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# A Multistage Longitudinal Comparative (MLC) Design Stage II

## Evaluation of the Changing Lives Program (CLP): The Possible Selves Questionnaire—Qualitative Extensions (PSQ-QE)

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The study reported in this paper, a Multistage Longitudinal Comparative (MLC) Design Stage II evaluation conducted as a planned preliminary efficacy evaluation (psychometric evaluation of measures, short-term controlled outcome studies, etc.) of the Changing Lives Program (CLP), provided evidence for the reliability and validity of qualitative measures under development as well as the utility of unifying qualitative (e.g., open coding, theoretical sampling/saturation, etc.) and quantitative (e.g., quasi-experimental designs, advanced statistical analysis, psychometric analysis, etc.) research methods and procedures for evaluating intervention programs. Specifically, when analyzed using Relational Data Analysis, response data from the Future Possible Selves Questionnaire yielded theoretically meaningful categories with robust levels of reliability and construct and concurrent (external) validity. Additionally, the pattern of qualitative change for participants in the intervention condition, the CLP, were found to be positive, significant, and in the hypothesized direction relative to the comparison group, providing support for the feasibility of creating evidence-based youth development programs for promoting positive development in self and identity in troubled youth.

**Keywords:** *Positive Youth Development, Relational Data Analysis (RDA), Multistage Longitudinal Comparative (MLC), qualitative methods*

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**T**he Changing Lives Program (CLP) is one of the programs currently being developed as part of the Miami Youth Development Project (YDP; Arnett, Kurtines, & Montgomery, 2008, this issue). The Miami YDP is the result of efforts to create a university-community collaboration based on research-related principles consistent with the outreach research model (Jensen, Hoagwood, & Trickett, 1999; Lerner, Fisher, & Weinberg, 2000), that is, a model that focuses on meeting community needs by generating innovative knowledge of effective intervention strategies that are feasible, affordable, and sustainable in “real world” settings. CLP, a school-based counseling intervention, uses a participatory and transformative approach to empower troubled (multiproblem) youth in alternative high schools.

Implemented as a selective/indicated youth development program, counseling services provided by the program are currently available to all Miami public voluntary alternative high schools with approximately 200–250 multiethnic students served each year by counseling trainees from the university. Consistent with the collaborative model, the implementation of CLP is integrated into the ongoing flow of each school’s activities (e.g., as part of the school’s ongoing counseling program, outreach social services, etc.). Students participate in CLP groups either through self or counselor referral. In the CLP groups, counselors address the presenting problems the youth bring into group counseling (i.e., relationship issues, life choices, anger management, etc.), while aiming to promote positive youth development in the long term (Kurtines, Ferrer-Wreder, Berman, Cass Lorente, Silverman, Montgomery, 2008, this issue).

## **Evaluating the Changing Lives Program**

In this article we report the results of the second of two research studies implemented within a Developmental Intervention Science (DIS) outreach research approach as Multistage Longitudinal Comparative (MLC) Stage II program evaluation studies of YDP’s CLP. The results of the first study and a full description of the methodology are reported in Lewis Arango, Kurtines, Montgomery, and Ritchie (this issue). The data collected, the measures and methods used, and the results reported here build on several years of extensive bootstrapping efforts in community program development and background efforts in selecting, developing, and refining measures and methodological procedures consistent with our evolving theoretical/methodological framework (see Kurtines, Lewis Arango,

& Ritchie, 2006; Lewis Arango et al. [2008, this issue] for details of the methods used in both studies and the results of the first study).

## **The PSQ-QE Stage II Study—Most Important Future Possible Self**

The PSQ-QE Stage II study both replicated and extended the LCI Relational Data Analysis (RDA) study (Lewis Arango et al., 2008, this issue). The PSQ-QE study was conducted, in part, to extend the scope of research capabilities of the Miami YDP to include an open-ended “brief” response qualitative index of a specific domain of the self (future possible self) using a relatively large qualitative data set. This project further illustrated the ways by which the practical research methods, procedures, and data analytic strategies we have been developing may provide useful directions for overcoming the meta-theoretical methodological split that has historically characterized the human sciences (Kurtines, Montgomery, & Ferrer Wreder, 2008, this issue).

### **Method**

#### **Participants and Procedures**

Ninety-six participants in Miami YDP took part in the PSQ-QE RDA study. Seventy-three high school adolescents who participated in the CLP comprised the intervention condition. Of these, 43 completed a PSQ-QE as part of their fall pretest evaluation, winter mid-year evaluation, and end of the follow-up evaluation. Twenty-three students who were identified by the lead teachers and school counselor as not having participated in any of the counseling and guidance programs prior to or during the semester in question at the same high school participated in a comparison group. They were administered a PSQ-QE as part of the fall pretest evaluation and winter mid-year evaluation but did not take part in the intervention. The multiethnic sample of intervention participants comprised 17 (40%) African American, 21 (48%) Hispanic, and 5 (12.5%) white/non-Hispanic with 23 (54%) females and 20 (46%) males; thus, the sample was typical of the school’s demographic make-up. The age of the participants ranged from 14 to 19 years. This project used a short-term (Pre, Post, End of Year Follow-Up; EOYF) nonrandomized comparison control quasi-experimental research design.

## Measure

The primary measure used for this project was the Possible Selves Questionnaire—Qualitative Extensions (PSQ-QE). The PSQ-QE builds on the Possible Selves Questionnaire (PSQ; Oyserman, 1987; Oyserman & Markus, 1990), a self-report questionnaire used to assess variation in possible selves, including participants' goals and motivations as well as fears and anxieties (Markus & Nurius, 1986). Possible selves are the selves that individuals could become, or want to avoid becoming, and represent one aspect of the ability to conceptualize the self in the future. The PSQ asks participants to identify up to three expected selves and three to-be-avoided selves. The PSQ yields quantitative results that focus on participants' current perception of their expected and to-be-avoided possible selves. As a quantitative measure, the PSQ is coded for the balance between hoped for and to-be-avoided possible selves (Oyserman, 1987; Oyserman & Markus, 1990).

The PSQ-QE is an extension of the PSQ, adapted for use in our research program. The Qualitative Extension of the PSQ was developed to provide a method for eliciting narrative expressions of the subjective meaning and significance of participants' possible future selves. As part of the YDP, the PSQ is administered and scored as originally developed by Oyserman (1987; Oyserman & Markus, 1990). Thus, for the version of the PSQ used in YDP's Core II battery, participants were asked to complete the standard PSQ format, including being asked to identify up to three expected selves and three to-be-avoided selves. After completing the standard format, participants were then asked to complete two additional tasks. First, participants were asked to identify their most important possible self and then to provide an open-ended description of the meaning and significance of their most important future possible self, using the standard format for RDA's meaning and significance questions. In the interview format the meaning and significance questions are followed up by RDA's three neutral probes requesting secondary elaboration of the participant's meaning and significance description. The PSQ-QE thus extends the standard PSQ administration by providing an additional, readily available measure/method for capturing *and* evaluating the leading edge of transformational change in the subjective meaning and significance of their most important future possible self.

## Relational Data Analysis Procedures

The phases of the PSQ-QE RDA study reported here parallels those described in the LCI RDA study (Study 1; Lewis Arango et al., 2008, this issue) except for modifications noted.

# Results

## RDA Conceptual Analysis: PSQ-QE

The PSQ-QE analysis included 175 MIRs (one MIR two or three times (pre, mid, post) under two conditions (intervention,  $N = 43 \times 3$ , and nonintervention comparison,  $N = 23 \times 2$ ). Using the Content Open Coding (COC) procedure described in Study 1, five undergraduate coders identified an initial set of nine content categories. (A complete description is available from the corresponding author.)

## RDA Theoretical Analysis: PSQ-QE

*Task 1: Theoretical Open Coding (TOC): Identifying future possible selves content categories.* The theoretical coders (two members of the PSQ-QE RDA study research team) reviewed the COC content categories to gain an understanding of what the content coders identified as unique properties. The theoretical coders then analyzed and synthesized the content descriptions of the categories with respect to their understanding of psychosocial developmental life course theory (focusing on the future possible self) as relevant to the research context at hand.

The theoretical coding for the PSE-QE resulted in the identification of three theoretical categories (Self-Oriented, Other-Oriented, and Other/Self) and six associated subcategories (Self-Satisfying, Self-Actualizing, Altruistic, Mixed Other/Self, Self-Satisfying/Altruistic, Self-Actualizing/Altruistic). Table 1 presents the property descriptions of the three categories identified for PSQ-QE. The organizational structure of the categories and subcategories was moderately complex. Figure 1 presents the PSQ-QE Structural Tree Chart (STC).

*Task 2: Identifying relations between categories—future possible selves.* In the case of the PSQ-QE (in contrast to the LCI), the theoretical coders were asked to generate theoretically meaningful hypotheses about relations among categories derived from intervention response data *not* drawn from the psychosocial development and life course literatures from which the LCI was drawn. That is, in the PSQ-QE RDA analysis, at least with respect to the qualitative extension being used, the theoretical coders occupied a middle ground between theoretically neutral and theoretically saturated. In the context of the study design, the use of the PSQ-QE provided an opportunity to explore the transtheoretical utility of RDA. That is, the coders' task was to conduct a theoretical analysis of open-ended response data

**Table 1**  
**Property Descriptions of the Three Categories for the PSQ-QE**

Property Description	Sample Responses
<p>Don't Know/No Answer</p> <p>The theoretical coders identified as a distinct conceptual category a subset of MIRs characterized by the absence of an articulate response to the PSQ-QE meaning and significance question. This type of MIR was grouped together on the basis of similarity of absence of theoretically meaningful content. That is, this category was classified as a conceptually meaningful content category (i.e., everyone's response shared a similar specific content) but not a theoretically meaningful category of future possible self</p>	<p>A number of respondents either provided no answer (e.g., "None") or answered the question by indicating that they did not have an articulate response stating, "I don't know," "Never thought about it," "No comment," "How would I know?"</p>
<p>1. Self-Oriented</p>	<p>The unique property of the Self-Oriented category was that it included descriptions of the meaning and significance of future possible selves that were characterized as self-oriented (i.e., included explicit references to the meaning and significance of the future possible self to one's self) and included no reference to its meaning and significance to others. The Self-Oriented category included two subcategories, Self-Satisfying and Self-Actualizing</p>
<p>Self-Satisfying</p> <p>The unique properties of the Self-Satisfying subcategory was that it did not include any reference to the meaning and significance of future possible selves to others; that it did include explicit references to the meaning and significance of future possible selves to the self; and that these included references to striving for individual or personal pleasure or satisfaction (for the self) that tended to be present-oriented and described in terms that could be characterized as hedonistic, materialistic, or self-gratifying in orientation (or avoiding the loss of the same). Because all the MIRs that were included in the Self-Satisfying category also meet the criterion for the Self-Oriented, the theoretical coders identified Self-Satisfying as a subcategory of the Self-Oriented</p>	<p>In response to the question What would it mean to realize your most important future possible self, one respondent answered by saying, "It would make me very happy." Another respondent answered the question by saying, "Having money and a good job is important. You can do whatever you want. You feel better about yourself." Another said, "I want to be a successful lawyer. I want the freedom that money gives you. It's very important to me." Another responded, "I would like to be intelligent and analyze stuff. Looks and possessions are not as important as intelligence. They don't last." Yet another said, "NFL player because of the fame, hard work, lots of stuff. I like excitement, challenge." Finally, one respondent reported, "Being single. I don't want to be tied down! That is very important because I have seen others tied down and I don't want that."</p>

*(continued)*

**Table 1 (continued)**

Property Description	Sample Responses
<p><b>Self-Actualizing</b></p> <p>The unique properties of the Self-Actualizing subcategory was that it did not include any reference to the meaning and significance of future possible selves to others; that it did include explicit references to the meaning and significance of future possible selves to the self; and that these included references to striving for individual or personal pleasure or satisfaction (for the self) all or some of which tended to be future-oriented and described in terms that could be characterized as involving striving for the realization of one's potential (i.e., self-realization). Thus, some respondents who described the meaning and significance of their most important future possible self in terms that could be characterized as self-satisfying also included additional content making explicit reference to ways of obtaining gratification, personal pleasure, or satisfaction (for the self), which tended to be further characterized as self-actualizing and/or oriented toward long-term future goals (or avoiding the loss of the same or both). Response data classified under the Self-Actualizing category thus shared at least one of two (or both) additional properties not shared with the Self-Satisfying category</p>	<p>In response to the question What would it mean to realize your most important future possible self, one respondent answered, "I want to be a famous DJ or MC. It means everything to me. It's my life. Brings me happiness of joy. Without this, I wouldn't know who I am. It is important because it defines my character, who I am." Another reported, "Playing basketball is my dream. I am good at it and I don't want to waste my talent." In the relational domain, a respondent observed, "I want to be a good mother and wife. It is a goal that I was meant to fulfill. It would bring me great joy in accomplishing this. This is very important because it is the way that I was raised. I feel that family values are very important to me." Finally, "Being a basketball player. It is my dream and if I succeed, I will have reached a lifetime goal. It is important because I can say that I made it and nothing held me back."</p>
<p><b>2. Other-Oriented</b></p>	<p>The theoretical coders thus identified the structural organization within the category of Self-Oriented as a nested hierarchical structure (i.e., a nested hierarchy) with the category of Self-Actualizing being nested within the category of Self-Satisfying</p>
<p>The unique property of the Other-Oriented category was that it included descriptions of the meaning and significance of future possible selves that could be characterized as other-oriented (i.e., included explicit references to the meaning and significance of the future possible self to another or others and included no reference to its meaning and significance to the self).</p>	

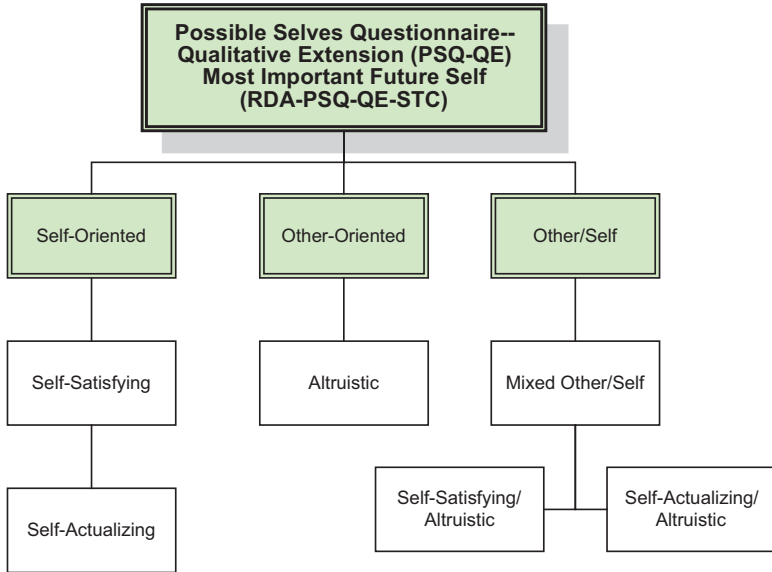
(continued)



**Table 1 (continued)**

Property Description	Sample Responses
<p>Altruistic</p> <p>The unique property of the Altruistic category was that it included descriptions of the meaning and significance of future possible selves that were characterized in terms of gain, satisfaction, or benefit of the individual's future possible self to others (or avoiding the loss of the same) and included no reference to its meaning and significance to self</p>	<p>In response to the question of what it would mean to realize your most important future possible self, one respondent answered by saying, "It would make my mom and my family proud of me." Another answered the question by saying, "I want to be a lawyer because I want to be able to support my family." Another said, "Being a good mother. Being there for kids, listening, having an open relationship, teaching them right from wrong. I did not have a mother to teach me all of this." Concerning a sports career, a respondent reported that "This is what my mom did and it will make her proud to see that one of her sons took up the sport and made something of it." Another responded, "It's important to be a good father. A good father is always there for his kids. Because without my father I would have turned out to be a real bad kid."</p>
<p>3. Mixed Other/Self</p> <p>The unique property of the Mixed Other/Self category was that it was a composite category in which all MIRs contained at least two distinct descriptions of the meaning and significance of future possible selves, and that these descriptions included at least one description characterized as Self-Oriented (any subcategory) and at least one description characterized as Other-Oriented. The theoretical coders further identified two mixed subcategories, Self-Satisfying/Altruistic and Self-Actualizing/Altruistic. The Self-Satisfying/Altruistic included responses that were characterized by various combinations of self-satisfying and altruistic descriptions of the meaning and significance of future possible selves or self-actualizing and altruistic descriptions</p>	<p>In response to the meaning and significance question, for example, one respondent observed, "It is important to me to be a successful person. I also want to help others when I can, positive. I want other kids to look up to me." Another young person said, "I want to be a social worker because it would make me feel good about myself because I would be helping others. I like to help others." Another said, "Being a basketball player is important to me. It means a lot because I told my mom that what I want to be, and she wants me to be that." One noted, "Be a zoologist. It means a lot to me. I love animals. Always have and always will. Very important to me." Yet another said, "I would like to be a better person overall. Although I cannot control people's feeling towards me, I try not to do things that cause people to dislike me. When I do I feel better about myself." Another said, "I want to be a lawyer. It means I would be proud of my accomplishments. I would be the first in the family. I would be proud of myself. I would have a career and have money. I would be able to support myself and not depend on others."</p>

**Figure 1**  
**Possible Selves Questionnaire (PSQ) Structural Tree Chart (STC)**



collected from a particular theoretically driven program of intervention research, one broadly in the tradition of psychosocial developmental and life course theory (in contrast to, e.g., cognitive or behavioral theory) and therefore oriented toward change in self/identity processes (rather than change in cognitive or behavioral processes), but in this case using a measure drawn from a theoretical tradition different from (though related to) the theoretical tradition from which they were identified and selected. In this context, the task of the theoretical coders (i.e., generating hypothesized relations among the categories plausible from the psychosocial developmental life course perspective to results obtained with a measure from a different literature) proved unproblematic, that is, *not* unduly complicated by its transtheoretical nature.

For the PSQ-QE, the theoretical coders' review and discussion of the relation among (between/within) the theoretical categories and subcategories yielded consensus with respect to a number of working hypotheses about the pattern of relations among the categories and subcategories. In reaching the consensus, the coders found it useful to focus on generating

testable hypotheses with respect to relations among the categories that were consistent with the main goals of the project, the strengths and limitations of its measures and research design, and *not* inconsistent with a psychosocial developmental life course approach.

The structural organization of the relations *between* the three qualitatively different categories (Self, Other, Other-Self) was tentatively identified as flat (nonhierarchical). In the case of these three categories (Self, Other, Self/Other Mixed), although the theoretical coders considered many alternatives, in the end, they were unable to generate a justification for identifying any one or any subset of the categories as more developmentally advanced than the other categories that they could agree was theoretically compelling (from the perspective of a guiding theory). In the absence of a consensus regarding a theoretically compelling justification for any of the proposed structural hierarchies to define a developmental directionality and in the absence of evidence to the contrary, the theoretical coders tentatively hypothesized the structural organization of the relations between the categories as nonhierarchical.

The structural organization of the properties *within* each of the three categories was identified in terms of the unique structural arrangement of the properties and/or associated subcategories within each category. For the within-category properties, the theoretical coder had no problem reaching a consensus with respect to the Self-Oriented category, which was specifically identified as having two subcategories (Self-Satisfying and Self-Actualizing) with a structural organization that was hierarchical and nested (with Self-Actualizing as a nested subcategory of Self-Satisfying). The coders specified a developmental directionality for the hierarchy. Specifically, the self-actualizing subcategory included the property of self-actualization (i.e., the realization of one's potentials) in addition to (or perhaps more accurately, as a form of self-satisfaction (i.e., the subcategory included self-actualization as a form of self-satisfaction), a structural organization the theoretical coders considered consistent with the broadly epigenetic orientation of psychosocial developmental theory, particularly as it relates to adolescence as a developmental period characterized by both a cognitive developmental shift from childhood egocentrism to the more sociocentric cognitive orientation of adulthood *and* a more advanced "self-structure," a sense of identity as self-constructed, coherent, and dynamic.

The theoretical coder similarly had no problem reaching a consensus with respect to the Other-Oriented category, which was specifically identified as having one subcategory (Altruistic) and the Other-Self category, which was specifically identified as also having one subcategory (Mixed Other/Self), a composite category that included both Self-Oriented responses

(any subcategory) and Other-Oriented or Altruistic. The structural organization of the two mixed subcategories of the Mixed Other/Self category (Self-Satisfying/Altruistic and Self-Actualizing/Altruistic) was identified by the theoretical coders as flat (nonhierarchical). For these two categories, the theoretical coders could *not* reach a consensus with respect to a theoretically meaningful justification for a hierarchy from the perspective of a psychosocial developmental life course approach. Responses within the two subcategories were characterized by various combinations of self-satisfying and altruistic descriptions of the meaning and significance of future possible selves *or* self-actualizing and altruistic descriptions with no theoretically meaningful basis for hypothesizing either of the subcategories (Self-Satisfying/Altruistic and Self-Actualizing/Altruistic) as more developmentally advanced.

Finally, the theoretical coder had no problem reaching a consensus with respect to the *least* developmentally advanced category (from the perspective of a psychosocial developmental life course approach) across all the categories and subcategories, that is, the three PSQ-QE theoretical categories of future possible self (Self-Oriented, Other-Oriented, and Other/Self) and six associated subcategories (Self-Satisfying, Self-Actualizing, Altruistic, Mixed Other/Self, Self-Satisfying/Altruistic, Self-Actualizing/Altruistic). For these categories, although the theoretical coders were able to generate theoretically meaningful (though sometimes conflicting) justifications for conceptualizing other categories as developmentally advanced, they were unable to generate a theoretically meaningful justification (from the perspective of a psychosocial developmental life course approach) for conceptualizing *any* of the other categories as *less* advanced than the Self-Satisfying category. Consequently, for the purposes of generating theoretically derived research hypotheses within the context of the goals of the project (and its measures and research design), the theoretical coders identified the Self-Satisfying category as the least developmentally advanced category across all the categories and subcategories.

*Task 3: Identifying mechanisms of change—future possible selves.* Consistent with psychosocial developmental life course theory, the theoretical coders adopted the view that human agency can be numbered among the multiple determinants that play an important role in which life course pathways are followed and how they are followed. For the basic categories of future possible selves (Self-Oriented, Other-Oriented, Other/Self), the theoretical coders did not generate specific research hypotheses concerning developmental (or other noncontingent) transitions in the directionality of qualitative changes. On the other hand, because the data were collected

using a quasi-experimental nonintervention comparison design in an intervention the theoretical coders did consider it theoretically meaningful to generate specific research hypotheses concerning the (contingent) directionality and participation in the intervention condition, namely, a significant and positive association between participation in the intervention and positive developmental change in future possible selves.

## **RDA Research Analysis**

### **Research Analysis Task 1: Reliability and Validity Analyses of Coding Categories (PA-TCC)**

*Results—Task 1, Step 1: Estimating intercoder reliability.* The degree of agreement between the second set of five “theory neutral” coders was calculated separately to provide an estimate of intercoder reliability for *each* of the identified categories, yielding the following result. Intercoder agreement among the five theory neutral coders for *each* of the specific categories was moderate to high, with a range of 84.4–95.4% with the highest agreement for the Self-Oriented, Self-Satisfying category. Specifically, the average percentage agreement across each of the three identified future possible self categories and subcategories were Self-Actualizing category, 95.4%; Self-Satisfying, 87.5%; Altruistic, 85.6%; Self-Satisfying/Self-Actualizing, 92.5%; and Self-ctualizing/Self-Satisfying, 84.4%, evidence for a relatively high intercoder reliability for each identified theoretical category and subcategories.

*Results—Task 1, Step 2: Estimating construct validity.* The overall average percentage agreement *across all* of the three future possible selves categories and subcategories was close to 90% percent (89.1%), providing construction validation evidence for the theoretical expectation that each of the identified categories has a unique (nonoverlapping) property. The average intercoder agreement thus provided a high and positive global index of the “goodness of fit” of the theoretically hypothesized set of relations between the identified theoretical categories and the actual relation between them. An inspection of the intercoder agreements for each of the categories (as reported under Step 1) indicated that these results were not only consistent with the pattern of LCI results reported in Arango, Kurtines, and the like (2008, this issue), but also that they tended to be somewhat consistently higher than those reported for both the LCI index of Personal Identity and Present Life Turning Points.

*Results—Task 1, Step 3: Estimating criterion-related (concurrent) validity.* The Pearson Correlation between the theoretical coders' (the theory laden, open coding condition) and the third set of coders (the theory neutral, classification coding condition) was,  $r(95) = .862, p < .000$ , evidence for high concurrent (external) validity for the identified theoretical categories. With the documentation of an acceptable level of reliability and concurrent (external) validity for the theoretical categories, the research analysis moved to Task 2.

*Results—Task 2: Quantitative Evaluation of Qualitative Research Hypotheses—PSQ-QE Within and Between Group Analyses (RMANOVAs).* Because the theoretical researchers considered it theoretically meaningful to conceptualize qualitative change in participants' future possible selves responses from Self-Satisfying to Self-Actualizing, Altruistic, or any of Other/Self subcategories as a positive developmental transformation, an RMANOVA was used to investigate the overall pattern of positive qualitative change from self-satisfying to these categories and subcategories.

RMANOVAs used to test for trends in overall positive qualitative change were conducted by creating a dichotomous composite dependent variable to provide an estimate of the association between participation in the intervention condition and qualitative changes in the hypothesized positive direction, that is, from a self-satisfying response to a self-actualizing response, altruistic response, mixed/other subcategory. Specifically, a dichotomous index of overall qualitative positive change, Overall Positive Qualitative Change (OPQC), was created by recoding the categories and subcategories whose value could vary from 1 = Self-Satisfying, and 2 = all Self-Actualizing, Altruistic, and Actualizing/Altruistic combinations. The OPQC thus provided a global index of the likelihood of an increase (or decrease) in positive qualitative change in future possible selves over time (pre, post, EOYF) and whether positive (or negative) change was associated with the intervention condition.

### **Positive Intervention Gains: Pre-Post Change (Intervention vs Comparison)**

A  $2 \times 2$  (Time  $\times$  Condition) RMANOVA, conducted using OPQC as the dependent variable, yielded a nonsignificant main effect for Time, Condition, and Time  $\times$  Condition. There was a significant Time  $\times$  Condition  $\times$  Gender interaction effect, Roy's  $\Theta = .167, F(1, 55) = 9.187, p < .004$  and Time  $\times$  Condition  $\times$  Gender  $\times$  Ethnicity interaction. Roy's  $\Theta = .244, F(1, 55) = 13.396, p < .001$ . The significant three-way interactions provided preliminary evidence of Gender and Ethnicity as significant moderators of the intervention effect, at least for the PSQ.

A visual check of the interaction patterns indicated that for the intervention condition the direction of the basic pattern of change was positive with qualitative change for both genders and all three ethnic groups tending to in a positive direction, that is, Self-Satisfying to Self-Actualizing/Altruistic/Mixed. Further, the main source of the moderation of pre- to postchange in intervention response was due to differences in the pattern of change in the nonintervention condition pre to post (over one nonintervention semester) relative to the pattern of change in the CLP condition. For example, the direction of the pattern of change in the nonintervention comparison condition from pre to post was negative, with the direction of qualitative change tending to be from Self-Actualizing/Altruistic to Self-Satisfying. This basic pattern, however, varied across gender or ethnicity, with participants of both genders and the three ethnic groups displaying differential patterns of change over the semester. For example, the pattern of change in the nonintervention comparison condition showed a pattern of moderated change across ethnic groups. Specifically, white non-Hispanics and black/African Americans in the nonintervention comparison condition tended to move in a negative direction over the semester while Latin/Hispanic participants tended to move in a positive direction.

### **Positive Intervention Maintenance: Pre, Post, Year-End Follow-Up Change, Intervention Condition: Within Group Analysis**

The second RMANOVA ( $2 \times 3$ ) was conducted using the participants in the CLP condition to evaluate whether intervention change in the positive direction that took place from pre to post was maintained at the end-of-year follow-up and whether the maintenance of the change was moderated by the exogenous variables, Gender and Ethnicity. Because the analysis of intervention maintenance involved evaluating patterns of change over more than two time points, (i.e., Pre, Post, EOYF), tests of within-subject contrasts for the repeated factor Time and time by Gender and Ethnicity interaction effects were conducted for the OPQC index. The use of tests of within-subject contrasts allows for modeling patterns of individual change over time (e.g., within group change assessed at multiple times). In modeling change, within-subject contrasts for the repeated factor evaluate the curvilinear components of change (i.e., quadratic and cubic) as well as the linear component of change. The within-subject contrasts test whether the model that best fits the curvilinear (i.e., nonlinear) component of the pattern of change (if any) was quadratic (curvilinear with a single change in direction) or cubic (curvilinear with two or more changes in direction). Because the data from this study

comprised of three assessment points, the within-subject contrasts only tested for a linear and quadratic component.

The trends for the direction of qualitative change as assessed by OPQC were (a) positive from pre to post and maintained at the end of year follow-up, and (b) significantly moderated by gender and ethnicity. For example, although both the linear and quadratic components of main effect for the repeated factor Time, the Time  $\times$  Gender, and the Time  $\times$  Ethnicity Interaction were not significant, there was a significant linear component for the Time  $\times$  Gender  $\times$  Ethnicity interaction effect,  $F(2) = 3.301, p < .048$  in the hypothesized positive direction. More significant, the quadratic component was *not* significant indicating that there was no significant change in the Year-End Follow-Up from the positive direction of the Pre to Post Test change, that is, that the positive directional change was maintained at Year-End Follow-Up.

The multivariate tests of significance for the effects of the repeated factor time and the time by condition, gender, ethnicity interaction effects revealed the same pattern of change for the between group differences as for the within group contrasts. Specifically, the main effect for the Time, Time  $\times$  Gender, and Time  $\times$  Ethnicity interactions were not significant, but the Time  $\times$  Gender  $\times$  Ethnicity interaction was significant, Roy's  $\Theta = .205, F(2, 37) = 3.80, p < .032$ . A visual examination of the interaction patterns indicated that for the intervention condition, the positive direction of the pattern of change from post to Year-End Follow-Up was maintained. Visual examination showed that although the basic trends did not continue to increase from post to follow-up, they did not decrease, that is, the gains were maintained and a significant Time  $\times$  Gender  $\times$  Ethnicity interaction indicated that this pattern was moderated by gender and ethnicity.

Visual examination further revealed that the main source of the moderation effects of pre to post change was from the differences in the pattern of change by gender and ethnicity. The findings were further suggestive regarding the issue of amenability to treatment, which concerns the identification of subgroups of individuals in a population likely to be most amenable to intervention (Kazdin, 1995). Although preliminary, the Time  $\times$  Gender  $\times$  Ethnicity interaction for females, for example, indicates that Black/African American females, tended to decline most and to maintain those losses. The Time  $\times$  Gender  $\times$  Ethnicity Interaction for males, on the other hand, indicates that Black/African males tended to gain most in the intervention and maintain those gains. Latino/Hispanic males, in contrast, changed little from the intervention or between posttest and year-end follow-up. In addition, Latino/Hispanic males tended to begin at the highest level and remain at that level.



## Conclusion

The study reported in this article, undertaken as part of an MLC Stage II program evaluation of CLP, provided evidence for the reliability and validity of the qualitative measure under development (the PSQ-QE) as well as the utility of unifying qualitative and quantitative research methods for evaluating intervention programs. Specifically, as discussed in Kurtines, Montgomery, Ferrer Wreder, et al. (2008, this issue), when analyzed using RDA, response data from the PSQ yielded theoretically meaningful categories with robust levels of reliability and construct and concurrent validity. Additionally, the pattern of qualitative change for participants in the intervention condition, the CLP, tended to be positive, significant, and in the hypothesized direction relative to the comparison group and significantly moderated by gender and ethnicity.

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