

Analysis of response style differences on the Multidimensional Students' Life Satisfaction Scale between Croatian and American youth

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Measurement equivalence has been noted as particularly important in cross-cultural research to ensure that attributes, attitudes, and/or perceptions are accurately assessed across groups of interest. Although response style differences appear to be a phenomenon noted across a variety of nations, few such studies have focused on youth and no studies have investigated response style differences in life satisfaction measures. In this investigation, 308 American and 227 Croatian youth were administered the *Multidimensional Students' Life Satisfaction Scale* (MSLSS; Huebner, 1994) to assess their global satisfaction, as well as their satisfaction with friends, family, living environment, school and self. Results found no response style differences across most MSLSS domains, with the exception of self satisfaction and school satisfaction. American youth reported a greater tendency to respond to self and school satisfaction items at the positive end of the response continuum, while Croatian youth responded more frequently to the mid-point on self satisfaction items. Some gender differences were noted on the friendship and school satisfaction domains. A discussion of these findings and their implications conclude the paper.

Key words: life satisfaction, response style, cross-cultural differences

Concerns regarding measurement equivalence in psychological assessment have been the subject of ongoing research for over a half century (Cronbach & Meehl, 1955; Meredith, 1993). There is evidence to suggest that rating scales are particularly susceptible to a violation of measurement equivalence in the form of response style differences (RSDs). Response style differences is defined as the tendency to rate items based on cultural influences rather than on the perceived level of an attribute held by the individual (Bachman & O'Malley, 1984; Hui & Triandis, 1989; Marin, Gamba, & Marin, 1992; Paulhus, 1991). Such differences are not believed to reflect disparities in interpreting the items representing an underlying construct (Cheung & Rensvold, 2000), or are an artifact due to the translation of items into various languages (Arce-Ferrer & Ketterer, 2003), but occur when respondents make judgments about themselves within the context of the group in which they are most familiar (Heine, Lehman, Peng, & Greenholz, 2002).

The literature has consistently noted cross-national RSDs on psychological rating scales. For example, individuals from collectivistic cultures (such as Asian nations) have been shown to use the midpoint of rating scales more often than individuals from individualistic (i.e., Westernized) cultures, while the converse has been found between these groups when examining the extreme ends of scoring option

(e.g., Chen, Lee, & Stevenson, 1995; Grimm & Church, 1999). The phenomenon is not limited to traditional value system boundaries and has been found across nations sharing similar political and cultural values. For example, van Herk, Poortinga, and Verhallen (2004) reported RSDs between nations surrounding the Mediterranean (Spain, Italy) and countries in Northwestern Europe (Britain, Germany).

Although there are different types of RSDs, two of the most problematic with respect to measurement equivalence are labeled "extreme response bias" and "response acquiescence" (Bentler, Jackson, & Messick, 1971; Schuman & Presser, 1996). Extreme response bias refers to an individual's tendency to respond at the farthest end-points of a scale (e.g., "very much true", "very much false"), regardless of the item's content (Bachman & O'Malley, 1984; Crandall, 1982; Greenleaf, 1992). Rating items at the extreme ends by one group (in comparison to the other group) increases the within-group standard deviation and between-group variance, both of which increase the probability of introducing type one errors (Hui & Triandis, 1985). Response acquiescence, on the other hand, refers to the tendency of individuals to agree, rather than disagree with items, regardless of the item's content (van Herk, Poortinga, & Verhallen, 2004). This response style also leads to a strongly skewed scoring distribution, which in turn leads to specious conclusions when interpreting the findings.

Although there is some understanding of how various cultural groups may provide RSDs to psychological rating scales, much work remains. For example, most studies investigating these differences have focused on adult popu-

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lations, with few studies investigating this phenomenon among school-aged youth. Thus, it is unclear of the extent that RSDs may play among this particular population. Second, of the studies that have analyzed youth responses, most have compared youth living within the American culture (e.g., African-American vs. Caucasian youth, see Bachman & O'Malley, 1984). Considering that RSDs may occur across a variety of cultures, an analysis of response styles between American youth and youth in other countries is important to determine the generalizability of findings. Finally, the majority of research investigating measurement invariance has focused on intellectual and ability tests. The dearth of research investigating RSDs in other types of psychological measures, such as those that assess positive aspects of mental health has been noted (Frisch, 2000).

Life satisfaction is one indicator of positive mental health and is defined as an individual's cognitive appraisal of his/her life based on subjective standards (Diener, 2000). The construct can be assessed either globally (without reference to a specific life domain, such as "Overall, I am satisfied with my life") or within specific life contexts (e.g., "I am satisfied with the quality of my friends", "I enjoy where I live"). Research in youth life satisfaction has flourished over the past decade (see Huebner, Suldo, & Gilman, 2006; Gilman & Huebner, 2003 for reviews) and is considered to be a key indicator of psychological well-being (Huebner, 2004). For example, life satisfaction can be discriminated from other well-being constructs such as self-esteem (Gilman, Huebner, & Laughlin 2000), depression (Greenspoon & Saklofske, 2001), extraversion, (McKnight, Huebner, & Suldo, 2002), and sense of mastery (Sam, 1998). Life satisfaction also appears to predict changes in adaptive coping responses (Gilman & Barry, 2003) and appears to mediate the negative impact of stress (McKnight et al., 2002).

The most frequently used measure to assess life satisfaction is the *Multidimensional Students' Life Satisfaction Scale* (MSLSS: Huebner, 1994), a 47-item self-report rating scale that is comprised of a global domain, as well as domains that assess friends, family, school, living environment, and self satisfaction. The MSLSS has been used with youth between the ages of 8 and 18, and it has also been administered to youth representing a variety of nations, including American (see Huebner & Gilman, 2002), Canadian (Greenspoon & Saklofske, 1997), Irish (Gilman, Langknecht, Tian, Park, Šverko, & Schiff, 2006), Israeli (Schiff, Nebe, & Gilman, in press), Spanish (Casas, Alsinet, Rosich, Huebner, & Laughlin, 2001), Korean (Park & Huebner, 2005), and Croatian cultures (Gilman, Ashby, Šverko, Florell, & Varjas, 2005). Extant findings reveal strong psychometric properties of the scale across all cultures, including alpha coefficients above .70, moderate interdomain correlations, and solid evidence of construct validity (see Huebner, Suldo, & Gilman, 2006).

Nevertheless, although the MSLSS evidences solid psychometric properties, cross-cultural analyses of RSDs have

not been conducted. In this study, the response styles of the MSLSS of a sample of Croatian youth were analyzed and compared with a sample of American youth. Given previous findings that revealed cross-cultural RSDs on scales that measured constructs similar to life satisfaction (e.g., Bachman & O'Malley, 1984; van Herk, Poortinga, & Verhallen, 2004), such differences are believed likely to extend to various MSLSS domains. An additional point of interest in this study was how each group responded to the midpoint of the scale. Although systematic clustering of responses around a scale's midpoint represents another form of RSD, in that such responses tend to minimize the variance around items (increasing the probability of Type I errors), analyses of midpoint RSDs have been relatively rare. Considering that this is the first study to analyze cross-national response styles of the MSLSS, the results are considered exploratory and thus no a priori hypotheses were made.

METHOD

Participants

The sample for the current study was comprised of 308 American and 227 Croatian youth. Sixty percent of the population was female. The data analyzed in this paper was part of a larger study of life satisfaction among youth from a variety of nations, and portions of this data have been reported elsewhere (Gilman et al., 2005). Nevertheless, the analyses reported in this paper have not been conducted.

For the American sample, data were collected from two school districts in the Southeastern United States. Fifty-seven percent of the sample was female. The racial composition of this sample was more culturally heterogeneous than the Croatian sample, with Caucasian youth comprising 88% of the sample, while the remaining percentage consisted of youth from a broad array of cultural backgrounds (African-American, Hispanic-American, and Asian-American). The ages ranged between 11 to 19 years, and the mean age was 14.58 ($SD = 2.12$). For the Croatian sample, four separate schools were used across three cities in Croatia. Analyses of responses for each location revealed no significant departure from the mean total responses, thus the data were treated as one unified group. The ages ranged from 13 to 18 years, with the mean age of 15.19 ($SD = .91$). Females comprised the majority of the sample (65%).

Instrument and Procedures

The *Multidimensional Students' Life Satisfaction Scale* (MSLSS: Huebner, 1994) is a 40-item self-report instrument that assesses satisfaction across five specific life domains (family, friends, school, living environment, and self). Seven additional items assess global satisfaction. All questions are responded to on a six-point Likert scale format (1 = *strongly disagree*, 2 = *moderately disagree*, 3 = *mildly disagree*, 4 = *mildly agree*, 5 = *moderately agree*,

6 = *strongly agree*). Scoring of each domain is obtained by summing the relevant items and then dividing them by the number of items comprising each domain. Negatively worded items are reversed-keyed so that a higher score is indicative of higher levels of satisfaction. Studies of the MSLSS have consistently demonstrated acceptable psychometric properties across grades 3-12, including one-month stability coefficients ranging from .90 to .92 for the Total score and .72 to .86 for the domain scores (Huebner & Gilman, 2002), strong evidence of construct validity as indicated by both confirmatory (e.g., Gilman et al., 2000) and exploratory factor analyses (Huebner & Gilman, 2002), and strong evidence for convergent and discriminant validity (Gilman & Barry, 2003). To address concerns regarding the translation of psychological instruments into non-native languages (Brislin, 2000), coefficient alphas sample were computed for both samples and reported in Gilman et al. (2005). Alphas ranged from .70 (Self) to .88 (Friends) for the Croatian sample, and .83 (Self) to .91 (Family) for the American sample, all of which meet criteria considered adequate for research purposes (Salvia & Ysseldyke, 1988). A recent multigroup confirmatory factor analysis also reveals that the factor structure of the MSLSS is invariant across these two samples (Gilman et al., 2006).

In all cases, approval to collect data was first secured through each school district's superintendent's office and from each participating school principal. Further, the students were administered the instrument in a large environment (e.g., school cafeteria), seated at least two seats apart from each other. At least one teacher/administrator was assigned to a specific testing location in order to monitor the students' behavior and to help answer questions. These strategies were designed to reduce potential order and/or social desirability effects.

Preliminary examination of the scoring distribution of all MSLSS domains was first conducted to assess for outliers and to test for multivariate normality. All mean domain scores were first transformed to standardized z-scores for both groups. Based on recommendations by Stevens (1996), z-scores greater than ± 4.00 indicate responses at the extreme ends of the distribution. Two American and one Croatian youth reported friendship satisfaction scores that exceeded this criterion and were thus excluded from further analyses. There was no significant departure from normality on any of the variables in the study, with the skewness and kurtosis all within acceptable limits (i.e., less than 2.0; Lomax, 2001).

RESULTS

Computation of response distributions was based on Bachman and O'Malley (1984) and Chen et al. (1995), which has been replicated in more recent studies (van Herk, Poortinga, & Verhallen, 2004). Three indices were computed for each individual:

1. *Extreme Responding*: All "strongly agree" response options were coded as 1, while the remaining response options were coded as 0. These scores were then tabulated for each item comprising each scale. Following this procedure, all "strongly disagree" scores were coded as 1 while the remaining options were coded as 0. The Extreme Responding score was the sum of strongly agree and strongly disagree scores, divided by the total number of items comprising each MSLSS domain. Possible scores range from 0 to 1.
2. *Acquiescence*: The MSLSS contains two scoring options representing the positive and negative ends of the scale. Procedures described in van Herk, Poortinga, and Verhallen (2004) were used to calculate response acquiescence, with the two lowest scores on the rating scale (i.e., "strongly disagree" and "moderately disagree") coded as 1, while all other response options were coded a 0, and then summed. After this procedure was conducted, the two highest scores ("strongly agree" and "moderately agree") were computed in the same manner. Response acquiescence was derived by subtracting the number of negative endorsements from the number of positive endorsements. This number was then divided by the total number of items for each MSLSS domain, and possible scores ranged from -1 to 1, with higher scores denoting higher acquiescence.
3. *Response Midpoint*: Because the MSLSS is based on a 6-point rating scale, there is technically no "middle" option (which is often given a neutral label in rating scales, such as "neither agree nor disagree"). To assess the frequency of responses at the middle range, both the middle options (i.e., "mildly disagree" and "mildly agree") were equally weighted and coded .1, while all other options were coded as zero. These coded items were then summed and divided by 2 in order to compute an average "middle point" in the scoring continuum. Scores were then subtracted from 1 to obtain a scoring metric similar to the other two indices.

Table 1 reports the response style indices across the MSLSS domains for each group. By and large, there were few response differences across the satisfaction domains, albeit with some exceptions. For example, American youth reported significantly higher response acquiescence on the MSLSS Global, Self and School satisfaction domains than their Croatian peers. American youth also reported significantly higher midpoint responding for the Self domain than Croatian youth. Conversely, Croatian youth reported significantly higher extreme responding on the Living Environment domain. Nevertheless, the effect sizes of these differences ranged between .18 (Living Environment) to .35 (Self), which are considered small (Cohen, 1988). Taken as a whole, and with some small exceptions, American and Croatian youth reported a similar manner of scoring on the MSLSS items, regardless of life domain.

Table 1
Means (Standard Deviations) for Response Style Indices for MSLSS Domains for Each Group

Domain	Global			Friends			Self		
	American	Croatian	F	American	Croatian	F	American	Croatian	F
Response style									
Extreme responding	.32 (.28)	.28 (.26)	2.63	.49 (.35)	.54 (.33)	2.91	.35 (.30)	.32 (.24)	1.48
Acquiescence	.49 (.46)	.41 (.50)	4.03*	.78 (.31)	.82 (.27)	2.47	.70 (.34)	.58 (.34)	14.05**
Midpoint	-.03 (.90)	-.08 (.85)	0.44	.32 (.95)	.39 (.97)	0.67	.22 (.82)	.04 (.79)	6.07**

Domain	School			Family			Living environment		
	American	Croatian	F	American	Croatian	F	American	Croatian	F
Response style									
Extreme responding	.27 (.27)	.27 (.26)	0.12	.34 (.32)	.32 (.29)	0.35	.34 (.29)	.39 (.26)	5.74*
Acquiescence	.11 (.51)	.01 (.48)	6.26**	.48 (.54)	.46 (.49)	0.25	.36 (.43)	.30 (.43)	2.40
Midpoint	-.56 (1.03)	-.72 (2.05)	3.15	.02 (.94)	-.05 (.91)	0.91	.35 (.47)	.39 (.44)	1.01

Note. * $p < .05$, ** $p < .01$.

Potential gender differences were tested via separate MANOVAs for each type of response index across the MSLSS domains. Follow-up univariate tests were Bonferroni-corrected to .008 (.05/6), to control for Type I errors. A 2 (nation) by 2 (gender) by 6 (extreme response bias) MANOVA was first conducted, and a significant main effect was noted for gender, Pillai's Trace = .07, $F(6, 525) = 6.57$, $p < .01$. The multivariate effect size was small ($\eta^2 = .06$). Significant mean extreme response differences were found on the MSLSS School domain, $F(1, 533) = 9.76$, $p < .01$. The effect size of this difference was small ($ES = .02$), with males reporting significantly higher extreme response rates than females ($M = .31$, $SD = .30$ vs. $M = .24$, $SD = .24$). The nation-by-gender interaction was not significant ($p > .05$), indicating that these differences were not specific to cultural background. A separate MANOVA to assess gender differences on response acquiescence revealed a main effect for gender, Pillai's Trace = .05, $F(6, 525) = 4.23$, $p < .05$, although the multivariate effect size was again small ($\eta^2 = .05$). Follow-up univariate tests found significant mean response acquiescence differences on the Friends domain, $F(1, 533) = 12.71$, $p = .003$, and School domain, $F(1, 533) = 8.04$, $p = .005$. Univariate effect sizes were small ($ES = .02$ in both cases). Females reported significantly higher response acquiescence than males for both domains ($M = .82$, $SD = .33$ vs. $M = .75$, $SD = .28$ for females/males the Friends domain, and $M = .12$, $SD = .49$ vs. $M = -.01$, $SD = .51$ for females/males on the School domain). There was no nation-by-gender interaction effect ($p > .05$). Finally, a significant main gender effect was found for midpoint responses, Pillai's Trace = .05, $F(6, 525) = 4.43$, $p < .05$. The multivariate effect size was again small ($\eta^2 = .05$). Univariate analyses revealed significant differences on the Friends domain and the Self domain, $F(1, 533) = 8.77$, $p < .01$, and $F(1, 533) = 10.64$, $p < .01$, respectively. The effect sizes for both differences were small ($ES =$

.02 for each domain). Females reported significantly higher midpoint responding for each domain ($M = .72$, $SD = .44$ for females and $M = .60$, $SD = .52$ for males on the Friends domain, and $M = .61$, $SD = .37$ for females and $M = .50$, $SD = .44$ for males on the Self domain). The nation-by-gender interaction effect was not significant ($p < .05$).

DISCUSSION

Among Croatian and American youth who were administered the MSLSS in this study, there were few instances of overly extreme responding, acquiescence, or a tendency to focus on the middle point of the scale. This finding suggests that both groups tend to use the entire spectrum of scoring options when considering their global satisfaction and satisfaction within specific life domains. Taken together with other findings that demonstrate invariant factor loadings with respect to its underlying factor structure (Gilman et al., 2006), the findings indicate that, for the most part, the MSLSS yields a sizeable degree of measurement equivalence for American and Croatian youth.

Nevertheless, some RSDs were noted across cultural groups. Specifically, American youth reported significantly higher response acquiescence on the Global, Self, and School domains and significantly higher midpoint responding on the Self domain than Croatian youth. Croatian youth, on the other hand, reported significantly higher extreme responding on the Living Satisfaction. To be sure, the effect sizes of all these differences are considered small, and thus caution is suggested in interpreting these findings pending further research, but some of the findings parallel what has been noted elsewhere. For example, self-expression and subjective well-being (including life satisfaction) have been shown to be related and may be mediated by local and na-

tional cultural norms, ranging from relatively subtle nuances such as the proper expression of emotions to more complex factors, such as pressures to conform to social expectations (Biswas-Diener, Vitterso, & Diener, 2005; Triandis, 2000). The differences in acquiescent responding on the MSLSS Self domain in particular (which yielded the largest effect size) suggests that American youth have a tendency to respond to the Self items at the neutral (or midpoint) to positive end of the scale, underscoring the emphasis placed on positive self-expression that is often observed in American society and not found at similar levels in other societies (Oyserman, Coon, & Kemmelmeier, 2002). For example, Gilman et al. (2006) reported similar findings between American youth and youth Eastern nations (i.e., China) as well as nations sharing relatively similar value systems (e.g., Ireland), suggesting that the expression of self (as measured by self-satisfaction) may be differentially influenced by factors specific to each culture. These findings can be extended to the present study, where Croatian youth tended to use both ends of the scoring continuum and did not cluster their ratings on the midpoint, again suggesting that self-expression is perhaps mediated by cultural factors unique to this culture. Further, the finding that response acquiescence (and for this matter extreme and midpoint response bias) was not observed across all MSLSS domains indicates that RSDs may be influenced by non-shared cultural variance only within particular domains. The question of *specific* factors that contribute to self-satisfaction ratings for each culture could not be assessed in this study and is a matter of future research endeavor.

Separate MANOVAs revealed no gender-by-nationality interaction on any of the response style indices, suggesting that whatever RSDs found on the MSLSS occurred regardless of cultural background. Significant gender differences were found, with males reporting higher extreme responding on the School domain, while females reported higher response acquiescence on the Friends and School domain and higher midpoint responding on the Friends and Self domains. It should be noted that although the findings were statistically significant, the effect sizes of these differences were very small, rendering the practical findings of these differences questionable. Similar findings have been noted among Korean, Chinese, and Irish youth with the MSLSS (Gilman et al., 2006). Collectively, these findings suggest that youth, regardless of their national affiliation report their life satisfaction at equal levels across multiple life domains.

Although the current study finds that both Croatian and American youth largely had equivalent response styles for the MSLSS, some limitations may preclude their generalizability. First, the data obtained was from self-reports and thus response artifacts like social desirability cannot be ruled out. This limitation may be attenuated by the finding that most MSLSS domains did not yield differential response styles. Further, the one domain that yielded the largest dif-

ference was self satisfaction, and the difference here could be plausibly and equally explained by differences in cultural value systems. Moreover, life satisfaction by definition necessitates subjective evaluations of an individual's life quality. Nevertheless, it has been noted that incorporating methods other than self-reports, obtained at a single time point, are needed to understand the nature and correlates related to life satisfaction reports (Diener, Oishi, & Lucas, 2003). In this regard, longitudinal studies that incorporate additional methodologies, such as parent, teacher, and peer reports are recommended further next steps in this line of research.

Second, distinctions between traditionally accepted value systems across nations (e.g., individualistic vs. collectivistic) have been called into question because most studies of this type are based on a normative approach, where mean scores are assumed to reflect the predominant value system shared among citizens (Lee & Tracey, 2005). However, there is a large degree of variance that is unaccounted for when examining mean scores, and there is some data to suggest that the cultural differences that do exist are relatively moderate and in some cases contrary to expectation. For example, a recent comprehensive meta-analysis (Oyserman et al., 2002) found that among Asian groups, only the Chinese group was considered collectivistic in their view of self and well-being. Few differences were noted between two nations having conceptually different value systems (Americans and Koreans), with both countries adopting a more individualistic perspective when it came to well-being reports. It is becoming increasingly apparent that unique cultural nuances exist even among nations sharing similar value systems, and thus future studies should adapt an idiographic approach when examining life satisfaction reports between youth living in different nations (see Fuertes, Bartolomew, & Nichols, 2001).

Finally, the translation from English to Croatian must be acknowledged as a limitation of this study. Although other studies have found support for the construct validity of the MSLSS for Croatian youth, including support for its underlying factor structure, evidence of convergent and discriminant validity, and adequate internal consistency across all domains (see Gilman et al., 2005; Gilman et al., 2006), translating the items into a language other than English could have resulted in different interpretations of item content. The importance of carefully validated translations of psychological and educational scales in cross-national research continue to be emphasized (e.g., McCrae, 2001) and certainly are echoed here. Finally, additional studies using a translated version of the MSLSS among samples of Croatian youth representing distinct regions of the country are necessary to establish the generalizability of the current findings. Given these limitations, the results of this study are simply viewed as an initial but important first step towards investigating how youths' life satisfaction (and their responses to such items) may be influenced by unique cultural factors.

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