryless mindset	490	30.65	5.31	.867	.406**	.287**	—												
4. Organizational mobility	490	14.30	3.20	.764	.251**	.128**	.269**	—											
5. Proactive personality	482	37.93	5.02	.826	.402**	.279**	.405**	.111*	—										
6. Student authenticity	228	12.65	1.78	.767	.290**	.188**	.197**	.081	.189**	—									
7. Career authenticity	422	12.06	2.08	.801	.327**	.112*	.302**	.136**	.285**	.573**	—								
8. Openness to experience	385	30.42	6.28	.730	.213**	.179**	.315**	.163**	.240**	.202**	.148**	—							
9. Performance learning goal	456	30.91	4.49	.792	-.148**	-.163**	-.117*	-.301**	-.004	.111	-.003	-.110*	—						
10. Mastery learning goal	456	33.23	4.35	.856	.425**	.293**	.547**	.217**	.505**	.218**	.259**	.328**	-.220**	—					
11. # Job Changes per years working full-time	241	.502	.889	—	.064	-.092	-.023	-.053	.030	(a)	-.126	-.004	.052	-.039	—				
12. # Employers per years working full-time	222	.829	1.57	—	-.076	-.146*	-.073	-.049	-.080	(a)	-.139	-.042	.170*	-.079	.372**	—			
13. Age	435	25.12	8.36	—	.102*	.184**	.082	.078	.015	.027	-.051	-.069	-.289**	.297**	-.138*	-.309**	—		
14. Gender	466	1.44	.497	—	.009	-.051	.069	-.077	-.014	-.014	.067	.083	.174**	.009	-.111	.056	-.150**	—	

Note. (a) Cannot be computed because at least one of the variables is constant.

* Correlation is significant at the 0.05 level.

** Correlation is significant at the 0.01 level.

$p < .01$), boundaryless mindset ($r = .41, p < .01$), and mobility preference ($r = .11, p < .05$). Career authenticity correlated with the values-driven measure as expected ($r = .11, p < .05$), but even more so with the self-directed ($r = .33, p < .01$), boundaryless mindset ($r = .30, p < .01$), and mobility preference ($r = .14, p < .01$) scales, which was not anticipated. The student authenticity scores correlated with values-driven ($r = .19, p < .01$), self-directed ($r = .29, p < .01$) and boundaryless mindset ($r = .20, p < .01$) scales. Openness to experience did manifest itself as anticipated, demonstrating positive correlation with boundaryless mindset ($r = .32, p < .01$). In addition it correlated significantly with self-directed ($r = .21, p < .01$), values-driven ($r = .18, p < .01$), and organizational mobility ($r = .16, p < .01$). Mastery goal orientation related positively to all four of the newly developed measures (for self-directed $r = .43, p < .01$; for values-driven, $r = .20, p < .01$; for boundaryless mindset $r = .547, p < .01$; and, for mobility preference $r = .22, p < .01$). On the other hand, performance goal orientation was negatively correlated with each of the new measures (for self-directed $r = -.15, p < .01$; for values-driven, $r = -.16, p < .01$; for boundaryless mindset $r = -.12, p < .05$; and, for mobility preference $r = -.30, p < .01$).

The proportion of job changes and employers per years in the (full-time) work force was examined for exploratory purposes and no significant relationship was demonstrated except a negative relationship between values-driven and employers per year of experience ($r = -.15, p < .05$).

4.3. Discussion

Study 3 demonstrates that the newly developed protean and boundaryless measures are in fact connected to existing measures in ways they begin to establish a nomological network. Of interest is the fact that the proactive personality correlates highly with all four measures. This seems to validate the idea that those with protean and boundaryless career attitudes are in fact agentic in their career posture, not willing to wait for events to control them. In a similar vein, the strong positive relationship between the mastery goal orientation, openness to experience and each of the new career attitude measures indicates that those demonstrating these attitudes are interested in pursuing goals that are not necessarily associated with certain outcomes and are may be more effective at facing ambiguous career situations. The fact that each of the new measures is negatively correlated with performance orientation further suggests that those demonstrating the career attitudes measured here are interested in defining and even discovering career success on their own terms.

It is interesting that career and student authenticity correlate positively across nearly all of the new measures. It appears as though “being oneself” relates to the taking of protean and boundaryless attitudes that allow one to define and find their own career path. Why the authenticity measures are not more highly correlated with the values-driven measure as expected is not clear. Based upon the reliability of the values-driven measure in all three studies, it may be that a more robust measure would result in a higher correlation with authenticity. Or, it may simply be that feeling authentic is more a driver of “action-related” attitudes (self-directed and boundaryless mindset) than it is of personal identity and standards (values-driven in this case). That is, maybe authenticity is most realized through action and not reflection.

Finally, the virtual lack of a relationship between job change and employers per year of employment may be the most interesting finding of all. As discussed earlier in this article, several researchers have used mobility as a proxy for the protean and boundaryless careers. But, while a portrait of the new career actor as an open minded, striving, proactive person is being created in this study, this does not necessarily mean that this same person is one constantly on the move. Note that they are not more stable than normal either in terms of employers and job change. But the ramifications of this, given current assumptions of the correlation between mobility and the new career, are noteworthy.

This implies that a person may be very modern and proactive in their career without necessarily being markedly active in terms of mobility. This explains in part studies by others (Briscoe & DeMuth, 2003; Gratton, Lynda, Zaleska, Krystyna Joanna, & de Menezes, 2002) which have failed to find a consistent connection between career development and mobility. For employers in particular, it suggests that protean and boundaryless career attitudes are not something to fear.

5. Conclusion

The studies reported herein demonstrate that the protean and boundaryless career attitudes scales measure distinct yet related constructs. And while certain relationships might be expected, they do not demonstrate themselves as a matter of course. For example, the executive sample in Study 1 demonstrated relatively higher protean attitudes and a boundaryless mindset, but a lower mobility preference. Study 3 indicates no relationship between actual mobility and any of the protean and boundaryless attitudes developed in this article. This underscores the point that mobility should not be used as the primary proxy for either boundaryless or protean career attitudes or outcomes.

The fact that the constructs under study seem to vary across career stage and context seems to imply the possibility that these are indeed attitudes and not underlying personality traits or related individual differences. This suggests further avenues of research to investigate whether protean and boundaryless perspectives, like other attitudes (such as career self-efficacy, Betz, 1992), can be effectively taught and developed. Furthermore, how are these attitudes influenced by aging, modernization, social identity, organizational culture, national culture, educational level, etc.? While we have begun to establish a nomological network for the protean and boundaryless career attitudes, further exploration of attitude and personality measures should take place. It also remains to be explored whether protean and boundaryless orientations can be represented by deeper level personality dimensions in addition to attitudinal indicators.

An obvious limitation of this research is that it measured career *attitudes*, not vocational *behavior*. Criterion-related validity should be investigated to better understand the practical results of protean and boundaryless career attitudes. What are the outcomes of being protean or boundaryless? Can these new constructs be used to predict and measure whether the rhetoric matches reality in terms of the positive outcomes postulated regarding taking protean and boundaryless attitudes toward the career? Such questions are crucial to the academic discourse on the career and to the potential for such discourse to make meaningful and practical recommendations.

Appendix A

A.1. Protean Career Attitudes Scale (Copyright Briscoe & Hall, 2005)

Please indicate the extent to which the following statements are true for you, using the following response scale. Please circle or place an “X” over the appropriate response

To little or no extent	To a limited extent	To some extent	To a considerable extent	To a great extent
1	2	3	4	5

[Scale above was listed under each item from Protean Career Attitudes Scale and Boundaryless Career Attitudes Scale]

1. When development opportunities have not been offered by my company, I’ve sought them out on my own.
2. I am responsible for my success or failure in my career.
3. Overall, I have a very independent, self-directed career.
4. Freedom to choose my own career path is one of my most important values.
5. I am in charge of my own career.
6. Ultimately, I depend upon myself to move my career forward.
7. Where my career is concerned, I am very much “my own person.”
8. In the past I have relied more on myself than others to find a new job when necessary.
9. I navigate my own career, based on my personal priorities, as opposed to my employer’s priorities.
10. It doesn’t matter much to me how other people evaluate the choices I make in my career.
11. What’s most important to me is how I feel about my career success, not how other people feel about it.
12. I’ll follow my own conscience if my company asks me to do something that goes against my values.
13. What I think about what is right in my career is more important to me than what my company thinks.
14. In the past I have sided with my own values when the company has asked me to do something I don’t agree with.

Scoring: Self-Directed Career Management Scale = items 1–8. Values-Driven Scale = items 9–14.

A.2. Boundaryless Career Attitudes Scale (Copyright Briscoe & Hall, 2005)

Please indicate the extent to which the following statements are true for you, using the following response scale. Please circle or place an “X” over the appropriate response

To little or no extent	To a limited extent	To some extent	To a considerable extent	To a great extent
1	2	3	4	5

[Scale above was listed under each item from Protean Career Attitudes Scale and Boundaryless Career Attitudes Scale]

1. I seek job assignments that allow me to learn something new.
2. I would enjoy working on projects with people across many organizations.
3. I enjoy job assignments that require me to work outside of the organization.
4. I like tasks at work that require me to work beyond my own department.
5. I enjoy working with people outside of my organization.
6. I enjoy jobs that require me to interact with people in many different organizations.
7. I have sought opportunities in the past that allow me to work outside the organization.
8. I am energized in new experiences and situations.
9. I like the predictability that comes with working continuously for the same organization.
10. I would feel very lost if I couldn't work for my current organization.
11. I prefer to stay in a company I am familiar with rather than look for employment elsewhere.
12. If my organization provided lifetime employment, I would never desire to seek work in other organizations.
13. If my ideal career I would work for only one organization.

Scoring: Boundaryless Mindset Scale = items 1–8. Organizational Mobility Preference Scale = items 9–13 (Reverse score items 9–13).

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