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Using a 1-year longitudinal-panel design, 32 American, female expatriate spouses who relocated to Ankara, Turkey, completed measures of global functioning and were interviewed at just-arrived, 3-, 6-, 9-, and 12-month stages. Because of the mixed methods approach of this project, results of the Naturalistic Inquiry are reported in a companion manuscript (Bikos et al., 2007, this issue). Differences in the importance and expectation of life roles (i.e., occupational, parent, marital, homecare) were found. Quantitative results indicated no differences in life roles importance, alcohol use, marital satisfaction, or mental health functioning as a function of time-in-country. Analyses do not support the culture shock/*U*-curve model as a predictable pattern of adaptation. The authors conclude that time-in-country is only one of a myriad of variables that could be used to predict adaptation. Future expatriate research should use models that offer greater complexity.

Keywords: *culture shock; expatriate adaptation; expatriate spouse; life role salience; Turkey*

In this era of rapid globalization, much attention has been given to predicting the success of the expatriate employee. The risks of damage to national relationships, business dealings, and the employee and his or her family when expatriate assignments fail are well documented (e.g., Black & Stephens, 1989; Garonzik, Brockner, & Siegel, 2000). In recent years, attention has also included the expatriate spouse. The importance of the expatriate spouse's role on the employee's intent to stay on the assignment has been clearly established (Black & Stephens, 1989; Caligiuri, Hyland, Joshi, & Bross, 1998; Fukuda & Chu, 1994). In fact, in a meta-analytic review of 12 predictors of adjustment for the expatriate employee, the spouse's adjustment was the most salient (Bhaskar-Shrinivas, Harrison, Shaffer, & Luk, 2005).

The primary purpose of our project was to further explore the experience of the female expatriate spouse in light of life role salience and culture shock models. In addition, from the perspective of Naturalistic Inquiry, we sought to create thick, rich descriptions of the expatriate spouse phenomena during the first year of adaptation. Because of the distinctiveness of the (a) scientific paradigm and philosophies of science, (b) methods used to collect and analyze the data, and (c) type and amount of data created, we have reported the results of our study in two manuscripts. This article reports on the quantitative, repeated measures design. However, in the Discussion section, when integration of the results becomes important in this mixed methods approach, references are made to the companion manuscript (Bikos et al., 2007, this issue).

Life Role Salience Theory

Life Role Salience Theory has its roots in Super's Life-Span, Life Space approach (Super, 1980, 1990; Super, Savickas, & Super, 1996). Specifically, Super theorized that one's life career is composed of a series or combination of roles occupied over the life span. Central to this theory is a contextual perspective that highlights the constellation of all life roles. The constructs of *role salience* and *life structure* provide a framework for understanding how

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individuals (a) negotiate and balance life roles and (b) use life structure to fulfill personal values (Savickas, 1997). In a discussion about future directions of Super's contributions, Herr (1997) spoke of the need for further study of life role salience in the context of global economic changes and ideas regarding gender and cultural differences.

The life role salience construct has been overlooked in the expatriate and/or sojourning literature. One exception is a gender comparison study that evaluated the willingness of employees to take international assignments. The researchers identified that the females' willingness to accept the assignment was better predicted when variables assessing life role salience were included in the regression equation (Van Der Velde, Bossink, & Jansen, 2005). Consequently, in our research, we felt that understanding the relative importance of life roles would be critical to understanding the adaptation process of the expatriate spouse. Previous research on role salience has often investigated its relation to role strain and the balancing of multiple roles (e.g., Perrone & Civiletto, 2004). We were concerned about a different issue. As female spouses follow their husbands overseas they may experience role loss as they (potentially) leave career-defining jobs and turn housework and parenting responsibilities over to inexpensive help. We wondered if the value of and commitment to life roles would change over time and would differ from each other. For example, would occupational value and/or commitment decrease during the first year? Second, would the role's value be higher than its commitment for roles requiring less practical investment (i.e., occupational, parental)? Finally, would there be a difference in role importance among the four, tested roles?

Culture Shock/U-Curve Model

The *U*-curve or culture shock model has dominated the sojourning literature, self-help materials, and predeparture culture training (e.g., INSERV, n.d.; Tucker International, n.d.) for more than 30 years (see Black & Mendenhall, 1991, for a review). Lysgaard (1955) was the first to theorize a *U*-curve model by predicting that adjustment seems easy and successful in the beginning, is followed by a stage of crisis in which individuals feel lonely and depressed, and then a period where individuals begin to feel better and more integrated. Similarly, Oberg (1954) expressed that individuals will have a difficult phase after the "honeymoon" stage, which may last anywhere from a few days to 6 months. After this difficulty, their adjustment may become more integrated and successful.

More recently, *culture shock* has been defined as a series of phases that include a honeymoon or tourist-style period, a crisis phase, a period of adjustment and reorientation, and finally an adaptation, resolution, or acculturation phase (Copeland & Griggs, 1985; Winkelman, 1994). In these theoretical articulations, culture shock is said to be caused by stress reactions, cognitive fatigue, role shock, and personal shock. Although the culture shock proponents indicate that the phenomenon is predictable, patterned, and manageable they also stated that the phases can repeat themselves and take different amounts of time for each person (Copeland & Griggs, 1985). Hereafter, the culture shock (Copeland & Griggs, 1985; Winkelman, 1994) and *U*-curve (Lysgaard, 1955; Oberg, 1954) approaches to understanding expatriation will be jointly referred to as the *U-curve model* and no citations will follow. Results of a comprehensive review and analysis of 18 tests of the *U*-curve theory published from 1955 to 1980 indicated that 67% supported the *U*-curve model (Black & Mendenhall, 1991). Unfortunately, of those that proffered support, the majority employed no statistical tests of the data, were cross-sectional in design, lacked methodological rigor, and used university students as the samples.

More recently, three quantitatively based studies have specifically evaluated the *U*-curve model. Using a cross-sectional design, data regarding psychological adjustment was collected from 155 foreign students attending a university in New Zealand (Ward & Searle, 1991). Analyses indicated no significant differences as a function of time (i.e., five points in the first 2 years of the sojourn); however, the authors speculated that psychological adjustment may follow a curvilinear path over time and recommended a longitudinal approach to studying the issue. Again in New Zealand, a second study specifically tested the *U*-curve model in a 1-year longitudinal study including 35 Japanese students (Ward, Okura, Kennedy, & Kojima, 1998). Results suggested the greatest amount of social difficulty occurred at entry; however, no significant differences were found across the 4-, 6-, and 12-month time periods. Similarly, the highest level of depression was reported at the initial testing; however, no further significant differences were found in subsequent testing. Finally, a meta-analysis found a nonlinear relationship with cultural adjustment. The best-fitting model roughly assumed the predicted *U*-shape but was described by the authors as a "sideways 'S'" (Bhaskar-Shrinivas et al., 2005, p. 273). In this curve, the honeymoon period appeared to end after 12 months on assignment, and the curve bottomed out at about 3 years. Thus, we concur with Mohr and Klein (2004) who argued that debates and empirical tests of the *U*-curve model remain inconclusive.

Study Goals and Hypotheses

The purpose of our project was to provide a greater understanding of the accompanying wife of an expatriating husband. Using quantitative and qualitative (Naturalistic Inquiry) methods, we used a longitudinal, repeated measures design to follow a group of 32 women through their first year of expatriation to Turkey. Within a quantitative, repeated measures paradigm we first looked at life role salience. We hypothesized that the perceived value of and commitment to life roles (i.e., occupational, parental, marital, homecare) would differ from each other and would differ as a function of time-in-country. Second, in a manner consistent with the *U*-curve model, we hypothesized that various indicators of global psychological functioning (i.e., alcohol use, marital satisfaction, mental health functioning) would change as a function of time-in-country. For a report of the Naturalistic Inquiry, see Bikos et al. (2007, this issue).

Method

Participants

Recruitment. With the goal of having 30 women complete the 1-year, longitudinal study, all known women who were moving to Ankara, Turkey, in conjunction with their husband's occupation were recruited for participation. Because of regulations protecting the release of information from the U.S. military and U.S. Foreign Service to international posts, it was impossible to obtain names or information of those employees who were identified for relocation to Turkey or who had recently arrived in Turkey. Rather, at the suggestion of U.S. government branches, recruitment was completed through networking, advertising, and snowballing techniques. Specifically, the first author recruited volunteer participants for the research project by speaking at numerous meetings of expatriate women's groups, by writing articles for the *Ankara Scene* (a weekly newsletter published by the U.S. Embassy and distributed to official U.S. government personnel), and by staffing recruitment booths at informational welcome fairs and special events sponsored by the U.S. Embassy. In addition, the director of the Health Unit at the U.S. Embassy presented information about the project during Newcomers Orientation meetings. All members of the research team referred new arrivals to the first author for recruitment.

When identified in advance of their arrival to Ankara, the first author sent a personal e-mail that described the project and invited participation. When potential participants arrived in country, the first author telephoned with the

same information. Of the 36 women recruited for the project, two declined participation, and two were determined ineligible because they did not meet the inclusion criteria for the study.

Data collection. Within 2 weeks of arriving in-country and at each of the 3-month intervals (i.e., 3-, 6-, 9-, 12-months), the women completed a packet of paper-and-pencil measures and then, for the Naturalistic Inquiry (reported in Bikos et al., 2007, this issue) participated in a series of 30- to 60-minute interviews.

Demographic characteristics. The participants in the project were female expatriate spouses who moved to Ankara, Turkey, because of their husband's work assignments. There were two primary inclusion criteria: (a) the women must have held a U.S. passport and (b) the women could be employed; however, their husband's position must have been the primary reason they moved to Turkey. Two women were excluded because they held tandem placements (i.e., they were jointly appointed) in their sponsoring organization.

The ages of the 32 women who were included in the project ranged between 30 and 50 years (M = 38.63, SD = 2.65). Regarding ethnicity, 82% of the women self-identified as European American, 6% as Hispanic, 3% as African American, and 3% as Asian American. Regarding highest level of education, 9% indicated that they completed high school, 25% had some college, 44% had completed a bachelor's degree, 3% had some graduate education, and 13% had completed a master's level degree. Nearly all of the women (94%) had children. Of those with children, 84% of the women had children who accompanied them to Turkey; 38% of the women had children who remained in the United States. In some cases the women's children were located in Turkey and in the United States. In the year prior to moving to Turkey 47% were employed.

Regarding classification of the husband's position, 41% of the men were in Turkey because of assignments with the U.S. military, 25% worked for the U.S. Foreign Service (i.e., U.S. Embassy). Thus, 66% were in Turkey because of the husband's work with the U.S. government. Thirteen percent of the husbands worked for large corporations, and 13% were in Turkey for human rights, humanitarian, or religious work. Eight percent did not indicate the nature of the husband's assignment. The anticipated length of the assignment in Turkey ranged from 1.5 to 4 years (M = 2.65, SD = .74); 75% were planning for at least one home leave at some point during their assignment.

Regarding international exposure and experience, one woman was a dual-national, holding citizenship rights in the United States and another country. Six percent of the women were married to men who were dual-nationals.

Twenty-five percent had lived abroad as children. Sixty-three percent of the women had previous adult experience in international assignments. For three of the women (9%), English was not their first language. Sixteen of the women (50%) spoke a second language. Nearly one third (28%) of the women were provided culture-specific training by their company prior to moving to Turkey; the length of this training ranged between 5 and 120 hr.

Procedures

The packet of measures at the just-arrived stage contained a letter describing the project in detail, two copies of the informed consent form (one for the participant, one for the principal investigator), and all of the instruments (except the exit questionnaire) described in the Instruments section below. During the middle three intervals the packet of measures contained only the four measures of global functioning. At the 12-month stage, a thank-you letter, a second copy of the informed consent (i.e., highlighting the plans for utilizing the interview transcripts), and an exit questionnaire were included with the four measures of global functioning. Women had the option of completing the packet of measures via e-mail or paper and pencil. Except for format (to ease computer completion), the packets were identical. When completed via paper and pencil, a member of the research team delivered and collected the measures prior to the in-person interview. When completed via the computer, the packet was sent as an e-mail attachment. For privacy, participants were cautioned about the risks associated with the e-mail option and advised to delete the copy of measures they had saved to their computer. In addition, instructions were provided for completing, saving, and returning the attachment via the reply function of the computer. To mitigate the positive or negative influence of the naturalistic interviews on the more objective paper-and-pencil measures (i.e., a woman who was feeling unhappy might feel better after telling her stories to the clinically trained interviewer), we required that the measures be completed prior to the in-person interview.

Instruments

Demographic questionnaire. Demographic information about the participants was obtained using a survey developed by the authors. The traditional demographic information that was sought included age, ethnic and/or racial identity, nationality, presence of children, and education level. Information was also sought about a variety of factors that might influence expatriate adaptation including previous adulthood and childhood expatriation experience,

languages spoken, ability to speak and read the language of the host country, classification of husband's employment, current occupational status, occupational status prior to expatriation, volunteer involvement, description of housing (i.e., dispersed vs. in a government- or corporate-sponsored compound), religious preference, plans to visit home, and presence and type of predeparture culture training.

Assessment of the salience of life roles. The Life Roles Salience Scales (LRSS; Amatea, Cross, Clark, & Bobby, 1986) were used to assess the women's personal expectations concerning occupational, marital, parental, and homecare roles. In the LRSS, these four major life roles are assessed in terms of two dimensions (role value, role commitment) or a combined dimension of role importance. The first is role value dimension, indexed by means of statements in which the individual agrees that the role is an important means of self-definition and/or personal satisfaction. The second is role commitment level. This is assessed by statements describing the extent to which the person demonstrates a willingness to commit personal resources to ensure success in, or to develop, that role. In addition, high correlations between value and commitment scales support their combination to provide an overall role importance scale (Campbell & Campbell, 1995). With five items on each scale, this results in a total of 40 items on eight separate scales. Participants rate themselves on a Likert-type attitude scale with five possible response choices that range from 1 (*disagree*) to 5 (*agree*).

The validity and reliability of the LRSS was established in a series of studies reported in Amatea et al. (1986). In these studies, versions of the LRSS were administered to 916 participants. Results of those studies led to the creation of an instrument that had an eight-factor solution with eigenvalues of greater than 1.00, which accounted for 61% of the total score variance and 75% of the common factor variance. Coefficient alpha estimates of internal consistency were high and ranged from .79 (homecare role commitment scale) to .94 (marital role value scale). Subsequent research has supported the construct validity of the LRSS in that (a) differences in parental and marital roles are found as a function of marital and parental status and (b) positive, significant correlations exist between the LRSS and a measure of purpose in life (McCutcheon, 1998).

In our study, involving five administrations of the eight LRSS scales, the 40 coefficient alphas (8 subscales × 5 administrations) ranged from .20 (parental role commitment scale at 6-months and homecare role value at 9-months) to .93 (marital role value at just arrived) with a mean of .68 (SD = .19). The parental role commitment scale seemed to have lower reliabilities than the rest,

averaging .38 among five administrations. The marital role value scale had the highest reliabilities, averaging .90 across the five administrations.

Assessment of alcohol use. Utilizing recommendations from previous studies where alcohol was a construct, the following procedures were used to obtain a reliable and valid assessment of alcohol consumption (Conrod, Stewart, & Pihl, 1997; Stewart, Peterson, & Pihl, 1995). First, confidentiality was assured, and the women were asked open-ended questions (Sobell, Sobell, Leo, & Cancilla, 1998). Second, the women were asked to identify in the past month, on average, how many times per week they consumed alcohol. If they did not consume alcohol on a weekly basis, they were instructed to give a monthly or yearly estimate. A second question asked the women to identify, in the past month, on average, how much alcohol they consumed at each drinking occasion. An *alcoholic beverage* was defined as one bottle of beer, one small glass of wine, or one mixed drink. In addition, requiring participants to calculate their quantity frequency and quantity estimates for the past month was consistent with the *U*-curve model's notion of discrete stages of adjustment. Average weekly frequency and quantity were multiplied to yield a composite, continuous/interval, drinks-per-week variable.

Assessment of marital satisfaction. Marital satisfaction was assessed with the Kansas Marital Satisfaction Scale (KMS; Schumm, Milliken, Poresky, Bollman, & Jurich, 1983). The KMS is a 3-item scale with scores ranging from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). The psychometric credibility of the KMS has been established in a number of studies with a variety of sample characteristics. Regarding internal consistency, investigations have resulted in strong alpha coefficients (e.g., $\alpha = .93$, Schumm, Nichols, Schectman, & Grigsby, 1983; $\alpha = .96$, Mitchell, Newell, & Schumm, 1986). Test–retest reliability coefficients of .71 were reported over a 10-week interval (Mitchell et al., 1986). Reports of adequate concurrent and discriminant validity have been demonstrated in KMS comparisons to the Quality Marriage Index for Wives (Callahan, 1996), in self-reports of marital stability (Jeong, Bollman, & Schumm, 1992), the Dyadic Adjustment Scale, and Norton's Quality Marriage Index (Schumm et al., 1986). Regarding criterion-related validity, the KMS has adequately distinguished between married and recently separated females (Schumm et al., 1985). Researchers have established that a total score of 16 or lower indicates some degree of marital distress (Crane, Middleton, & Bean, 2000). In our study the five coefficient alphas ranged from .84 to .98 ($M = .93$, $SD = .06$).

Assessment of mental health functioning. The Mental Health Inventory (MHI; Stewart & Ware, 1998; Veit & Ware, 1983) is a 39-item measure of psychological distress and well-being that was specifically designed for use in the general population. Each item on the MHI is rated by participants on a scale from 1 to 6. Throughout the MHI the descriptors attached to the 1 to 6 scale changed but generally reflected the theme 1 (*always*) to 6 (*never*). Examples of questions included, "During the past month, how much of the time have you been anxious or worried?" and "During the past month, how much of the time have you been a happy person?" Asking respondents to evaluate their status for the previous month was consistent with the *U*-curve model's phasic conceptualization.

The MHI was fielded in four large samples (N = 5,489). Results of the research suggested a flexible interpretation of the MHI including a hierarchical factor model composed of a general underlying mental health factor, a higher order factor structure, and a lower order factor structure. Veit and Ware (1983) indicated strong psychometric support for using the five distinct constructs or one summary index. The reported reliability estimate for the global MHI was .96. In our study, the 32-item summary MHI index was used and coefficient ranged from .93 to .97 across the five administrations.

Analyses

Although participants were strongly encouraged to complete all five stages of the study, in an effort to mitigate attrition in this 1-year, longitudinal design, participants were allowed to miss one testing interval. Of the 32 women originally enrolled in the study, two departed the country prematurely and before the end of the first year. One missed two testing intervals, thus her data was not included in the quantitative analyses. Of the remaining 29 eligible cases, missing data were estimated for 16. Using Tabachnick and Fidell (2007) as a guide, missing data were estimated by simultaneously averaging the individual participant's data (i.e., mean of individual scores for nonmissing intervals) and the time-in-country interval (mean of group scores for that specific interval).

For the first hypothesis, a three-way repeated measures ANOVA was conducted to evaluate the effect of role expectation (value, commitment), role category (occupational, marital, parental, homecare), and time (just-arrived, 3-, 6-, 9-, 12-months) on the value and commitment of the four life roles.

For the second, third, and fourth hypotheses, one-way repeated measures ANOVAs were used to evaluate the effect of time on the indicators of global psychological functioning. In these three separate analyses, alcohol use,

Table 1
Means (Standard Deviations) of Role Categories as a Function of Role Expectations, Role Type, and Time-in-Country

Time-in-Country	Occupational	Parental	Marital	Homecare
Role value				
Just-arrived	13.79 (3.08)	22.48 (2.90)	18.00 (6.14)	20.83 (3.14)
3-months	13.38 (3.45)	22.41 (2.74)	17.76 (6.20)	20.76 (3.39)
6-months	13.11 (4.15)	22.40 (2.83)	17.96 (4.93)	20.73 (3.92)
9-months	12.78 (4.52)	22.31 (2.55)	18.04 (5.01)	21.81 (8.48)
12-months	12.80 (4.08)	22.60 (3.40)	17.52 (5.95)	20.28 (3.52)
Role commitment				
Just-arrived	14.10 (5.12)	22.77 (2.67)	22.07 (3.39)	21.90 (3.94)
3-months	11.38 (4.61)	23.37 (1.95)	22.06 (3.58)	21.98 (3.15)
6-months	10.93 (3.88)	23.36 (1.68)	22.48 (2.41)	21.74 (3.42)
9-months	10.80 (4.17)	23.09 (1.69)	22.42 (2.64)	21.93 (3.51)
12-months	10.28 (4.26)	23.62 (1.57)	22.09 (2.72)	21.46 (3.51)
Role value				
Time combined	13.17 (3.29)	22.24 (2.42)	17.86 (5.27)	20.88 (3.74)
Role commitment				
Time combined	11.50 (3.89)	23.24 (1.37)	22.22 (2.51)	21.80 (3.00)

Note: The time-in-country subsections of the table were created from the three-way repeated measures ANOVA results. The time combined subsections of the table were created separately, as described in the procedures that created the two-way repeated measures ANOVA results.

marital satisfaction, and mental health functioning scores were used as the dependent variables and time-in-country was used as the repeated measures factor.

Results

For the first hypothesis, a three-way repeated measures ANOVA was conducted to evaluate the effect of Role Expectation, Role Category, and Time on the value and commitment of the four life roles. The dependent variable was the subscale score from LRSS. The repeated measures factors were Role Expectation with two levels (value, commitment), Role Category (occupational, marital, parental, homecare), and Time (just-arrived, 3-, 6-, 9-, 12-months). Means and standard deviations are reported in Table 1. The main and interaction effects were tested using the multivariate criterion of Wilks's lambda (Λ). The Role Expectation × Role Category × Time interaction effect was nonsignificant,

$\Lambda = .41$, $F(12, 17) = 2.024$, $p = .090$, multivariate eta squared = .588. Similarly, the Role Category × Time, $\Lambda = .54$, $F(12, 17) = 1.219$, $p = .346$, multivariate eta squared = .462, and the Role Expectation × Time, $\Lambda = .95$, $F(4, 25) = .313$, $p = .867$, multivariate eta squared = .048, interaction effects were not significant. The Role Expectation × Role Category effect was significant, $\Lambda = .32$, $F(3, 26) = .18.23$, $p < .001$, multivariate eta squared = .678. Regarding main effects, the Time main effect was not significant, $\Lambda = .70$, $F(4, 25) = 2.662$, $p = .056$, multivariate eta squared = .299. However, the Role Category, $\Lambda = .09$, $F(3, 26) = .88.78$, $p = .000$, multivariate eta squared = .911, and Role Expectation, $\Lambda = .77$, $F(1, 28) = 8.504$, $p = .007$, multivariate eta squared = .233, main effects were significant.

To provide the most meaningful interpretation of results, we ignored the significant main effects and concentrated on interpreting the Role Expectation × Role Category interaction effect. First we created eight new variables that represented each of the LRSS subscale scores, averaged across the five stages. For example, the new variable that represented LRSS occupational role value subscale was the average of that subscale score from the five testing phases. Then we conducted a two-way repeated measures ANOVA to evaluate the effects of Role Expectation and Role Category on the value and commitment of the four life roles. The Role Expectation × Role Category interaction effect was significant, $\Lambda = .32$, $F(3, 26) = 18.23$, $p < .001$, multivariate eta squared = .678. Similarly, the Role Expectation, $\Lambda = .77$, $F(1, 28) = 8.504$, $p = .007$, multivariate eta squared = .233, and Role Category, $\Lambda = .09$, $F(3, 26) = 88.78$, $p < .001$, multivariate eta squared = .911, main effects were significant.

Again, to obtain the most meaningful interpretation, we ignored the main effects and concentrated on the significant Role Expectation × Role Category interaction effect. Simply, we desired to ask two questions. First, within the four role categories, are there differences in overall importance assigned to the role? Second, within each of the role categories, are there differences between role value and role commitment? To answer the first question we created four new variables that represented the overall role importance. For example, the overall role importance of the occupational role category was created by obtaining the mean from the occupational role value and occupational role commitment variables. The results of the six paired-samples *t* tests are provided in the upper half of Table 2. Because we used the Bonferroni method to control Type I error, only four of the six comparisons were determined to be statistically significantly different. As can be seen from the table, the occupational role is statistically significantly lower than the remaining three roles, and the marital role is lower than the parental role. Given that the *d* statistic (the

Table 2
Means, Standard Deviations, and Results of Paired *t* Tests for Role Importance and Role Expectations

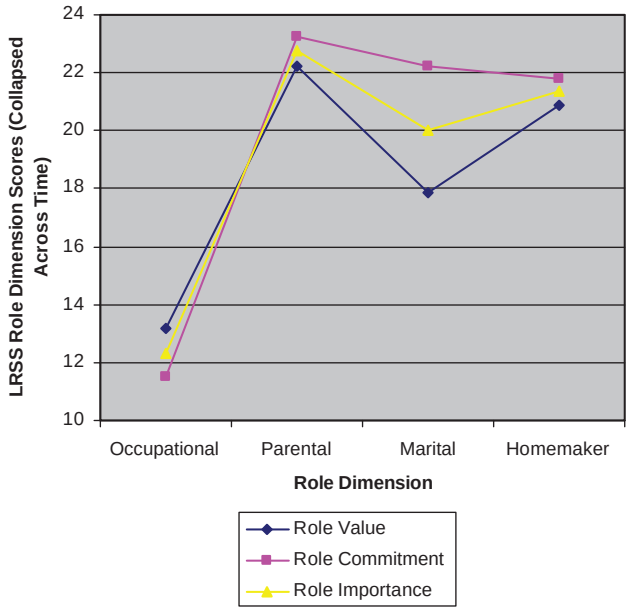
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Role importance comparisons ($N = 29$)							
Occ vs. Par	12.34	3.14	22.74	1.60	–15.52	.000*	2.88
Occ vs. Mar	12.34	3.14	20.04	3.59	–9.17	.000*	1.70
Occ vs. Hom	12.34	3.14	21.34	2.99	–9.91	.000*	1.84
Par vs. Mar	22.74	1.60	20.04	3.59	5.53	.000*	1.027
Par vs. Hom	22.74	1.60	21.34	2.99	2.44	.021	.45
Mar vs. Hom	20.04	3.59	21.34	2.99	1.76	.090	.33
Role expectation comparisons ($N = 29$)							
	Value		Commitment				
Occupational	13.17	3.29	11.50	3.39	3.97	.000*	.74
Parental	22.24	2.42	23.24	1.37	2.36	.026	.44
Marital	17.86	5.26	22.22	2.51	–5.80	.000*	1.08
Homecare	20.88	3.74	21.80	3.00	–1.55	.133	.29

Note: Occ = Occupational; Par = Parental; Mar = Marital; Hom = Homecare.
* Indicates statistical significance according to the Bonferroni method for control of Type I error ($p < .008$ for role importance comparisons; $p < .0125$ for role value vs. commitment comparisons).

measure of effect) indicates the degree that the mean of the difference scores deviates from 0 in standard deviation units, these differences are quite large. To answer the second question, we conducted four paired-samples *t* tests to compare the value and commitment of each role category. As shown in the lower half of Table 2, using the Bonferroni method to control for Type I error, only two of the six comparisons were statistically significantly different. Specifically, for the occupational role, commitment is lower than value. For the marital role, commitment is higher than value. The effect sizes for these differences were quite large. A graphic representation of these interactions is found in Figure 1.

To test the effect of time on use of alcohol, a one-way within-subjects ANOVA was conducted with the factor being Time-in-Country and the dependent variable being the scores on the alcohol consumption index. The

Figure 1
Role Expectation × Role Category Interaction Effect



Note: LRSS = Life Roles Salience Scales.

results for the ANOVA did not indicate a significant effect for time, $\Lambda = .81$, $F(4, 25) = 1.52$, $p = .228$, multivariate eta squared = .195. To evaluate marital satisfaction, a one-way within-subjects ANOVA was conducted with the factor being Time-in-Country and the dependent variable being the KMSS scores. Similarly, the results for the ANOVA did not indicate a significant effect for time, $\Lambda = .93$, $F(4, 25) = .48$, $p = .744$, multivariate eta squared = .073. Finally, to test the effect of time on mental health functioning, a one-way within-subjects ANOVA was conducted with the factor being Time-in-Country and the dependent variable being the MHI scores. Once again, the results for the ANOVA did not indicate a significant effect for time, $\Lambda = .96$, $F(4, 25) = .24$, $p = .911$, multivariate eta squared = .038. Means and standard deviations for all three analyses are presented in Table 3. Graphic representations of mean scores of global psychological functioning, superimposed on individual scores, are found in Figure 2.

Table 3
Means (Standard Deviations) of Measures of Global Functioning as a Function of Time-in-Country

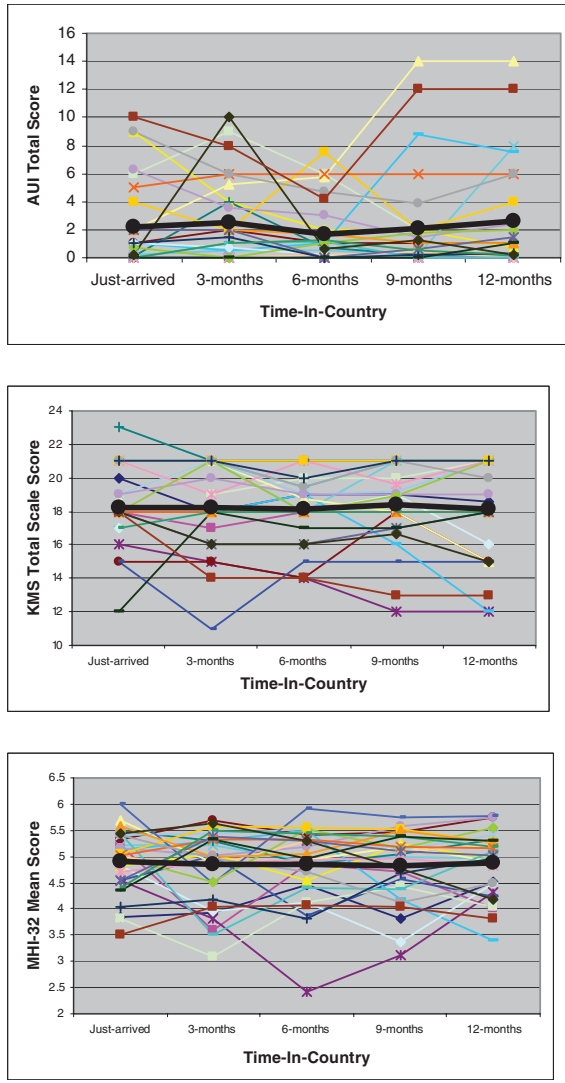
Time-in-Country	Alcohol Use Index	Marital Satisfaction	Mental Health Functioning
Just-arrived	2.32 (3.29)	17.90 (3.61)	84.89 (21.09)
3-months	2.64 (3.23)	18.07 (3.42)	85.02 (22.89)
6-months	1.81 (2.33)	18.13 (2.06)	87.10 (24.78)
9-months	2.15 (3.60)	18.36 (2.31)	83.67 (24.50)
12-months	2.60 (3.77)	18.09 (2.88)	80.33 (23.19)

Discussion

As a first of its kind, we approached our study with the goal of gaining a greater understanding of the experiences of the female expatriate spouse. Regarding the relationship between role expectation, role category, and time-in-country, results indicated that the expatriate women in Turkey perceived their occupational role to be less important than the remaining three (i.e., parental, marital, homecare). In addition, the parental role was more important than the marital role. Regarding role expectations, the women had greater value for than commitment to their occupation. Conversely, the women had greater commitment than value to their marriage. Restating these findings, the parenting role seemed to be the most important; the occupational role, the least. Within the roles, it is not surprising women may have valued their occupations but had low commitment simply because they were not involved in the practical aspects of maintaining it. In contrast, a greater commitment than value for marriage may indicate that the demands of international living require more practical aspects of attention to marital issues.

Results from our companion Naturalistic Inquiry assisted in the interpretation of these results (Bikos et al., 2007, this issue). Many of the sojourning women perceived their careers as secondary to their roles as parent and wife. In fact, for those who planned a continuous succession of global placements, the women expected to relocate as a function of their husband's career. In contrast, a subsample entered the country with high value of and commitment to their occupational roles. As described in the naturalistic results, throughout the yearlong project, these women voiced concerns and frustrations about not finding work that was consistent with their career (see Bikos et al.). Moreover, they worried about the impact that the gap of unrelated employment would have on their

Figure 2
Expatriate Adaptation as a Function of Time; Mean Scores (Heavy Black Line With Triangle Marker) for Each Measure of Global Adaptation Superimposed on Individual Scores



Note: AUI = Alcohol Use Index; KMS = Kansas Marital Satisfaction Scale; MHI = Mental Health Inventory.

career path. This finding is consistent with Shaffer and Harrison (2001) who reported that with an increasing number of dual-career couples, career issues of the spouse are an increasing, critical factor in accepting an international assignment. In most cases, the spouse must forfeit career-related pursuits to accompany the expatriate employee. In their qualitative study, Shaffer and Harrison reported that spouses who had a significant occupational role shift experienced an initial decrease in clarity of self-concept and thus had a greater need to form a new identity incorporating their changed status. In contrast, spouses who did not experience a change in employment status appeared better equipped to transport their self-definitions to the new environment. In subsequent quantitative analysis, Shaffer and Harrison reported a negative, nonsignificant correlation between employment status and spouse personal adjustment. The authors acknowledged the oversimplified manner in which change in employment status was assessed.

Our study did not support the hypotheses that the importance of life roles, alcohol use, marital satisfaction, or mental health functioning would change as a function of time-in-country. This result is contrary to self-help, culture shock literature, and the *U*-curve model, which suggests there are predictable highs and lows in the sojourning experience (Copeland & Griggs, 1985; Winkelman, 1994). Certainly, our naturalistic data pointed to periods of relative frustration or despair in the women's experiences (Bikos et al., 2007, this issue). However, these individual periods seemed more a result of situational stressors that occurred multiply or were exacerbated because the women were in a foreign land and access to familiar or trusted resources was unknown or difficult.

Limitations

The most significant limitation of the study is that of generalizability. Specifically, our study was conducted in Turkey. Thus, there are likely country-specific characteristics that would influence a sojourning experience to an environment that was culturally different. In addition, 66% of the sample was in Turkey because of U.S. government assignment. The remaining 34% represent corporate, not-for-profit, and religious and/or humanitarian assignments. Thus, caution should be taken when applying the results to individuals in those smaller categories. This point is highlighted by results of a 2002 study (Navara & James, 2002) where a comparison of 100 missionaries to 67 expatriates from other categories indicated missionaries had less satisfaction in their foreign posting than the other expatriates.

Regarding sample size, a larger sample would have provided for a more powerful analysis for the quantitative aspects of the study. Still, the sample

size of about 30 clearly surpassed Green and Salkind's (2005) requirement of 15 cases per cell for a trustworthy *p* value.

Finally, the low alpha coefficients for the parental role commitment scale of the LRSS (Amatea et al., 1986) were a limitation. Given the stability of our other measures, we found this a surprise. Two issues seemed to contribute to the reduced alphas. First, item analysis revealed that alpha coefficients were consistently reduced by two of the reverse-scored items on the parent role commitment scale. These included, Item 1 (It is important to me to have some time for myself and my own development rather than have children and be responsible for their care) and Item 4 (Becoming involved in the day-to-day details of rearing children involves costs in other areas of my life which I am unwilling to make). In addition, during the interviews for the Naturalistic Inquiry, several women who self-identified as Christian indicated that some items on LRSS were troubling because they found it difficult to endorse the highest level of some items when their value of and commitment to God superceded all else (e.g., LRSS item 1, "Having work/a career that is interesting and exciting to me is my most important life goal.").

Implications for Research and Practice

The study has potential practical implications for a wide audience: organizations who place employees and their families overseas, practitioners who provide cultural training to those who will expatriate to a foreign country, and the sojourner, herself. Specifically, for those who prepare expatriates for overseas assignments, our study calls into question the manner in which culture shock has been presented. Although the concepts remain useful, it is questionable as to whether there are, indeed, predictable patterns of adaptation as a function of time-in-country.

Perhaps the most important implication has to do with the manner in which we conceptualize and, consequently, study expatriation to a foreign culture. The *U*-curve model focuses rather exclusively on a timed or staged approach to adaptation. In contrast, it may be more useful to research the phenomenon with models that integrate additional, theoretically relevant, constructs. In recent years, Black, Mendenhall, and Oddou (1991) proposed a theory for understanding international adjustment. Drawing from the international and domestic adjustment literature, they suggested that a period of anticipatory and/or preassignment adjustment influences in-country adjustment, which influences the mode and degree of adjustment. Anticipatory adjustment includes individual factors (predeparture cross-culture training, previous experience) and organization factors (selection mechanisms and criteria).

In-country adjustment comprises factors related to the (a) individual (self-efficacy, relation skills, perception skills), (b) job (role clarity, discretion, novelty, conflict), (c) organization culture (organization culture novelty, social support, logistical help), (d) organization socialization (socialization tactics, socialization content), and (e) nonwork environment (culture novelty, family–spouse adjustment). Regarding adjustment, three facets are proposed: adjustment of the expatriate employee to work, adjustment to interacting with host nationals (termed *interaction adjustment*), and adjustment to the general environment. With few modifications, subsequent research has supported this model (Shaffer, Harrison, & Gilley, 1999; Stroh, Dennis, & Cramer, 1994; Takeuchi, Yun, & Russell, 2002). In addition, meta-analyses of 64 studies provided strong support for the Black et al. (1991) model (Bhaskar-Shrinivas et al., 2005). Although such a comprehensive model has not been proposed for expatriate spouses, Black and Gregersen (1991) used interaction adjustment and general adjustment as indicators. A third variable, role adjustment (a variable comparable to the work adjustment variable assessed of the employee), was added by Mohr and Klein (2004). Factor analyses supported these three dimensions of adjustment.

In summary, this investigation is consistent with others that call into question the validity and utility of the *U*-curve model to conceptualize adaptation to a foreign culture. In fact, our indicators of global psychological functioning (i.e., alcohol use, marital satisfaction, mental health functioning, life role salience) were stable through the first year of expatriation to Turkey. As a result, we recommend a more comprehensive approach such as Black et al.'s (1991) theory for understanding international adjustment. We conclude that time-in-country is only one of a myriad of variables used to describe and predict adaptation to expatriation; the *U*-curve alone is inadequate.

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