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The utility of an integrated qualitative/quantitative data analytic strategy (IQ-DAS) to evaluate the impact of youth development interventions on positive qualitative change in the life course

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

THE UTILITY OF AN INTEGRATED QUALITATIVE/QUANTITATIVE DATA
ANALYTIC STRATEGY (IQ-DAS) TO EVALUATE THE IMPACT OF YOUTH
DEVELOPMENT INTERVENTIONS ON POSITIVE QUALITATIVE CHANGE IN
THE LIFE COURSE

A dissertation submitted in partial fulfillment of the

requirements for the degree of

DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Lisa Lewis Arango

2003

To: Dean Arthur W. Herriott
College of Arts and Sciences

This dissertation, written by Lisa Lewis Arango, and entitled The Utility of an Integrated Qualitative/Quantitative Data Analytic Strategy (IQ-DAS) to Evaluate the Impact of Youth Development Interventions on Positive Qualitative Change in the Life Course, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.


Wendy Silverman

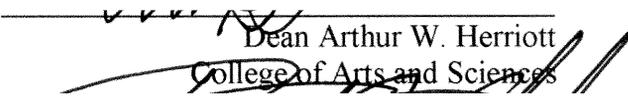

Patricia Telles-Irvin

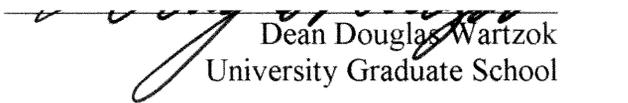

Mary Levitt


William M. Kurtines, Major Professor

Date of Defense: March 28, 2003

The dissertation of Lisa Lewis Arango is approved.


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Florida International University, 2003

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DEDICATION

I dedicate this dissertation to my husband Ed and my beautiful daughter Ashley Madeleine. To you Ed, I am eternally grateful for all the love, support, words of encouragement, your faith in me, your patience, your willingness to make sacrifices to allow me to pursue my goals, and the confidence you have always had in me when I needed it most. Without you I could have never begun this life course, much less come this far. To Ashley, you are my purpose and my heart. Thank you for coming into my life and showing me how to appreciate every moment that God has given us.

“Life grants us the opportunity to write our own destiny. Our fate is not a matter of chance; it is how we decide to spend our lives. Let us choose to give our lives to something that will outlast us..”

Author Unknown

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I would also like to thank several other people in my life that have played such an important role in my development toward becoming who I am. First, I would like to thank my parents Rebecca Strickland and Bob Lewis, and my brother Paul Lewis and sister Jennifer Lewis. It was within my family that I first learned my potential and was given the foundation for striving toward achievement. I would also like to thank Dr. Michelle Reardon and Ron, as it was within this family that I learned, if I persisted, even in the face of adversity, I could become even more than I thought I could be. Finally, I would like to thank God for the strength, courage, wisdom, and grace to become that person.

ABSTRACT OF THE DISSERTATION

THE UTILITY OF AN INTEGRATED QUALITATIVE/QUANTITATIVE DATA ANALYTIC STRATEGY (IQ-DAS) TO EVALUATE THE IMPACT OF YOUTH DEVELOPMENT INTERVENTIONS ON POSITIVE QUALITATIVE CHANGE IN THE LIFE COURSE

by

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Florida International University, 2003

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This study reports one of the first controlled studies to examine the impact of a school based *positive* youth development program (Lerner, Fisher, & Weinberg, 2000) on promoting qualitative change in life course experiences as a positive intervention outcome. The study built on a recently proposed relational developmental methodological metanarrative (Overton, 1998) and advances in use of qualitative research methods (Denzin & Lincoln, 2000). The study investigated the use the Life Course Interview (Clausen, 1998) and an integrated qualitative and quantitative data analytic strategy (IQ-DAS) to provide empirical documentation of the impact the Changing Lives Program on qualitative change in positive identity in a multicultural population of troubled youth in an alternative public high school. The psychosocial life course intervention approach used in this study draws its developmental framework from both psychosocial developmental theory (Erikson, 1968) and life course theory (Elder, 1998) and its intervention strategies from the transformative pedagogy of Freire's (1983/1970).

Using the 22 participants in the Intervention Condition and the 10 participants in the Control Condition, RMANOVAs found significantly more positive qualitative change in personal identity for program participants relative to the non-intervention control condition. In addition, the 2X2X2X3 mixed design RMANOVA in which Time (pre, post) was the repeated factor and Condition (Intervention versus Control), Gender, and Ethnicity the between group factors, also found significant interactions for the Time by Gender and Time by Ethnicity.

Moreover, the directionality of the basic pattern of change was positive for participants of both genders and all three ethnic groups. The pattern of the moderation effects also indicated a marked tendency for participants in the intervention group to characterize their sense of self as more secure and less negative at the end of their first semester in the intervention, that was stable across both genders and all three ethnicities. The basic differential pattern of an increase in the intervention condition of a positive characterization of sense of self relative to both pre test *and* relative to the directionality of the movement of the non-intervention controls, was stable across both genders and all three ethnic groups.

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I. INTRODUCTION

There has been a growing interest in developing intervention programs designed to affect the lives of young people. This focus is appropriate because several epidemiological studies in North America and Europe indicate disturbing trends in the levels and patterns of youth problem behaviors (e.g., European Monitoring Center for Drugs and Drug Addiction, 2000; Johnson, O'Malley, & Bachman, 1998). While many young people are able to successfully navigate the challenges and transitions posed in adolescence (Arnett, 1999), an increasing number of contemporary youth experience significant risk for a variety of negative developmental outcomes (Compas, Hinden, & Gerhardt, 1995; Côté, 1994; Dahlberg, 1998). Even in the most privileged countries, young people are often subject to a number of risks that can hinder the fulfillment of their best potentials (Van Dijk & Mayhew, 1992; United Nations Office for Drug Control Mrazek & Haggerty, 1994). Consequently, there has been an upsurge in attention and efforts to develop interventions for the treatment and prevention of problem behaviors in youth and for promoting positive youth development (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 1999; Kröger, Winter, & Shaw, 1998; Sloboda & David, 1997; World Health Organization, 2000).

These efforts have been successful in developing treatment intervention programs to treat behavior problems and other negative developmental outcomes in youth. For example, successful treatment interventions have been developed for reducing behavior problems in youth by changing ecosystemic domains (e.g., family functioning) that create and maintain problem behavior in youth (Kurtines & Szapocznik, 1996; Santisteban, Coatsworth, Perez-Vidal, A., Kurtines, Schwartz, LaPerriere, & Szapocznik, in press).

Efforts have also been successful in developing prevention intervention programs to prevent negative developmental outcomes (including problem behaviors), with the risk-and-protective-factors model being one of the most widely used approaches within prevention science (Hawkins, Catalano, & Miller, 1992; Mrazek & Haggerty, 1994). These prevention intervention efforts have been successful in reducing risk factors and increasing protective factors associated with negative developmental outcomes and in suggesting interventions to change these factors for the better (e.g., Dishion, French, & Patterson, 1995; Hawkins et al., 1992; Steinberg, Mounts, Lamborn, & Dornbusch, 1991).

Do Youth Development Programs Change the Lives of Troubled Youth?

More recently, there has been a growing recognition that interventions need to do more than "treat" problem behaviors (i.e., symptoms) or "prevent" negative developmental outcomes (Lerner, Fisher, & Weinberg, 2000). As a result, a growing literature focusing on interventions that seek to *promote positive development* has emerged that are usually termed positive development programs/interventions or youth development programs (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 1999).

Recent reviews of youth development programs that promote positive youth development (see, for example, Catalano, et al., 1999 review of 25 well-evaluated programs) reveal an accumulation of evidence that the programs have an impact on young people and that the literature has made considerable strides, including methodological rigor and sophistication. The answer to the question posed by the heading of this section is, we believe, "Yes" but it is a qualified yes because there are some remaining unanswered questions.

Despite the consistent pattern of overall positive findings in the literature important gaps in research-based knowledge with respect to the impact of youth development interventions continue to exist. The Catalano review (1999), for example, reported only relatively short-term (pre, post, + follow-ups) studies with outcomes evaluated in terms magnitude of short-term quantitative change in continuous variables relative to a comparison or control condition. Indeed, consistent with criteria common to the intervention field, this was a core component of the definition of “well-evaluated.”

This emphasis on short-term outcome studies using quantitative measures and variable oriented data analytic strategies, though useful in many way, places methodological limits on the types of questions we can ask and the types of answers we can obtain when evaluating intervention programs in general, but particularly so when evaluating positive development programs that target troubled youth. That is, in view of the ways that the outcome goals of positive development programs that target troubled youth differ from the outcome goals of treatment and prevention programs that target the same population, the use of methods and criteria that are appropriate for these types of programs places constraints or limits on the richness of the phenomena that can be captured and evaluated when they are applied to positive development programs that target troubled youth.

This study arose out of our efforts in working with the young people who participate in the Youth Development Project (YDP; <http://www3.fiu.edu/ydp>). The objective of the Youth Development Project is to foster positive youth development by developing, refining, and implementing programs for promoting positive development. In our role in implementing YDP as practitioners and educators, we work with young people who come

to us in need of change. They find their lives moving in directions they do not necessarily want them to move, and in desperate need of help to turn their lives around. As practitioners and educators, we work to create contexts in which they can find themselves and reconnect with their lives and families. Our goal is to help them transform the negative direction of their life pathways – to turn their lives around and get them launched in a positive direction. That is our goal, and as practitioners we often feel that our efforts succeed. As researchers, however, we find it difficult to document our successes. The quantitative measures that we use in evaluating our programs capture increases in indices of positive development and decreases in behavior problems and risk factors, and the data analytic techniques we use, evaluate the significance of this quantitative change, but documenting the type of qualitative life change that is at the heart of our efforts has proved to be extremely complex and difficult.

Nevertheless, the growing recognition of the importance of the availability of effective positive development programs that target troubled youth (Lerner, et al. 2000) calls attention to the need for the development of research methods appropriate for evaluating such programs. Because the goals of such programs include changing the lives of participants in the programs, the challenge of developing research methods appropriate for evaluating life course change raises methodological issues that go far beyond evaluating positive development programs for troubled youth. As the literature review indicates, the issues are broad and complex, touching on the very nature of developmental change and how it is to be understood.

We have described these issues in detail elsewhere (Kurtines, Lewis-Arango, Kortsch, in press) and will only outline them in this study. The aim of this research,

which was more limited in scope, is to continue the previous work that the investigator has done on developing and refining a qualitative measure and scoring method for indexing the type of phenomena we consider important in evaluating our programs for troubled youth. The qualitative measure the investigator has been developing and refining is explicitly *conceptualized* as indexing the subjective meaning and significance of participants' life course experiences and is *operationalized* as an index of qualitative change. This work draws on an already existing measure, the Life Course Interview (Clausen, 1998), as adapted for use in our research program.

As part of this program of research, the investigator (Lewis Arango, 2001) previously conducted a pilot study to evaluate the feasibility of using a Life Course Interview (LCI) with a difficult to work with population of adolescents in a school-based setting. That study not only provided preliminary but very promising support for both the feasibility and utility of using the qualitative measure (LCI), it also provided preliminary evidence with respect to the positive impact of the particular intervention that we have been developing, i.e., the Changing Lives Program.

This study draws on our ongoing program of research developing and refining a framework that is intended to provide a set of integrated data analytic strategies (IQ-DAS; Integrated Qualitative/Quantitative Data Analytic Strategy) for use in the quantitative (causal) analysis of variational change in instrumental action and the qualitative (pattern) analysis of transformational change in expressive action (Kurtines, Lewis Arango, Kortsch, in press). The previous study (Lewis Arango, 2001) also provided evidence for the feasibility of using this framework (i.e., IQ-DAS) in evaluating programs for troubled youth as well as for the use of Strauss and Corbin's (1998) "open"

and “theoretical” coding and the “method of constant comparison” (as adapted for our research) in coding responses to qualitative measures such as the LCI. Using methods that we have been developing for identifying and evaluating qualitative differences in participants’ current life status and data analytic strategies for integrating quantitative and qualitative methods in evaluating positive life course change that we have been developing, the feasibility study provided preliminary evidence that improvement in this particular intervention (i.e., the Changing Lives Program) was associated with positive qualitative (transformational) change in participants’ evaluation of the meaning and significance of their life course experiences, including transformational change in the basic order, organization, and coherence of their sense of self. These results provide the springboard for the current study.

The Current Study

The overall purpose of the current study was to investigate further and extend these findings by addressing the basic limitations of the feasibility study, by using a between groups design, and a more refined version of the integrated qualitative/quantitative strategy (i.e., the IQ-DAS) for analyzing qualitative data. More specifically, this study used a quasi-experimental short-term (two semester) longitudinal design that included an experimental condition and a comparison control condition to analyze the impact of an intervention targeted at promoting long-term positive qualitative change in the life course trajectory by using a qualitative measure to evaluate such change through the application of an integrated data analytic strategy.

II. LITERATURE REVIEW

Theoretical Issues in Understanding Developmental Change

Developmental theory has historically emphasized developmental change as general, universal, and unidirectional, involving continuous movement toward a higher level of functioning (Colby, 1998), emphasizing the unfolding and emergence of an entity by a mechanism of stage-like progression. As Magnusson and Stattin (1998) observed, developmental theory has also tended to focus on one or a few aspects of individual development (e.g., cognition, intelligence, personality) utilizing methodological approaches that investigate the nature of the relationship among specific types of variables (i.e., a variable oriented approach).

More recent approaches to understanding developmental change (e.g., life span theory in developmental psychology, cf. Baltes, Lindenberger, and Staudinger, 1998) have emphasized the organism's plasticity (Lerner, 1995), adopting a more holistic or person-centered perspective (Dixon & Baltes, 1986), and a view of development as selective age-graded change in adaptive capacity across the life span from conception to old age (Baltes, Lindenberger, and Staudinger, 1998). Other life-span approaches have begun to recognize that diversity in developmental trajectories may be related to variation in roles (e.g., gender, race), social context, or social order (Giele & Elder, 1998). In general, life-span theorists view developmental change as a life-long process, which includes both the individual and the environment with varying foci such as, for example, the proximal processes that operate between the organism and the environment over time (Bronfenbrenner, 1998), the interplay of biology and culture (Baltes, Lindenberger, and Staudinger, 1998), or the reciprocal process that occurs between the person and the

environment (Magnusson & Stattin, 1998). Life course theory (Elder, 1998), dovetails with these types of emerging perspectives of development and views individuals as “producers” or contributors to their own development (Brandtstaedter & Lerner, 1999; Lerner & Busch-Rossnagel, 1981); and holds that life transitions link human agency and life contexts (Elder, 1998).

The emergence of multiple approaches to understanding developmental change has called attention to the need for advances in research designs, methodology, and data analytic techniques consistent with the defining properties of these approaches (Overton, 1998; Bronfenbrenner, 1998). In life span developmental research this may include methods that look at age related inter-individual change and the role of historical context (Baltes, Lindenberger, and Staudinger, 1998), methods that seek to explain and understand, rather than simply predict by identifying the underlying processes or mechanisms of developmental change (Magnusson & Stattin, 1998), and research designs that successively confront theory and data in an iterative process to formulate hypotheses in the discovery mode that are susceptible to scientific assessment in the verification mode (Bronfenbrenner, 1998). These developments have contributed to the growing recognition that advances in our understanding of developmental change is facilitated by advances at all levels of understanding, including meta-theoretical, theoretical, methodological, as well as factual (Overton, 1998).

Meta-theoretical Issues in Understanding Developmental Change

In a recent review of the concept of development and developmental methodology, Overton (1998) outlined the main features of the neo-Darwinian metanarrative that has played a central role in shaping our understanding of

developmental change and the evolution of developmental methodology. He also outlined the main features of a metanarrative, the relational developmental metanarrative, that provides an alternative for the understanding and explanation of developmental change.

Because this relational developmental metanarrative provided the springboard for the work that we have been doing on refining and extending existing qualitative methods for integrating quantitative and qualitative methods in the evaluation of intervention outcome (Kurtines, Lewis Arango, Kortsch, in press), this section will briefly describe the main features of the neo-Darwinian metanarrative and some of the ways that the relational developmental metanarrative seeks to deal with problems generated by the neo-Darwinian metanarrative (Overton, 1998, p. 124).

With respect to the scientific study of human development, the most significant meta-theoretical concern associated with the neo-Darwinian metanarrative has to do with the particular perspective it adopts with respect to *what* changes (i.e., whether observed ontogenetic change in humans represents changes in expressive-constitutive actions or changes instrumental-communicative actions) and *how* it changes (i.e., whether change is transformational or variational).

Concerning *what* changes (whether observed changes are changes in expressive-constitutive action or instrumental-communicative action), for example, *expressive action* in humans reflect a more fundamental organization of basic systems (e.g., cognitive, affective, motivational systems) while *constitutive actions* reflects the creative function of humans in making new behaviors, new intentions, new meanings. *Instrumental action* in humans, in contrast, provide a means for attaining some outcome as the pragmatic dimension of action while *communicative action* extends action into the domain of the

intersubjective. In human ontogenesis, a cognition or thought may be the means to solve a problem; the emotion of crying may lead to acquiring a caregiver; or walking around may be instrumental in acquiring nourishment. (Overton, 1998, p. 110)

Concerning *how* change takes place (i.e., whether change is transformational or variational), for example, *transformational change* reflects changes in the complexity, organization, intricacy etc. of the pattern, structure, organization, etc. of observed units (e.g., elements, entities, actions, etc.). Transformational change is morphological change. *Variational change* reflects changes in the degree or extent that an observed change varies from an assumed standard. Variational change can be understood as quantitative in nature (i.e., an increase or decrease from the standard) or as qualitative (i.e., specific differences among the variants). In either case, the complexity of variational change is often thought of as additive. (Overton, 1998, p. 111)

In addition, and more significantly, the neo-Darwinian metanarrative adopted a perspective that tended to attribute a privileged ontological and epistemological status to instrumental-communicative action over expressive-constitutive action *and* variational change over transformational change (Overton, 1998). With respect to the scientific study of human development, for example, one of the most important characteristics of the positivist tradition in philosophy of science (the tradition most closely identified with the neo-Darwinian metanarrative) is an ontological foundation that emphasized the observable as real and an epistemological (and methodological) foundation that emphasized observation over interpretation and the explanatory power of reduction, induction, and causality over the explanatory power of pattern, structure, or organization in the explanation of change. This tradition, with its roots in Empiricism (the claim that

the senses and, hence, observation provides the only foundations valid knowledge) arose in reaction to Rationalism (the claim that reason, because it is *not* dependent on sense experience, provides the only foundation for valid knowledge). The aim of positivism was to rigorously avoid the use of interpretation and rely on observation and *only* observation. According to this view, reason enters into the scientific study of human development *only* as an analytic heuristic – a tool for overcoming conflicts that emerge in scientific discourse by generating ever more pristine observations (i.e., pure facts, observation free from interpretation).

In its view of explanation, the positivist tradition adopted the Newtonian view – called *mechanical explanation* – that is comprised of three steps: (a) *reduction*, (b) *causation*, and (c) *induction* (Overton, 1998). Reductionism (also termed “elementary,” the “analytic ideal,” and “atomism) has as its goal eliminating interpretation, a source of error in commonsense observation, to arrive at the elementary stable bedrock unit that constitutes the level of scientific “data” and the atom of inquiry. In the scientific study of human development in general and psychology in particular, this atom came to be the observable response operationalized as instrumental action. For this model of explanation, reduction is followed by a causal analysis -- a search for cause and effect relationships. In contemporary articulations of this step, the searched for antecedent cause has become the Independent Variable of the experimental method and instrumental action, the “atom” of inquiry, has become the Dependent Variable. The third step in this Newtonian mechanical explanation is the induction of laws or law-like statements (e.g., hypotheses, theoretical propositions) from observed regularity of antecedent cause and consequent effect. According to the positivist view, it is critical that the process of

discovering scientific laws be fundamentally inductive (i.e., deriving the universal from observable particulars by generalization and *only* generalization) because of the positivist claim that valid knowledge is possible through observation and *only* observation. The fundamental nature of induction thus ensures that all theory-like statements be *empirical generalizations* drawn from pristine data (i.e., data unencumbered by interpretation).

Logical positivism reached its zenith in the United States in the 1940s and 1950s, but its failure came to be broadly recognized beginning in the 1960s. More importantly, as Overton (1998) noted, the positivist tradition (and the metanarrative it represents) ultimately failed as a philosophical movement because of the goal it set for itself - that is, positivism failed because its fundamental aim was the suppression of interpretation in science (p. 160), a goal it was unable to achieve.

Although it has failed as a philosophical movement, the legacy of positivism has continued to exert a broad and deep influence on the scientific study of human development. Ironically, the continuing impact of positivism has been particularly significant with respect to the emphasis on observation over interpretation and the explanatory power of reduction, induction, and causality over explanatory power of pattern, structure, or organization, *the core reason for the philosophic failure of the movement*. As Overton (1998, p. 168) notes, perhaps the most pervasive impact of positivism's causal legacy appears in the dichotomy between description and explanation, which is, in fact, merely a surrogate for the positivist's division of methodology into reduction (description) and causality (explanation). This distinction is fostered, for example, in the division of developmental processes into the formal and functional (Flavell & Wohlwill, 1969) in which the formal became the descriptive "what" of

development (i.e. the "outputs" of development) and function became the explanatory "how" of development (i.e., the causal inputs, the "mechanisms"). More important, the causal represented the exclusive foundational base of scientific explanation:

Mechanisms are considered by many to be the more important half of the story.... Moreover, the mechanisms half appears to be the explanation half (the "how" versus the "what" of development), and explanation is the ultimate objective of any science (Flavell, 1984, p. 188) (quoted in Overton, 1998, p. 168)

In this scenario, there is no room for pattern explanation. At best, pattern -- whether synchronic or diachronic patterns of sequences -- become a description to be explained by causal mechanisms and only causal mechanisms. Consequently, any pattern offered as explanation is treated as description, and the only question left open is the accuracy of the description. The result is a cascade of methodological implications.

Because it splits scientific activity into a dichotomy of description and explanation, for example, the methodological legacy of positivism continues to identify mechanisms of change with classical causal entities. The failure of positivism as a philosophical movement points to the need to move beyond the constraints of this conception of what a "mechanism" is. A nonpositivist alternative methodology, for example, might propose that the concept of "mechanism" need not be limited in meaning to "cause" but could be understood as the method or means of change. As Overton (1998) notes, in this case, the action of the system itself constitutes the mechanism of change, and hence explains development. Because system and action represents a relational unit, the explanation becomes a *relational structural functional explanation*. It is possible, of

course, to think of activity as a cause, and on this basis it is possible to maintain positivism's legacy in maintaining that cause equals explanation. However, this is a rather procrustean maneuver because the action of a system is not a necessary and sufficient condition of some independent entity, nor does it increase the probability of some independent entity. Rather, a pattern of actions is the means (mechanisms) by which the pattern of action itself changes, and this fails to fit any classical or contemporary definition of cause (Mulaik, 1987) (cited in Overton, 1998, p. 169)

The relational developmental metanarrative thus offers a relational dialectical perspective in which interpretation/observation and pattern/causality interpenetrate. According to this view, interpretation, reason (broadly considered), and observation are coequal partners in the resolution of conflict in scientific discourse. As the same time, if the pattern of action of a system constitutes the fundamental explanation of the system's change, then structure/function represents two sides of a unified explanation; structural explanation reflects a focus on pattern, and functional explanation reflects a focus on activity.

New Directions in the Neo-Darwinian Metanarrative

Overton's review (1998) amply documents not only positivism's failure to achieve its fundamental aim (the suppression of interpretation), but also the failure of continued efforts to develop more theoretically and conceptually adequate approaches for revising and extending positivistic functionalism. In the end, efforts to revise and extend functionalism (e.g., instrumentalism, updated functionalism, instrumentalism with falsification, etc.) lapsed into a split between interpretation/observation and

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pattern/causality, ultimately, privileging of observation and causality over interpretation and pattern, repeating the previous cycle without resolving the fundamental conflict.

Ironically, Overton's review (1998) further documents that despite the broad recognition of the failure of positivism as a philosophical movement (and subsequent refinements and revisions) to achieve the aim of privileging instrumental-communicative action over expressive-constitutive action and reducing patterns to causes (interpretation to observation, structure to function, etc.) *and* the availability of alternative nonpositivist philosophical perspectives such as the relational developmental metanarrative described by Overton (1998), instrumental-communicative action and causal explanation continued (and continues) to occupy a predominant place in the vocabulary of the human development literature relative to expressive-constitutive action and pattern explanation. The irony is thus that despite the failure of positivism, the search for causal mechanisms underlying instrumental-communicative action continues to be one of the most predominant and pervasive themes in the scientific study of human development.

This apparent paradox served as the starting point for our efforts to articulate a Unified Relational Methodological Framework for understanding developmental change and the data analytic strategies, IQ-DAS (Integrated Qualitative/Quantitative Data Analytic Strategies), that we have been developing for conceptualizing the integration of quantitative and qualitative methods in the causal and pattern analysis of both variational and transformative change in both instrumental and expressive actions (Kurtines, Lewis Arango, Kortsch, in press).

Because this work provided the foundation for the work that the investigator has been doing on developing and refining the LCI, the remainder of this section will 1) discuss more fully the nature of this apparent paradox,

2) outline the framework that we have been developing for conceptualizing the relationship between instrumental-communicative action and expressive-constitutive action *and* variational and transformational change as two sides of a unified explanation for resolving this paradox, and

3) describe some data analytic strategies that we have developed in our work (Integrated Qualitative/Quantitative Data Analytic Strategies, IQ-DAS) for conducting a unified causal (quantitative) and pattern (qualitative) analysis of variational and transformational change in instrumental-communicative action and expressive-constitutive action.

The Nature of the Paradox

The prominent role that the search for causal mechanisms underlying change in instrumental-communicative action plays in the scientific study of human development creates a two-sided paradox. The first part of the paradox is that despite the widely recognized failure of the positivism to privilege instrumental action over expressive action and causal explanation over pattern explanation, the search for causal mechanisms of change in instrumental action has continued to exert a broad and deep influence on the scientific study of human development. The socialization experiences of students of human development entering the profession today share much in common with the experiences of scientists who entered the professional at the height of the positivist influence, at least with respect to the importance of causal explanations of change in

instrumental action. For example, the search for causal mechanisms underlying change in instrumental action and, perhaps more importantly, the methods for pursuing this aim constitutes a large part of the early socialization experience of students of human development. Their introduction to the search for causal mechanisms of change in instrumental action typically starts at the very beginning of their studies. It is, for example, at the core of the graduate research methods courses they take in their home departments (in the form of learning the procedures and practices used to identify functional relationships between independent and dependent variables, the development, use, and evaluation of measures of variational change, the procedures and practices used in designing research studies, experimental controls, etc.) and in complementary courses offered by statistics departments (i.e., graduate "stat" courses) in the form of learning how to use statistical procedures and practices in resolving conflicting validity claims and determining whether, with a high degree of confidence, the findings from their data can be used to eliminate rival or competing causal hypotheses. It also often makes up large portions of the exams qualifying students for candidacy as well as their initial research efforts in the form of a dissertation (and the dissertation committee's expectations). Moreover, the success of their subsequent efforts is similarly influenced by the degree to which they have identified antecedent causes of instrumental action in their research and, more importantly, explicated their justification of this belief (e.g., design specification, statistical power, experimental and statistical controls, etc.) in ways that meet the expectations of the refereed journals to which they submit their work. Finally, their contribution to the research process is similarly influenced (and evaluated) by the

expectations of tenure and promotion committees that appraise the success of their publication records as part of gauging their progress along their respective career paths.

Thus, despite the widely recognized *failure* of positivism to privilege instrumental action over expressive action and causal explanation over pattern explanation, a considerable proportion of the socialization experiences of students of human development include exposure to the methodological procedures and practices associated with the causal explanation of instrumental actions. Moreover, the degree and significance of this exposure has persisted (indeed, increased) despite the waning of the philosophic influence of the positivist movement.

In this context, it appears reasonable to conclude that although the evolution of these methods and procedures was historically associated (correlated) with the rise of the positivist tradition, their evolution was not dependent upon (caused by) the rise of the movement. Indeed, it appears quite the opposite – that the emergence of well developed, highly refined, and consensually agreed upon methodological procedures and practices associated with the causal explanation of instrumental actions is what gave positivism its credibility (i.e., the direction of the causality is the reverse of that described by the positivists). The significance of these methods has persisted because they have proved useful in the explanation of changes in instrumental action that can be attributed to causal processes. The credibility of positivism thus appears to have been strengthened by its appropriation of methodological procedures and practices associated with the causal explanation of instrumental actions (although the success of the methods appears not to have been dependent upon the success of the philosophical movement) while its credibility appears to have been weakened by its rejection of explanatory power of

pattern, structure, or organization. In the end, it was thus the rejection of explanatory power of pattern, structure, or organization *coupled* with its exclusive reliance upon methodology not dependent upon its metanarrative that accounts for the apparent the paradox of the continued influence of positivism after its failure as a philosophical movement. Thus, it is possible (indeed, plausible) to hypothesize that during the decades of the predominance of the positivist tradition, these procedures and practices became so deeply embedded in what Kuhn (1962) referred to as “ordinary science” that they have now come to make up part of the implicit background presuppositions that make the research process possible and, further, that this process was not dependent on the claims of exclusivity made by positivism but was instead a consequence of the explanatory utility of the methods themselves.

The other half of the paradox is that in the face of the advances that have been made in bringing forth alternative relational perspectives *and* the failure of the positivism to privilege the causal explanation of variational change over the pattern explanation transformative change, causal explanations of variational change have continued to exert a far more significant influence on the scientific study of human development than have pattern explanations of transformational change. Thus, as noted, a considerable proportion of the socialization experiences of students of human development include exposure to the methodological procedures and practices associated with causal explanation *and* little or no exposure to methodological procedures and practices associated with the explication of pattern explanation. This appears to be the case despite the waning of the influence of the positivist tradition. Thus, although considerable strides have been made in developing theoretical/conceptual foundations for nonpositivist

alternatives *and* although these advances have had a large and growing impact on the theoretical and metatheoretical foundations of the field (as well documented in Overton, 1998), to date the emergence of these alternative foundations appear to have failed to have a significant impact on the process of “ordinary science,” especially at the level of basic methodological procedures and practices that are used in resolving conflicting validity claims.

As noted previously, for example, that the socialization experiences of students of human development entering the profession today include little or no exposure to methodological procedures and practices associated with pattern explanation. For example, the core graduate research methods courses they take in their home departments do not include learning procedures and practices for the development, use, and evaluation of measures of transformational change, nor do they include learning procedures and practices used in designing research studies to identify transformational (non-causal) change, nor are there complementary courses offered by other departments for learning how to use methodological procedures and practices in resolving conflicting validity claims and determining whether, with a high degree of confidence, the findings from their data can be used to eliminate rival or competing pattern hypotheses. Dissertation committees, journal editors, and tenure and promotion committees similarly do not often have expectations that research efforts will be directed toward uncovering transformational (pattern) change in expressive action rather than (or in addition to) variational (causal) change in instrumental action.

Thus, despite the *advances* that have been made in bringing forth, alternative relational perspectives, a considerable proportion of the socialization experiences of

students of human development include little or no exposure to the methodological procedures and practices associated with pattern explanation. Moreover, the lack of this exposure has persisted despite the waning of the influence of the positivist movement. It thus appears reasonable to conclude that the absence of methods and procedures has not been entirely dependent on *either* the existence of an influential positivist tradition *or* the availability of theoretical/conceptual foundations for nonpositivist alternatives. Rather, in this context, it is possible (indeed, plausible) to conclude that the theoretical and conceptual advances that have been made have not yet been matched by comparable advances in the emergence of well developed, highly refined, and consensually agreed upon methodological procedures and practices. According to this hypothesis, causal explanation of instrumental actions have persisted because they have proved useful in the explanation of those types of human ontogenetic change that can be attributed to causal processes *and* because well developed, highly refined, and consensually agreed upon methodological procedures and practices have evolved for resolving competing causal claims. Pattern explanation, in contrast, remains less prominent in the human development research agenda because the wide-spread documentation of the usefulness of pattern explanation for transformational change in expressive-constitutive action awaits the emergence of the type of well developed, highly refined, and consensually agreed upon methodological procedures and practices for resolving conflicting validity claims and eliminating rival or competing pattern hypotheses that have evolved for causal explanations of variational change in instrumental action.

New Developments in the Relational Developmental Metanarrative

The work that we have been doing (Kurtines, Lewis Arango, Kortsch, in press) builds on and seeks to extend the emerging relational developmental metanarrative, particularly as it relates to methodology and the analysis of developmental change. Our program of research uses as a starting point the working hypothesis that the next step in the evolution of a practical relational methodology is the development of a framework for conceptualizing the relationship between variational change in instrumental actions and transformational change in expressive actions as two sides of a unified explanation *and* development of highly refined and consensually agreed upon methodological procedures and practices for resolving conflicting validity claims and eliminating rival or competing pattern hypotheses, including advances in methods for measuring expressive-constitutive action and identifying and evaluating transformational change.

The developmental literature has already been moving in this direction. Overton (1998) noted, for example, that over the past two decades a family of data-analytic techniques designed specifically to address problems of synchronic and diachronic pattern and order has matured into a set of powerful tool for the exploration of the expressive (trait patterns, ability patterns), and transformational (sequential changes in trait patterns, ability patterns) features of development. These techniques have emerged out of Item Response Theory (IRT) scaling models, also known as latent trait theory and item characteristics curve (ICC) theory. These data analytic techniques are particularly useful for testing hypotheses about the dimensionality and hierarchy as well as hypothesis about transformational change in pattern and dimensionality in diachronic data.

In addition, there has been a more general trend toward growth in the importance of pattern/order techniques in the developmental literature over the past decade (see Overton, 1998). These trends, when coupled with broader methodological advances that have been taking place outside the field (described below), have lead us to believe that it is both timely and appropriate to begin to match the advances that have been made in the emergence of well developed, highly refined, and consensually agreed upon data analytic strategies for resolving conflicting validity claims with respect to causal hypothesis about variational change in instrumental actions with advances in data analytic strategies for resolving conflicting validity claims with respect to pattern hypothesis about transformational change in expressive actions.

Fortunately, the recognition of the need to advance data analytic strategies in the scientific study of human development appears particularly timely in view of advances in qualitative research methods that have been taking place throughout the human sciences (Denzin & Lincoln, 2000). There has been, for example, a growing recognition of the need to complement traditional, cross sectional, variable-oriented, sample-based research strategies and data analytic strategies developed for use in the quantitative analysis of variational change in instrumental actions with qualitative methodology more suited to the analysis of transformative change in expressive actions with the possibility of such methods being more faithful to the key aspects of the phenomena under study (Creswell, 2003; Lincoln, Guba, 2000; Patton, 2002). Recent advances in use of qualitative research methods thus appear to provide a potentially promising opportunity to begin to address the issue of developing a unified relational developmental methodological framework in which pattern explanation for transformational change in expressive action and causal

explanations of variational change in instrumental action interpenetrate. When coupled with the use of appropriate strategies to address issues of the reliability and validity, the use of both quantitative and qualitative data analytic strategies within a unified relational framework has considerable potential to increase the likelihood of being successful in capturing and reporting accurately human ontogenetic change that is both transformational and/or expressive as well as variational and/or instrumental.

Integrated Qualitative/Quantitative Data Analytic Strategies (IQ-DAS)

This section will describe the framework that we (Kurtines, Lewis Arango, Kortsch, in press) have been developing and refining that is intended to provide a set of integrated data analytic strategies (IQ-DAS; Integrated Qualitative/Quantitative Data Analytic Strategies) for use in the quantitative (causal) analysis of variational change in instrumental action and the qualitative (pattern) analysis of transformative change in expressive action. In undertaking the development of IQ-DAS, our goal was to promote the emergence of practical data analytic strategies for resolving conflicting validity claims with respect to pattern hypotheses about changes in expressive action that match the advances in data analytic strategies for resolving conflicting validity claims that have been made respect to causal hypotheses about changes in instrumental action. The strategies for the analysis qualitative (transformative) change in expressive action described in this section, which draw on recent advances in the evolution of qualitative research methods, represent what we believe to be a methodological breakthrough of considerable significance. More specifically, as discussed below, this work appears to represent a substantial move in the direction of the development of highly refined and

consensually agreed upon methodological procedures and practices for resolving conflicting validity claims and eliminating rival or competing pattern hypotheses, including advances in methods for measuring expressive-constitutive action and identifying and evaluating transformational change. This work thus appears to make a contribution to evolution of data analytic strategies for testing pattern hypothesis about expressive actions that begin to approximate the utility of the data analytic strategies that have evolved for testing causal hypotheses about instrumental actions.

In addition, and perhaps more important, the IQ-DAS was developed to foster the evolution of practical “relational” methodology. That is, in developing IQ-DAS our aim was to do more than “match” the advances that have been made in testing causal hypotheses about instrumental action; our goal was to begin to articulate a framework that more closely approximates the “relational” ideal of conceptualizing the quantitative (causal) analysis of variational change in instrumental action and the qualitative (pattern) analysis of transformative change in expressive action as two sides of a unified explanation. Moreover, our goal was to begin to articulate a practical, ready-at-hand framework that could be used to address complex and difficult developmental issues in real life “applied” settings as well as clinic and laboratory settings.

IQ-DAS was developed as part of an ongoing program of research that has as one of its goals the development of community-based interventions that target troubled youth with the aim of moving their life trajectories in more adaptive directions (Rutter, 1990). When applied in conjunction with this program, IQ-DAS was intended to provide an interrelated set of data analytic strategies for conceptualizing and implementing the integrated applications of both qualitative and quantitative data analytic strategies in the

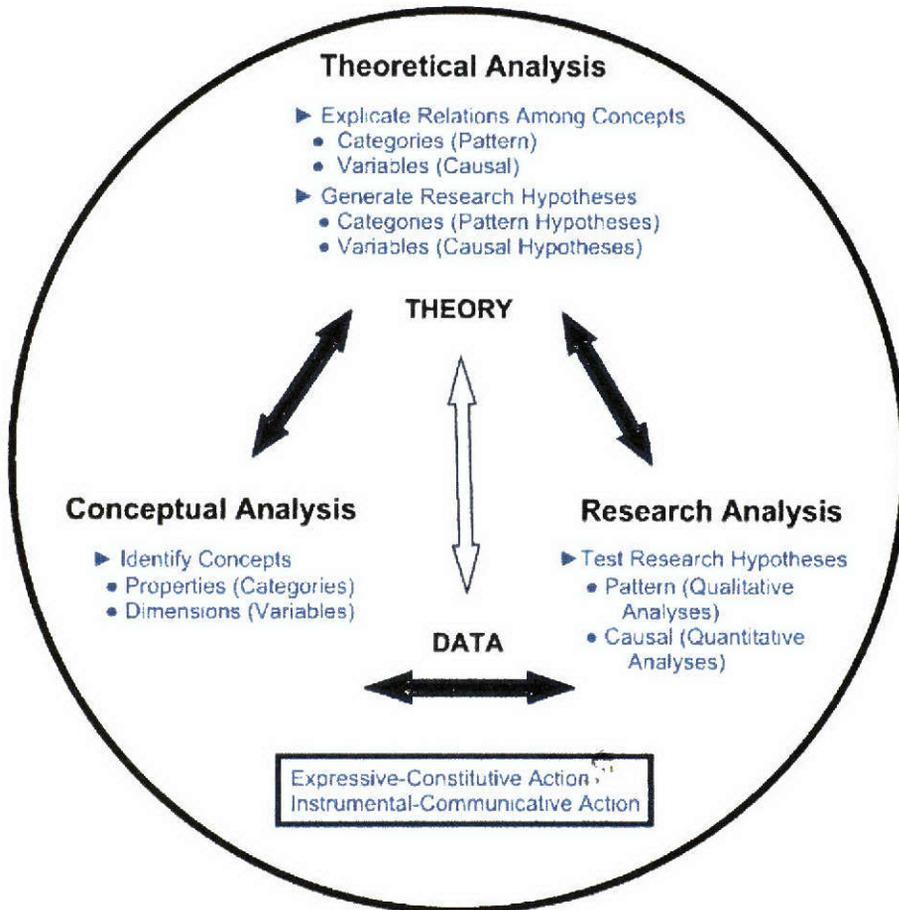
service of our intervention evaluation goals, namely, documenting the impact of our intervention on changing the lives of the youth who participate in our programs. To this end, IQ-DAS is intended to approximate the relational ideal by providing a framework that makes available to the researcher an array of research methods and procedures that can be relationally employed, as needed, across the full range of the traditional splits that have characterized developmental research domains (qualitative/quantitative, structural/functional, variational/transformational, causal/pattern, expressive-constitutive/instrumental-communicative), and that also makes it possible to easily and readily switch between poles of the splits (qualitative → quantitative → qualitative..., structural → functional → structural...etc.) based on findings/results obtained at any phase of analysis (conceptual, theoretical, research analysis) and at any level of analysis (theory and data). The next sections provide a brief overview of the evolution of IQ-DAS followed by an illustration of the operation of the phases of the core cycle of IQ-DAS as we have implemented it as part of the program of research.

Figure 1 depicts the IQ-DAS framework visually. As can be seen from Figure 1, in an effort to represent developmental methodology relationally, this framework depicts the analysis of change in expressive and instrumental action in the form of a relational circle with the movement of the analyses being characterized as cyclical. The relational circle and the concept of cyclical movement through the circle provide a useful way for representing the unification of analytical issues that have often historically been portrayed as split. A closer examination of Figure 1 further reveals that IQ-DAS is comprised of three analytic phases (Conceptual, Theoretical, and Research Analyses). In this framework, depending upon her/his research goal, a developmental researcher may

Figure 1
IQ-DAS

**Integrated Qualitative/Quantitative
Data Analytic Strategies**

Core Cycle

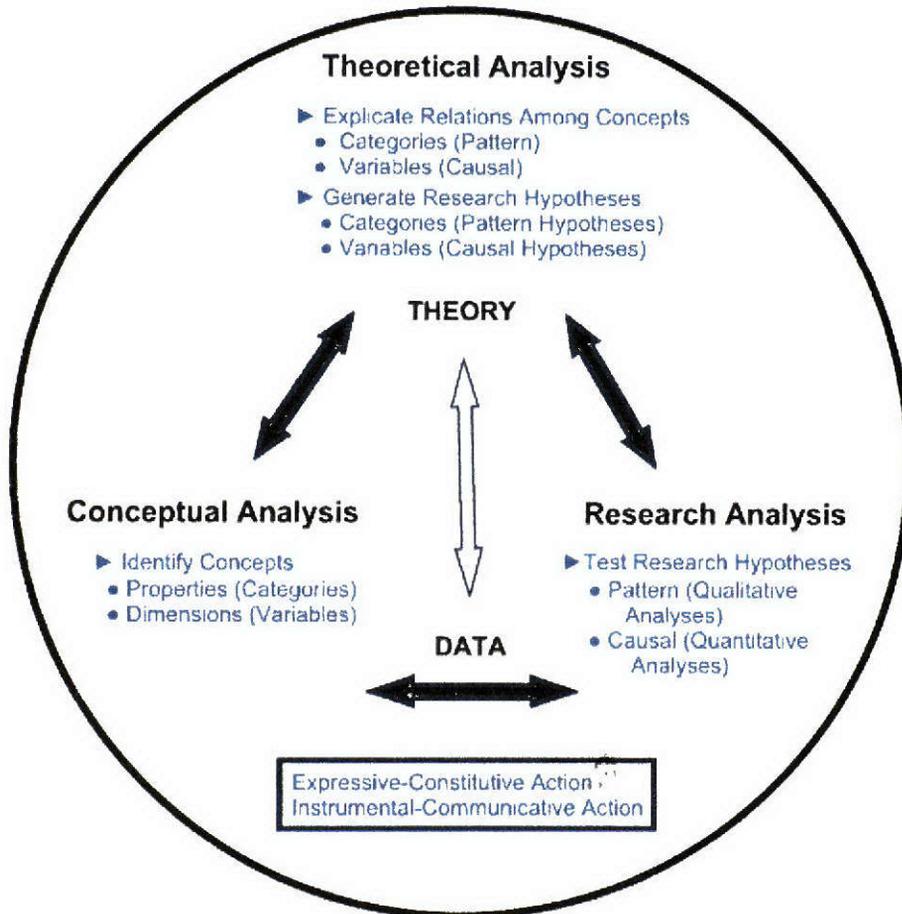


begin analysis at any of the three phases. The framework then provides a suggested direction movement. The relational circle and the concept of cyclical movement through the circle provide a useful way for representing the unification of analytical issues that

Figure 1
IQ-DAS

**Integrated Qualitative/Quantitative
Data Analytic Strategies**

Core Cycle



begin analysis at any of the three phases. The framework then provides a suggested direction movement. The relational circle and the concept of cyclical movement through the circle provide a useful way for representing the unification of analytical issues that

have often historically been portrayed as split, but they do not address the critical need for the development of highly refined and consensually agreed upon methodological procedures and practices for resolving conflicting validity claims and eliminating rival or competing pattern hypotheses. As Overton (1998) notes, some progress has been made, but the need exists to have ready-at-hand data analytic strategies for conducting pattern analysis that can be broadly applied in a wide range of setting with a diversity of type of data. Methods of causal analysis have persisted because they have proved useful in the explanation of change in instrumental actions that can be attributed to causal processes. The need now exists for methods of pattern analysis that are useful in the explanation of change in expressive actions that can be attributed to transformations in pattern and structure. Moreover, as noted, it is even more important to have available models, frameworks, and approaches for conceptualizing *and* implementing integrated applications of *both* types of data analytic strategies, as the following discussion of IQ-DAS illustrates.

Further examination of Figure 1, for example, reveals that the three phases of IQ-DAS (Conceptual, Theoretical, Research) can be applied to either type of data (Expressive-Constitutive or Instrumental-Communicative) and that cyclical movement through the core cycle alternates between two basic levels of analysis (Theory and Data).

Figure 1 further depicts that for each of the three phases of analyses, the two parallel types of analyses: Qualitative (Categories, Pattern, Transformational) and Quantitative (Variables, Causal, Variational) may be conducted during each phase and how the use of a relational framework facilitates the process of switching back and forth between poles of the splits (qualitative → quantitative → qualitative... structural →

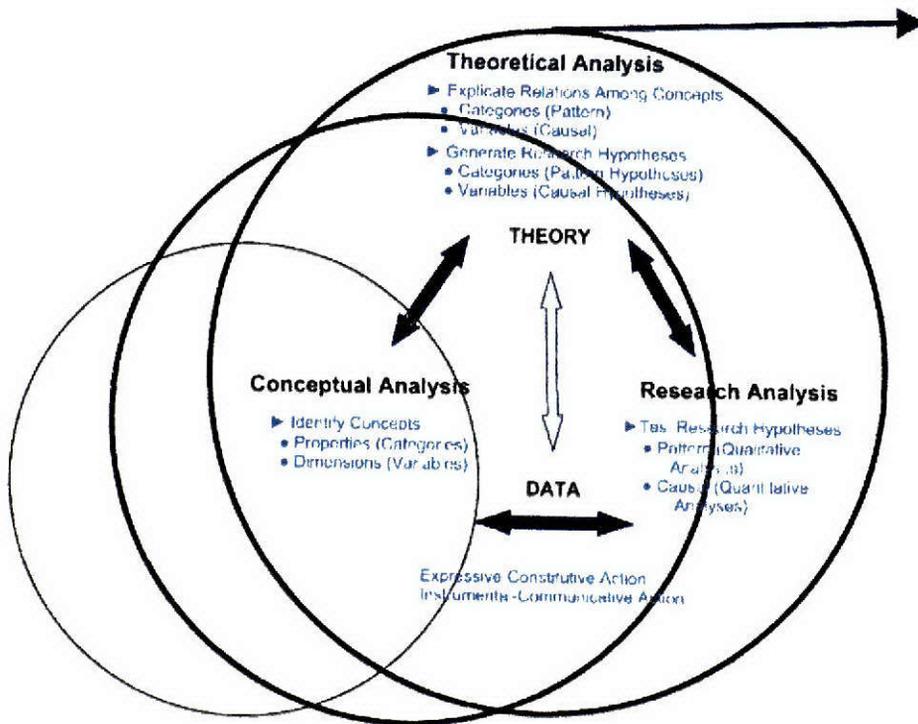
functional→ structural... etc.) based on findings/results obtained at any phase of analysis (conceptual, theoretical, research) and at any level of analysis (theory or data).

As can also be seen from Figure 1, consistent with its unified analytic framework, the three analytic phases of the core cycle of IQ-DAS form a relational circle that is cyclical *and* reciprocal. This feature of IQ-DAS, the reciprocal and cyclical movement between conceptual, theoretical, and research analysis phases, insures that the relational circle remains non-vicious because in the process of completing each full turn of the circle each cycle of the circle is open to diverse types of modification (i.e., conceptual, theoretical, or empirical) any (or all) of which are capable of transforming the movement of the next new cycle of the circle into a directional spiral. Figure 2 illustrates this process. As can be seen from Figure 2, after a researcher has collected data consistent with her/his research questions/goals and begins the conceptual analysis of the data, the forward movement through the core of IQ-DAS cycle generates the potential for transforming the relational circle into a directional spiral. During the conceptual analysis of the data, for example, findings/results from the conceptual analysis may result in the identification of new categories or variables and move the cycle forward to the next phase of analysis (theoretical analysis) or a lack of findings/results from the conceptual analysis (e.g., no relevant or meaningful new categories or variables) may result in the need to collect new data, with new findings/results from this data altering the direction circle and providing a new direction for the movement of the next cycle that spirals outward from the previous cycle. Forward and/or backward movement through each of the remaining phases of the cycle allows a similar possibility of altering the direction of the circle and transforming it into a spiral.

If the data analysis at the conceptual analysis phase, for example, results in the identification of new categories or variables and the cycle moves forward to the next phase of analysis (theoretical analysis), finding/results from the theoretical analysis of the data may result in the articulation of pattern or causal hypotheses and move the cycle forward to the next phase of analysis (research analysis) or a lack of findings/results from the theoretical analysis (i.e., no relevant for meaningful theoretical or research hypotheses) may result in backward movement through the cycle (back to the conceptual analysis or even back to the collection new data) with new findings/results from this re-analysis or new data collection altering the direction of the cycle by providing a new direction for the movement of the next cycle that spirals outward from the previous cycle. Finally, if the theoretical analysis of the data result in the articulation of new pattern or causal hypotheses and the cycle moves forward to the next phase (research analysis), negative findings/results from the hypotheses testing may result in bringing the analytic cycle to an end if the negative result answers the research question(s) that initiated the cycle (or a return to earlier phases if they are not answered) and/or confirmatory findings/results from the hypotheses testing may bring the analytic cycle to an end if the confirmatory result answers the research question(s) that initiated the cycle or it may result initiating another cycle of analysis by providing new directions for the movement of the next cycle in the spiral by raising new a research question(s) thereby starting an entirely new core cycle.

Figure 2 Transforming the Circle

Movement Through the Phases of the Core Cycle Enables
Transforming the Relational Circle into a Directional Spiral



The Evolution of IQ-DAS

Background and History

Consistent with the relational ideal, IQ-DAS was developed to fill the need for available models, frameworks, and approaches for conceptualizing and implementing data analytic strategies capable of integrating causal (quantitative) and pattern (qualitative) analysis of variational and transformative change in instrumental and expressive actions. The challenge, however, was more than simply that of integrating both types of data analytic strategies. Rather, as noted, the challenge included the development of practical data analytic strategies for analysis of pattern hypotheses about changes in expressive action that match those available for causal hypotheses about changes in instrumental action concurrent with the development of a framework for integrating both types of strategies. In this context, the existence of highly refined research methods and statistical data analysis strategies provided the background against which we undertook the task of developing methods for measuring expressive action and identifying and evaluating transformational change. Thus, in seeking to articulate IQ-DAS as a framework for integrating data analytic strategies, we undertook the parallel tasks of developing and refining research methods and qualitative data analysis strategies appropriate for our program of research while at the same time as developing a framework for integrating both types of data analytic strategies.

In our work, this phase of the process involved the development of qualitative methods for indexing the type of expressive-constitutive action that we consider important in evaluating our programs for troubled youth. It also involved formulating and operationalizing qualitative methods for evaluating transformational change in the type of

expressive-constitutive action that we target in our programs and IQ-DAS as a framework for integrating the use of these strategies with the use of quantitative data analysis strategies. Indeed, the evolution of IQ-DAS as we use it in our work (and as described here) involved a cyclical and reciprocal process of moving back and forth between all of these levels of analysis. Consequently, we consider IQ-DAS to be a framework available and ready-at-hand for application in a wide range of settings.

Developing Qualitative Methods for Indexing Expressive-Constitutive Action: Life Course Interview

Because IQ-DAS is intended to provide a framework for analyzing both quantitative (causal) and qualitative (pattern) analysis of variational and transformative change in instrumental and expressive actions, the core assessment battery that was developed for use in evaluating our program for this study, was a qualitative measure, the Life Course Interview (LCI; Clausen, 1998) as adapted for use in our research program. Although not reported in this study, the intervention program also uses a number of quantitative core measures to evaluate the impact of the intervention on three developmental domains: 1) skills and knowledge (the focus in this domain is on critical understanding), 2) attitudes and orientations (the focus here is on control and responsibility), and, 3) self understanding and insight (the focus here is on knowledge of self) using both individually administered performance measures and group administered self-report measures. Within each domain, the measures that we use to evaluate variables in that domain were either drawn from the appropriate literature or developed as part of our own program of research. Across the domains, depending upon the theoretical orientation within which the variables were articulated, the core quantitative measures of

the domain variables are *conceptualized* as indices of either expressive-constitutive or instrumental-communicative action. Also across the domains, however, *all* of the quantitative measures in the core battery are *operationalized* as indices of variational change, i.e., they are quantitative measures yielding either ordinal, interval, or ratio scores that can be analyzed for variational change over time using variable oriented statistical methods. Moreover, within the IQ-DAS framework, these analyses make up an important component of our program evaluation efforts.

This qualitative measure included in our core battery, in contrast to the quantitative measures, are specifically *conceptualized* as measures of expressive-constitutive action (and even more specifically, as performance measures for indexing the subjective meaning and significance of participants' life course experiences) and are *operationalized* as indices of transformational change, i.e., they are qualitative measures coded for categories that can be analyzed for transformation (qualitative) change in structure, pattern, organization, etc. using person oriented qualitative methods.

Because this study focused on the use of the LCI in evaluating intervention outcome conducted as part of this ongoing program of research, the Life Course Interview (Clausen, 1998), will be described next in detail.

Life Course Interview

The Life Course Interview (LCI) builds on Clausen's (1993; 1995; 1998) pioneering work on the use of Life Reviews and Life Stories in life course research for the methods and procedures that it uses to elicit participants' qualitative descriptions of their life course experiences. More specifically, the Life Course Interview uses Clausen's Life Chart procedure (1998) and a semi-structured interview (structured probes and

follow-up questions) drawn from life course theory to elicit and structure free response data of participants regarding their life history and experiences. To this basic narrative structure, the LCI adds seven Themes with corresponding standardized questions and follow-up probes drawn from psychosocial developmental theory and life course theory that provides the developmental framework for our intervention work.

Administration of the LCI. The Life Course Interview is a semi-structured free response interview. The LCI is used in conjunction with a Life Chart from Clausen's work (1993) as adapted for use with adolescents in our work. The respondent completes the Life Chart before being administered the LCI. The Life Chart consists of a simple grid, extending from early childhood to the present and beyond (or expected life satisfaction in the future), with life satisfaction rated on a scale of 0 to 10. The Life Chart serves as the focal point for the interview and provides a method for eliciting respondents' reflections on past, present, and future life events.

The LCI is implemented as an open-ended "full" response performance measure. More specifically, it is an open-ended full response measure in that the interviewee's response data are not constrained or limited in length or detail. It is, however, also a performance measure in that the opened ended interview questions (e.g., How would you answer the question, "Who am I?") are followed by a set of standardized meaning and significance probes¹ designed to "test the limits" of respondents capacity to generate and articulate a coherent narrative description of, in the case of this interview question, their personal sense of identity. The interviewer thus asks open-ended questions, which allow the respondent to reveal whatever seems most important to her or him, and then follows up with probes designed to engage the respondent and elicit maximum secondary

elaboration of the meaning and significance of the content of the narrative they have generated in response to the question.

In addition to using the Life Chart as a reference, the LCI asks a series of standardized questions and more detailed probes about seven specific Life Course Themes. These seven Life Course Themes include: Past Life Experiences, Past Turning Points, Identity, Present Turning Points, Current Life Satisfaction, Challenges/Resources, and the Future. Questions and probes related to these themes include, for example, asking respondents to identify what they consider a significant turning points in their lives with probes that elicit more detail about the meaning and significance of these turning points.

The Life Chart and the corresponding seven Life Course Themes provide a framework for the LCI Questions and Probes thus providing a method for eliciting the respondent's description of his/her life course experiences and their meaning and significance to that individual. The individual's responses to the LCI are audio recorded and used to generate a Life Course Record. A Life Course Record (LCR) is the transcription record of a respondent's report of his/her life course experiences obtained from the Life Course Interview. The individual's Life Course Record (LCR) provides a narrative record of those experiences. In our work, the interview response data contained in the LCR transcription undergoes a process of both conceptual and theoretical coding.

Formulating and Operationalizing Qualitative Methods for Evaluating Transformational Change in Expressive-Constitutive Action: Grounded Theory

The methodological procedures and practices that IQ-DAS uses for identifying and evaluating pattern hypotheses about expressive action draw primarily on grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998) as adapted for use in our

research program. Within the qualitative research tradition, grounded theory is one of the most widely used qualitative research methods, particularly among researchers who identify with the postpositivist tradition in the human sciences. Grounded theory (Strauss & Corbin, 1998) has historically been identified with the sociological tradition in the human sciences, a perspective that has tended to be less closely identified with the ontological emphasis of neo-Darwinian metanarrative on the observable as real and an epistemological and methodological foundation that emphasized observation and experimentation over interpretation and the explanatory power of reduction, induction, and causality over the explanatory power of pattern, structure, or organization. Emerging out of a field research tradition rather than a laboratory research tradition, grounded theory evolved in response to the need identify patterns or organizational structures in the subjective meaning and significance of research participants' open-ended responses (both between and within groups) in data sets collected using relatively unstructured non-experimental interview and field observational methods rather than causal or functional relations derived from behavioral observations in experimentally controlled laboratory settings.

In this context, although grounded theory has *not* been historically associated with the positivist emphasis on observation and experimentation over interpretation (and the explanatory power of reduction, induction, and causality over the explanatory power of pattern, structure, or organization), it has been associated with other key assumptions of the postpositivist tradition. In particular, postpositivists (like the positivist tradition) assume that an objective reality exists, but differ in their view that knowledge of this reality can be only approximated. Postpositivists also stress the use of multiple methods

(in contrast to the positivist emphasis on experimental methods) and tend to emphasize *both* discovery and verification (i.e., explanation) as emphasized by the positivist tradition *and* understanding and interpretation as emphasized by the nonpositivist tradition. Finally, grounded theory (like both the positivist and postpositivist tradition) views theories to be attempts to provide objective descriptions of reality whose truth value can be tested against a mind-independent reality in contrast to, for example, the postmodernist view of science -- and scientific theory -- as ungrounded, historically situated conversation no more privileged than any other discourse on knowledge (Gergen, 1994). In this context, grounded theory is used to generate theory from data or, if relevant theories exist, to modify these theories as new data are gathered. Interviews and observations are the most common source of data in grounded theory research, although there is no theoretical justification for not using other sources.

IQ-DAS draws on grounded theory data analytic strategies (Strauss & Corbin, 1998) for each of IQ-DAS's three analytic phases. More specifically, *open coding* and the *method of constant comparison* (as adapted for our research) is used in the conceptual analysis phase of IQ-DAS to identify the smallest set of qualitatively different categories/variables in a particular data set as well as in the theoretical analysis phase to identify the smallest set of theoretically meaningful (and qualitatively different) patterns of relationships (pattern/structural, causal/functional) among the identified categories/variables. *Theoretical sampling* and *theoretical saturation* (as adapted for our research) is used in resolving conflicting validity claims and eliminating rival or competing pattern hypotheses in the research analysis phase.

An Overview of the Use of IQ-DAS

This section provides a general overview of how we apply IQ-DAS in the conceptual coding of relatively small samples of open-ended (unstructured) full response performance data that we collected with the LCI. In analyzing the data from the LCI, the focus of our application of IQ-DAS was on the impact of our program on the subjective meaning and significant of the life course experiences of program participants. The description in this section illustrates the basic forward movement through three central analytic phases of the core cycle of IQ-DAS (Conceptual, Theoretical, and Research Analysis) (see Figure 1).

The Core Cycle of IQ-DAS

IQ-DAS Phase I: Conceptual Analysis

Consistent with grounded theory, IQ-DAS considers concepts the basic elements of a theory and “theory” itself as comprised of the hypothesized (the presumed actual) relationships among the concepts (categories/variables). Also consistent with grounded theory, the Conceptual Analysis phase of IQ-DAS focuses on using “open coding” for the construction of qualitatively different and similar categories, where *theory* is driven by the *data*. The primary outcome of this phase of the analysis is to analyze the “raw” data as the building blocks of theory.

Task 1: Content Category Identification

Because the focus of our evaluation is on the impact of the program on the subjective meaning and significant of program participants’ life course experiences, the Conceptual Analysis phase of IQ-DAS serves as the first phase of the core cycle. During this phase, the first task is to develop *content* categories based strictly on the content of

all participants' responses to one of the "qualitative" interview questions being analyzed. This task of content coding is achieved through a process of open coding. Strauss & Corbin (1998) define *open coding* as "The analytic process through which concepts are identified and their properties and dimensions are discovered in data" (p.101). In using this procedure for category identification, coders classify/sort the content of participants' responses (e.g. their descriptions of incidents, examples, events, ideas, things, actions/interactions, etc.) into qualitatively different (i.e., mutually exclusive or non-overlapping) categories/variables on the basis on their similarities and differences using Strauss & Corbin's (1998) method of constant comparative analysis.

For use in this study the procedure for open coding was used for interview response data that was entered in the IQ-DAS standard card format. In using this format, each participant's LCI transcription (i.e., their answer to each of the LCI's questions) was printed on standard file cards (3X5, 4X6, 4X8, etc.). For purposes of open coding, this card contains all of a participant's answers to a particular interview question. More specifically, for the LCI, the total content of this card, called a Macro Interview Response (MIR), included all the descriptive phrases and sentences (i.e., the descriptive narrative content) each participant used to describe the meaning and significance of a particular LCI Theme Question (and probes).

Because any particular participant's answers to an interview question may be made up of a variable number of descriptive phrases and sentences, the Macro Interview Response is further broken down into Micro Interview Content Units (RCUs). Micro Interview Response Content Units consist of the properties of the content (i.e., the ideas, incidents, examples, persons, events, things, actions/interactions, etc.) that make up the

phrases and sentences used in response to the interview questions and probes. Thus, as described below, for purposes of Category Identification, the process of open coding takes place at both the Macro Interview Response level and the level of the Micro Interview Response Content Units.

In coding for Content Category Identification, open coding takes place at the more micro level of the response content unit first. That is, as described in more detail next, all of the separate RCUs (RCU) that make up each of the participants' Macro Interview Responses (MIR) are first subjected to a conceptual analysis using open coding and then the MIRs themselves are assigned to the categories (and sub-categories) identified during the first task. For IQ-DAS, the core set of content categories identified during the open coding phase of conceptual analysis serves as the building blocks for the theoretical analysis of the next phase. Thus, consistent with grounded theory, concepts (categories) are considered the basic elements or building blocks of theory.

For purposes of content category identification, the Response Content Units (i.e., the descriptive phrases and sentences) are thus the basic unit of analysis. For the first task of the conceptual analysis phase, open coding using the method of constant comparison is

used to identify the smallest set of qualitatively different (non-overlapping) content categories that define the RCUs (i.e., the descriptive phrases and sentences) that make up a particular data set. For purposes of open coding, groupings (categories) are formed by comparing the similarities and differences of the properties of the

<p><i>Categories and Variables</i></p> <p>A <i>Category</i> is comprised of Response Content Units that share one or more <i>non-overlapping</i> (unique) properties. A <i>property</i> is a distinguishing attribute, quality, or characteristic.</p> <ul style="list-style-type: none">▪ Properties of a category may have one or more dimensions▪ Dimensions are attributes of properties that may be ordered (measured, scaled, ranked, etc.) along a dimension. <p><i>Variables</i></p> <ul style="list-style-type: none">• A Variable is an attribute of a property and can be either:<ul style="list-style-type: none">▪ 1) a dimensional attribute of a property of a category that can be ordered along that dimensionor▪ 2) a “category” that consists of a single unique property with a single dimensional attribute that can be ordered along that dimension.

content (phrases and sentences) of the RCUs for all MIRs. A *property* is a distinguishing attribute, quality, or characteristics of whatever it is that the phrases and sentences describe (i.e., the ideas, incidents, examples, persons, events, things, actions/interactions, etc.). A property may be qualitative (i.e., categorical, unconditional, e.g., good or bad, tall or short, happy or unhappy, important or unimportant, etc.) or quantitative (i.e., measurable, countable, comparable, etc., e.g., very good, good, neutral, bad, very bad).

The first task of the Conceptual Analysis, (i.e., Content Category Identification), is a type of open coding used to identify the smallest number of core categories that define the individual descriptive phrases and sentences that participants use to describe the meaning and significance of their life course experiences. The open coding for this

task is thus conducted as the level of the RCUs. For this task, these data are grouped into core (non-overlapping) categories (and sub-categories) based on the similarities and difference in the properties of the RCUs. After the core categories (and sub-categories) are identified, the coders end the first task by dimensionalizing the properties of the categories and sub-categories.

Task 2: Macro Interview Response Classification

This second task within the Conceptual Analysis Phase of the (IQ-DAS) involves the use of the core categories (and sub-categories) identified during the category identification to classify each participant's MIRs into the identified categories and sub-categories, including mixed categories (i.e., MIRs that include descriptive phrases and sentences from more than one core category). The results of the open coding, including the identified core categories (and subcategories) and each participant's category classification, provide the building blocks for the theoretical analysis phase that follows. The concepts of categories and sub-categories as used in open coding and their organization are described next.

Categories and Sub-categories:

A *Category* is made up of Response Content Units whose content shares one or more unique properties that they do not share with RCUs of other categories in a data set.

Categories and Sub-Categories

A *Category* is comprised of Response Content Units that share one or more *non-overlapping* (unique) properties. Categories may also be *nested*.

- A *non-overlapping* category has Response Content Units whose content share at least one unique property that they do not share with other Response Content Units of the data set. Non-overlapping categories are not necessarily mutually exclusive.
 - *Mutually exclusive* categories are comprised of Response Content Units who share at least one unique property the occurrence of which excludes some other unique property (masculine *or* feminine, tall *or* short, self *or* other, etc.). *Mutually exclusive* categories are necessarily non-overlapping
- *Nested* categories are comprised of Response Content Units who share more than one property and also have at least one “property” that has “properties” shared by at least one (but not all) members of that category. Both non-overlapping and mutually exclusive categories may also be nested categories (i.e., have sub-categories).

A *sub-category* has Response Content Units whose content share one or more “properties of a property” that they do not share with other members of the category. The organization of the sub-categories can be *hierarchical* or *flat*.

- If all of the Response Content Units of the sub-categories in a data set share only one unique category, then the sub-category organization is *flat*.
- If some of the sub-categories in the data set share more than one additional property in common, then the sub-category organization is *hierarchical*.

All categories are non-

overlapping and some categories are also mutually exclusive.

Non-overlapping

categories are comprised of RCU’s whose content share at least one unique property that they do not share with other RCUs of the data set (i.e., all conceptually distinct categories do not share in common any of the properties that define those categories). Non-overlapping categories are not necessarily mutually exclusive. They may

only be non-overlapping in a particular data set. *Mutually exclusive* categories are comprised of RCUs whose content share at least one unique property the occurrence of which excludes some other unique property (male-female, tall-short, self-other, etc.).

Mutually exclusive categories are necessarily non-overlapping.

Nested categories are comprised of Response Content Units whose content share more than one property and also have at least one “property” that has “properties” shared by at least one (but not all) RCUs in that category. Both non-overlapping and mutually

exclusive categories may also be nested categories (i.e., have sub-categories).

A *sub-category* has Response Content Units whose content share one or more “properties of a property” that they do not share with other RCUs in the category. The organization of the sub-categories can be *hierarchical* or *flat*.

Coders might, for example, identify in participant’s Response Content Unit about

A	B	C		
l	m	n		
		C ₁	C ₂	
		n x	n y	C ₃
				n y
				z

life course turning points (e.g., Tell me about the most significant turning point in your life.) the three Categories (A, B, C,) and their properties (l, m, n) and three Sub-categories of C (C₁, C₂, C₃) and their properties (x, y, z) illustrated in the Core Categories and Sub-Categories with Flat and Hierarchical Arrangement of Properties textbox.

In this illustration, the core Categories of A, B, and C might each be defined by a mutually exclusive property, the time orientation of the turning point. In this data set, all participants described either a Past, Present, or Future turning point. As can be further seen from the textbox, although all members of Category C_n were identified as describing a past turning point (n) they were also identified as sharing in common RCU descriptions of additional properties of the turning points.

In this illustration, it might be that all participants who described a past a turning point involving either a peer (x) or their families (y). Thus, for this set of Response Content Units, C_{1nx} and C_{2ny} are *sub-categories* of C. These sub-categories are comprised of all participants whose RCUs describes a turning point that occurred in the past and that further described it as involving either a peer or their family. The organizational arrangement of C_1 and C_2 in this example is *flat*.

As can further be seen from the text box, C_3 is also a sub-category of C. All the Response Content Units described a turning point involving their family (y). Moreover, some members of the C_3 sub-category might also share an additional property, (z), a property within a property (i.e., a nested property). In this example, it might be that they all not only described a turning point involving their family (y) but also more specifically, a turning point involving their father (z), a specific member of their family (in contrast to their mother, a sibling, etc.). Finally, as can be seen, the organization of Sub-Categories C_1 and C_2 is *flat* (i.e., C_1 and C_2 are *not* sub-categories of each other and they do *not* have sub-categories. The organization of the Sub-Category C_3 , in contrast, is *hierarchical* (i.e., C_{3nyz} is a sub-category of C_{3ny} which in turn is a sub-category of C_{3n})

Variables are dimensional attributes of the properties of categories. A property, however, is not necessarily dimensional. A Category has one or more properties and any of the properties may have one or more dimensions that may be ordered (measured, scaled, ranked, etc.) along that (those) dimension(s).

A variable may be either: 1) a dimensional attribute of a property of a category that can be ordered along that dimension *or* 2) a variable may be “category” that consists of a single unique property with a single dimensional attribute that can be ordered along that dimension.

Conceptual Analysis Procedures

The first (and main) task of the conceptual analysis phase is to identify the smallest number of categories for the Response Content Units based on the similarities and difference in the properties of their content. We call this *content category identification*. The second (and final) task of the Conceptual Analysis is to use the *content categories* (and sub-categories) identified during the category identification to classify each participant’s MIRs into the identified categories and sub-categories. That is, each participant in the data set receives a *category classification*. We call this task *Macro Interview Response Classification*.

Conducting the Open Coding for the Content Category Identification. In our work, the first step in preparing for open coding is to enter the MIRs into the IQ-DAS standard card format. Because any particular MIR may be made up of one or more RCUs, the next step in preparing for coding is to sort out the MIR cards in terms of the total number of separate, identifiable RCUs, from the smallest number of RCUs to the largest.

After the Macro Interview Responses are entered into the IQ-DAS standard card format and sorted, the coders are assembled for the coding session. We have mainly used undergraduate coders who are not knowledgeable about the research agenda in general or the specific research hypotheses in particular. The coding procedures are generally concrete and specific and we have used both psychology undergraduates and non-

psychology undergraduate. Our coding groups have also included students at every level (freshman through seniors). In our experience, we have been unable to detect any discernable effect of the type of coders on either the coding process or outcome.

When they are assembled, we provide the coders with a general orientation that includes a general explanation of the goals of coding (i.e., to identify and classify answers to interview questions into groups or categories) and a brief overview of the process that we will be using (i.e., by sorting cards containing a transcription of various segments of the interviewee's answers to the questions). We also provide a brief explanation of:

- What a *Response Content Unit* is -- the properties of the content (i.e., the ideas, incidents, examples, persons, events, things, actions/interactions, etc.) that make up the phrases and sentences interviewees use in answering the interview questions and probes.
- What a *property* is – the distinguishing attribute, quality, or characteristics of whatever it is that the phrases and sentences describe (i.e., the ideas, incidents, examples, persons, events, things, actions/interactions, etc.).
- What a *category* is – Response Content Units that share one or more *non-overlapping* (unique) properties.
- What a *sub-category* is -- Response Content Units whose content share one or more “properties of a property” that they do not share with other members of the category.

We explain to them that they will be making (consensually) *all* of the decisions concerning what are considered RCUs, what defines their properties, and what categories

and sub-categories they will be assigned to. We encourage open discussion of the process and we encourage them to raise issues, ask questions, and seek clarification.

We then begin by turning over the first (and usually the shortest) card and start the process of coding by giving them “hands on” experience using the first several cards to be coded. In the process of sorting the first few cards, we review again the concepts of RCUs, properties, categories, and sub-categories while continuing to encourage them to raise issues, ask questions, and seek clarification.

The first MIR card, for example, might contain only a single RCU (e.g. “*My boyfriend just broke up with me.*” Or. “*Nothing much is happening.*” Or. “*My life is stable now, but I feel like something is going to happen.*”). Coders are asked to see if they can tentatively (and consensually) identify (describe) the property (or properties) of this unit (e.g., turning point based on romantic relationship, not undergoing turning point, anticipating turning point, etc.) and to tentatively (and consensually) identify the content of the category that this response unit belongs to based on the specific categories. The categories are identified based on the content properties (e.g., properties-turning point, relationship, romantic). Once a tentative category is identified and a tentative description of its property or properties provided, the next card is turned over.

The second card may once again have only a single response unit (e.g. “*None.*” Or “*My whole life has changed since I moved out from my parents’ house*”). Coders are asked to compare this response content unit (and its properties) to the category that now exists (e.g., “not undergoing a turning point category.”). If the second card contains the “None” response unit, the coders might agree to classify it as belonging to the “not undergoing a turning point category.” If, on the other hand, the second card contains the

“My whole life has changed since I moved out from my parents’ house” response unit, the coders might agree that it does *not* belong to the “not undergoing a turning point category” and, on the basis of their discussion of the properties of the response unit, tentatively identify a new content category, (e.g. “turning point, family, environmental change.”).

If the MIR card has two or more RCUs, each response unit is compared to all the response units already identified (and their properties) and to all category (and sub-categories) already created, and are either classified as belonging to an existing category or a new category is established to accommodate the response unit. This process of constant comparison is continued until the coding process is complete.

Once the process of coding begins and coders have some experience with the actual data to be coded, we review with the coders our guidelines for the interpretation of the participants’ description of the properties of the RCUs. Coders are informed their interpretation of the participants’ description of the properties of the RCUs should make as little use of inference about the subjective meaning and significance of the to the participants as possible. That is, the aim is to identify the *content* categories that are in the data set (the actual response of the participants) and that the interpretation of the subjective meaning and significance of the content should be based on the explicit content of the responses using the most conservative criteria possible.

For example, if in response to the turning point question, the participant states, *“There are no changes going on in my life. My life is fine the way it is. Nothing is changing.”* it is possible to challenge this description as probably not true because the youth in the alternative high school are there precisely because their lives are not working

out for them. However, because there is no direct evidence that this is true about this particular youth *and* this particular youth has explicitly stated that their life is fine the way it is, in the absence of evidence to the contrary, the conclusion that the student's life is not working out for them would be an inference without justification. Consequently, the guidelines that we provide the coder is that they are to follow the most conservative criteria in interpreting the participants' description of the properties of the RCUs, namely, to code the responses on the basis of the explicit content contained in the RCU, and they are to avoid making inferences about the subjective meaning and significance of the content not explicitly stated by the participants.

Thus, in the absence of evidence to the contrary, if a participant makes an explicit statement that her life is undergoing a turning point, it should be coded in the "Undergoing a turning point category" *and* if a participant makes an explicit statement that her life is *not* undergoing a turning point, it should be coded in the "Not undergoing a turning point category."

As coders continue to gain experience with the actual data to be coded, we also re-review with the coders the aim of the grouping process, i.e., to come up with the smallest number of groups (categories) of RCUs that share at least one property in common that is not shared with RCUs of other categories (groups). They are also instructed that when they have successfully identified two (or more) categories (groups) (e.g., Category A, Category B, Category C, etc.) that define qualitatively different (non-overlapping) categories of RCUs, they should be able to verbally describe (state) the properties that each category of RCUs *share* in common (similarities) and the properties that they do not share in common (differences) with other categories of RCUs. These

criteria provide the basis for classifying particular RCUs as belonging to specific categories. Coders are provided the following prototypical statements to be used as criteria guidelines for deciding whether a RCU belongs in a particular category:

- A RCU classified as belonging to Category A should make an explicit reference to a specific property that defines the category (e.g., the RCU classified as belonging to the “Undergoing Turning Point” category should make explicit reference to undergoing some sort of change or turning point) *and* this RCU should include *no* an explicit reference properties of other categories. If this statement is true, then this RCU belongs in Category A.
- The RCUs classified as belonging to Category B should make an explicit reference to a specific property that defines the category (e.g., the RCU classified as belonging to the “Anticipate Undergoing Future Turning Point” category should make explicit reference to anticipating undergoing some sort of change or turning point at some time in the future) *and* this RCU should include *no* an explicit reference properties of other categories. If this statement is true, then this RCU belongs in Category B.
- The coders are also instructed to use the same procedures for identifying sub-categories (if any). Identifying sub-categories is a process that occurs concurrently with identifying categories. When a card is turned over, it may be classified as belonging to an existing category or sub-category of a category. If it does not belong to an existing category or sub-category, a new category or sub-category needs to be created. The same guidelines are used for creating sub-categories as for creating categories.

The aim of the grouping process at the sub-category level is the same as at the category level, namely, to come up with the smallest number of content sub-categories within categories whose RCUs not only share the property that defines the category they are assigned to, but also share an additional property within a nested category. If the coders have successfully identified two (or more) sub-categories of responses (e.g., Sub-category 1, Sub-category 2, Sub-category 3, etc.), they should be able to verbally describe (state) the nested properties that each sub-category shares in common (similarities) and the properties that they do not share in common (differences) using the following prototypical statements:

- The RCUs of Sub-category (group) C_2 all make an explicit reference to x (a specific nested property of Category C and also some (but not all) of the RCUs of Sub-category (group) C_2 make an explicit reference to x (a specific nested property of Category C). If this statement is true, then Sub-category C_2 (and group C_2) is qualitatively different from (non-overlapping with) all of the other categories (groups).

For this phase, coders are instructed to repeat this comparison process in an iterative fashion at all levels until no new categories or sub-categories emerge and they arrive at a final set of qualitatively different categories (and sub-categories), i.e., no new categories emerged out of the process and no existing categories were eliminated. This process is called open coding because although the coders are provided with guidelines for the process of coding, there are no restrictions placed on the outcome of the process. There are no restrictions on the number of separate categories the coders may create and use or the number and type of properties that are used in defining the categories. (and

sub-categories) have that are shared (or not shared) with other categories and sub-categories.

Conducting the Macro Interview Response Classification. Once the coders have identified the smallest set of qualitatively different categories (and sub-categories) that define the RCUs, the coders are then asked to reverse the process and use these categories and sub-categories to classify the MIRs. To do so, the coders are provided with a set of MIR cards and provided with instructions to classify the interview responses cards into the categories and sub-categories. The classification into categories is done by classifying (i.e., “matching”) the content of the RCUs (i.e., the descriptive phrases and sentences on the cards) to the category names and category descriptions using the process of comparisons for similarities and differences used in the category identification task. For this task, however, the process is reversed and used to *classify* MIR cards into categories rather than used to *identify* categories in RCUs.

The process begins by sorting (Classifying) the Macro Interview Response cards into categories first and then sorting each of the categories into the appropriate sub-categories, repeating the process for *all* of the sub categories for each of the categories. The only new “categories” introduced as part of this task are “mixed” categories, but “mixed” categories do not actually involved “new” categories, but various mixes of already identified categories.

Mixed Categories. Because any particular Macro Interview Response card may be made up of a variable number of RCUs, it is possible that a particular card will contain multiple RCUs but that all of the units make reference to properties that define only one category. For example, a MIR card may contain several RCUs, all of which describes

various aspects of a past turning point that involved the participant's family in general and father in particular. This MIR defines a relatively "pure" sub-category type that might be classified as, C_{3yz}. A different participant's MIR, on the other hand, may contain several that RCUs, all of which describes various aspects of a past turning point that involved the participant's family *and* also several that that describe various aspects of a past turning point involving peers, categories C_{3x} and C_{3y}. This MIR card defines a "mixed" sub-category type.

Because any particular interview response may be made up of a variable number of RCUs, the assignment of a particular MIR card to a specific category is made based on the following criteria, selected because they are the most conservative criteria.

If a particular MIR card contains at least one RCU that makes explicit reference to the property that defines that Category A (whatever Category A represents) and no RCUs that make explicit reference to the properties that define any of the other categories in the data set, that MIR card is classified as a member of Category A. On the other hand, if a interview response (card) contains at least one RCU that makes reference to the properties that define Category B and no RCUs that make reference to the properties that define any of the other categories in the data set, that MIR card is classified as a member of Category B. Finally, if the MIR card contains RCUs that make explicit references to the properties of both Category A and B, it is classified as Mixed Category A and B.

IQ-DAS Phase II: Theoretical Analysis

Consistent with grounded theory, IQ-DAS considers concepts the basic elements of a theory and "theory" itself as comprised of the hypothesized (the presumed actual) relationships among the concepts (categories/variables). Also consistent with grounded

theory, the Theoretical Analysis phase of IQ-DAS focuses on using “theoretical coding” for the construction and evaluation of theory when no theory exists or the refinement and evaluation of theory when theory already exists.

Task 1: Theoretical Category Coding.

This first phase of the Theoretical analysis is conducted by the theoretical coders (including the investigator) to refine the basic *content* categories and conceptualize them as meaningful with respect to the identified theoretical framework (e.g., psychosocial theory). Within this task, the categories are named (i.e., defined) based on the *theoretical* (rather than content) meaning and description of the content category, assigned by the theoretical coders. The theoretical category coding thus differs from the content category coding in that in the Conceptual Analysis phase, open coding is used to analyze “raw” data and organize the data into content categories/variables whereas, in the Theoretical Analysis phase, theoretical coding is used to make *theoretical meaning* out of the identified groupings of properties of that make up the content categories.

Task 2: Theoretical Category Linking

For IQ-DAS, theoretical category linking is the analytic process through which relationships among concepts (i.e., theoretical categories) are identified. In the Theoretical Category Linking task, the theoretical categories are analyzed and linked based on the theoretically meaningful relationship among them. Consequently, in contrast to Conceptual Analysis, which is a form of “empirical” analysis (i.e., an analysis of data under study), Theoretical Analysis, specifically theoretical category linking, is a form of “theoretical” analysis (i.e., an analysis of the relationship among theoretical categories and variables rather than an analysis of the “data” itself). It should also be noted,

however, that in this context theoretical analysis is still a “data analytic technique” in the sense that concepts (categories and/or variables) identified in the previous phase of data analysis serve as the “data” to be analyzed at this phase of the analysis.

Task 3: Identifying Change Mechanisms

For this task, theoretical coders seek to identify potential causal (e.g., biological or environmental) and pattern (e.g., organizational/structural/systemic) explanations of both variational and transformational change in both instrumental and expressive actions. On the basis of this analysis, plausible theoretical explanations of mechanisms of change in the identified categories/variables (i.e., how the categories are related and how the change is occurring) are generated.

Task 4: Generating Research Hypotheses

After integrating the theoretical hypotheses and explanations of change generated in task two and three, *then* testable transformational and/or variational research hypotheses for evaluating rival theoretical hypotheses that may have emerged from the theoretical analysis are generated.

Theoretical Analysis Procedures

Because our intervention program is theory driven, we use theoretical coders knowledgeable with respect to the theoretical framework(s) under study. The theoretical coding begins by the theoretical coders identifying from among the categories and variables carried over from the conceptual analysis those that are theoretically relevant from the point of view of a specific theoretical perspective. In identifying theoretically relevant categories/variables, the aim is initially to be inclusive rather than exclusive and a category/variable is included in the concept pool if at least one (or more) theoretically

knowledgeable coder considers it relevant (regardless of reason or justification). This set of categories/variables makes up the initial concept pool.

Theoretical Analysis of the pool of content categories involves four tasks, each of which generates a specific type of outcome. Using the method of constant comparison, the theoretical coders are asked to examine the content categories and generate the following four types of outcome: (1) to refine the basic *content* categories and conceptualize them as meaningful with respect to the identified theoretical framework (e.g., psychosocial theory) and give them theoretically meaningful names related to the constructs of the guiding theory (2) identify plausible theoretical hypothesis with respect to possible structural and/functional relationships among the identified categories/variables (i.e., what is the relationship between the categories, or what is changing), (3) plausible theoretical explanations of mechanisms of change in the identified categories/variables (i.e., how the categories are related and how the change is occurring) *and*, after integrating the theoretical hypotheses and explanations of change generated in task two and three, *then* (4) generate testable transformational and/or variational research hypotheses for evaluating rival theoretical hypotheses that may have emerged from the theoretical analysis.

For each of the theoretical coding tasks, the method of constant comparison is used to identify the smallest set of plausible theoretical hypotheses, theoretical explanations, and research hypotheses. Consistent with the unified relational perspective, in generating these three types of outcomes with respect to structural theoretical hypotheses, the focus is on patterns of relationships among categories (i.e., the relational organization, structure, organization, etc. of the categories) and the focus of structural

explanations and structural research hypotheses is on possible noncausal (pattern, structural, organizational, etc.) mechanisms of transformational change. In generating these three types of outcomes with respect to functional theoretical hypotheses, the focus is on the causal, functional, contingent, etc. relationships among variables (dimensional attribute of properties) and the focus of functional explanations and functional research hypotheses is on possible causal mechanisms of variational change in the dimensional attribute of properties in question.

The results of the Theoretical Analysis for each set of responses are recorded and the coders assembled to review and discuss to consensus the smallest possible set of theoretical hypotheses, theoretical explanations, and research hypotheses from the specific theoretical perspective(s) represented by the theoretical coders. The generation of the smallest possible set of theoretical hypotheses, theoretical explanations, and testable transformational and/or variational research hypotheses bring the Theoretical Analysis phase to an end and sets the stage for Research Analysis phase of IQ-DAS.

The use of theoretical category linking during the Theoretical Analysis phase thus provides the basis for theory construction/refinement and evaluation. Depending upon the goal of the theoretical analysis (theory construction and evaluation or theory refinement and evaluation) and the type of data being coded (longitudinal, between groups, experimental, non-experimental, etc.), theoretical coders who are naïve or knowledgeable with respect to the theoretical framework(s) under study (and relevant concepts and categories) are assembled to conduct the Theoretical Analysis.

Conducting the Theoretical Coding for Defining Theoretical Categories. To begin the process of the theoretical coding, the theoretical coders (graduate level

individuals very familiar with the guiding theoretical framework) take the content categories identified during the open coding task and refine and define them based on concepts/constructs that are meaningful with respect to the guiding theoretical framework. The MIRs that are grouped together during the Conceptual Analysis Phase that are based on the content similarities and differences remain in the same category. More specifically, the category of responses (e.g., MIRs 1,6,7&,9-negative self definition) remain together, while the words used to define the properties of the category are refined and defined based on the theoretical constructs (e.g., Negative Identity) and the goals/purpose of the theory (e.g., developmental theory, analyzing developmental change). Content categories may be collapsed (e.g., content category (2) defining self as personal traits in the present and (6) traits and working on identity) as part of the refining process to define the theoretical categories.

Conducting Theoretical Category Linking. Theoretical category linking is based on the outcome of the theoretical coding. Theoretical linking is the analytic process through which theoretical links and patterns of relationships (pattern/structural, causal/functional) among the theoretical categories are identified. To begin the process, the theoretical coders use the method of constant comparison to identify the smallest set of meaningful (and qualitatively different) patterns of relationships among the theoretical categories. Relationships of theoretical categories may also be dimensionalized based on a hierarchical structure where such structure/sequence may exist.

Conducting the Identification of Change Mechanisms. For this task, the theoretical coders analyze the possible explanations (i.e., the mechanisms) of change based on the identified hypothesized theoretical relationships among the theoretical

categories. The coders are investigating potential causal (e.g., biological or environmental) and pattern (e.g., organizational/structural/systemic) explanations of both variational and transformational changes in both instrumental and expressive actions on intraindividual change over time. On the basis of this analysis, plausible theoretical explanations of mechanisms of change in the identified categories/variables (i.e., how the categories are related and how the change is occurring) are generated.

Generating Research Hypotheses After integrating the theoretical links and explanations of change generated in task two and three, the theoretical coders (including the Investigator) *then* identify testable transformational and/or variational research hypotheses. When using a quasi-experimental design it is possible to hypothesize about the differential impact between an experimental and control condition.

IQ-DAS Phase III: Research Analysis

Beginning with the Conceptual Analysis phase, the Research Analysis phase usually ends the core cycle by bringing the data analysis full circle. As in the other phases, during the research phase, IQ-DAS is used to assist in the integrated use of both qualitative and quantitative data analytic techniques -- in this case for testing the research hypotheses. In addition, as in the other phases, IQ-DAS's relational framework serves to facilitate this process because it explicitly avoids privileging either end of the poles that have traditionally split developmental methodology. IQ-DAS's relational framework does this by placing no constraints on the process of switching back and forth between methodological poles (e.g., qualitative → quantitative → qualitative... etc.) as needed to provide appropriate tests of the hypotheses generated by the theoretical analysis.

Conducting Quantitative Research Hypothesis Testing

In testing the quantitative research hypotheses, for example, the theoretical analysis phase may yield testable variational research hypotheses, and these hypotheses may be evaluated using variable oriented statistical methods (Jaccard, 1998; Jaccard & Becker, 1997; Jaccard & Wan, 1996). More specifically, quantitative variables are variables measured on ordinal, interval, or ratio levels (i.e., variables that take on an ordered set of values along some dimension) while qualitative variables are variables measured at the nominal level (i.e., variables comprised of an unordered set of values).

IQ-DAS Core Cycle

- The Conceptual Analysis
 - identifies a set of categories;
- The Theoretical Analysis
 - identifies theoretically categories and meaningful relationships among the theoretical categories,
 - identifies plausible theoretical explanations of change in the relationships among those categories,
 - generates testable research hypotheses to evaluate any rival theoretical hypotheses that have emerged; and
- The Research Analysis
 - evaluates those research hypotheses.

Variable oriented parametric statistical methods may be used to test hypothesized variational relationships among variables (dimensional attribute of properties) within specific probabilistic levels of confidence. In the case of qualitative variables, the basic statistics of interest for variables that involve nominal

measurement are frequencies, proportions, and percentages evaluated using nonparametric statistics. When used with appropriate experimental research methods and controls (e.g., random assignment), the appropriate statistical methods may also be used to test hypotheses concerning the likelihood that co-variation among both qualitative and quantitative variables may be attributed to causality.

As noted, the existence of highly refined research methods and statistical analyses for testing variational/causal hypotheses provided the background against which we

undertook the task of developing IQ-DAS, along with the parallel tasks of developing and refining qualitative measures, research methods, and data analysis strategies that serve the aims of our efforts in evaluating the impact of our programs, namely, evaluating the impact of the programs on transformational change in the meaning and significance of the life course experiences of participants' in the programs. Consequently, although a primary focus of our work has been on developing and refining "qualitative" research measures, methods, and data analytic strategies, we have also explicitly formulated and operationalized IQ-DAS as a framework that would allow the ready integration of *both* quantitative and qualitative analyses at all phases and levels of analysis. This integration of quantitative and qualitative methods, as my previous feasibility study (Lewis Arango, 2001) illustrated, have been particularly useful during the research analysis phase for using quantitative methods for testing hypotheses about the existence of noncausal relationships among categories.

Conducting Qualitative Research Hypothesis Testing

If, on the other hand, the theoretical analysis phase yields qualitative research hypotheses that are not testable using quantitative methods, the research hypotheses may be evaluated using person oriented qualitative methods. In our work, this involves the use *theoretical sampling* and *theoretical saturation* drawn from grounded theory (as adapted for our research). Strauss & Corbin's (1998) define *theoretical sampling* as "Data gathering driven by concepts derived from evolving theory and based on the concept of 'making comparisons,' whose purpose is to go to places, people, or events that will maximize opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions." (p. 201)

We have adopted this basic definition and adapted it for use in IQ-DAS as described in this section. In IQ-DAS, when the Theoretical Analysis yields variational/causal/functional research hypotheses, these research hypotheses can be formulated in ways that render them amenable to analyses of the co-variation among dimensions of the properties of the identified categories. Thus, research hypotheses about relationships among variations in dimensions of properties can often be articulated in forms directly testable (with quantitative statistical method) using the data collected and analyzed during the conceptual and theoretical analyses because these hypotheses are about relationships that emerged from these data. That is, they are rival hypotheses about relationships identified in a particular specific data set in question and therefore testable using that data set.

Qualitative research hypotheses, in contrast, tend to arise in the context of questions and issues about the properties of the categories themselves and/or the relationships among them. For example, a question may arise as to whether a particular category is fully articulated with respect to its properties and dimensions. Alternatively, a question may arise as to whether the relationships among categories (or properties within categories) are plausible and clearly articulated. Such questions most often cannot be answered by data already collected because it is the adequacy of the data itself that is being questioned.

In grounded theory, this type of question (research hypothesis) may be evaluated using a type of data that is collected by a method that in grounded theory is termed theoretical sampling. For IQ-DAS, the type of data to be collected using theoretical sampling is guided by the theoretical research hypotheses generated in the previous

phase. The aim of theoretical sampling is to collect data that maximize opportunities to test theoretical research hypotheses by comparing how patterns of relationships among categories (i.e., the relational organization, structure, organization, etc. of the categories) vary in the new data that is collected relative to the patterns hypothesized based on the analysis of the previously collected data. If the data to be analyzed are longitudinal, the aim is to determine how patterns of relationships among categories differ or vary over time, i.e., to evaluate qualitative changes in patterns over time. If the data are between groups (experimental or non-experimental), the aim is to determine how patterns of relationships among categories differ or vary across conditions (e.g., contexts, events, incidents, happenings, etc.), i.e., to evaluate qualitative differences across conditions. It should be noted that in testing qualitative hypotheses, variation in relationships among patterns of categories over time or across condition are, for theoretical reasons, assumed to be involve structural transformations rather than causal relations (if the relations are assumed to be causal, then the very idea of a pattern hypothesis is rendered meaningless), but this assumption obviously does not rule out the possibility that the relations may be open to causal interpretation (and tests).

It should also be noted that the need to collect additional or “new” data at this phase of the analysis differs from the need to collect “new” data that sometimes occurs during earlier phases. During the conceptual and theoretical phases of analysis, for example, the need to collect new data arises from the lack of finding/results from the conceptual analysis (e.g., no relevant or meaningful new categories or variables) or a lack of findings/results from the theoretical analysis (i.e., no relevant for meaningful theoretical or research hypotheses). The result is sometimes the need for backward

movement through the core cycle and the collection of new data (with the possibility of new findings/results from this re-analysis or new data collection altering the direction of the cycle). This type of data collection does not involve theoretical sampling because at this point there is no theory to guide the collection of the “new” data. This data collection is done as part of the process of generating theory rather than refining or evaluating theory.

Qualitative research hypotheses that arise during the research analysis phase, in contrast, cannot be answered by data already collected because it is the adequacy of the data itself that is being questioned. Because the type of data to be collected during this phase must be guided by the theoretical research hypotheses generated in the previous phase, this type of “new” data differ from the type of “new” data collected during earlier in that these data are collected to move the analysis cycle forward rather than move backward through the cycle.

Theoretical sampling thus provides a method for testing qualitative pattern hypotheses that moves the cycle forward, and theoretical saturation provides the criteria by which to determine how much data we need to sample before we can consider a particular research hypotheses confirmed (or not confirmed). With respect to *theoretical saturation*, Strauss & Corbin’s (1998) recommend that sampling continue “...until (a) no new or relevant data seem to emerge regarding a category, (b) the category is well developed in terms of its properties and dimensions demonstrating variation, and (c) the relationships among categories are well established and validated.” (p. 212) Thus, if a transformational (developmental) change is hypothesized to take place across repeated measures and if at the point of theoretical saturation the new hypothesized categories

and/or relationships among the categories *have not* emerged, then the hypothesized pattern is not confirmed. On the other hand, if at the point of theoretical saturation the new hypothesized categories and/or relationships among the categories *have* emerged, then the hypothesized transformational change is confirmed.

Reciprocal and Cyclical Movement Through the Core Cycle

For purposes of illustration, the description in this section illustrated the basic forward movement through three analytic phases of the core cycle of IQ-DAS (Conceptual, Theoretical, and Research Analysis). This illustration was only intended to provide general directional guidelines for applying the framework. In its implementation, movement through the core cycle of IQ-DAS is, as noted, usually reciprocal as well as cyclical, with conceptual, theoretical, and empirical finding/results generating new iterations of analysis and/or re-cycling through previous analytic phases in a dialectical fashion. Thus, for example, an IQ-DAS cycle that begins at the conceptual analysis phase of the cycle with an open coding of qualitative data may identify a set of categories/variables that, during the subsequent theoretical analysis, may *not* provide enough theoretically meaningful and/or relevant information to identify plausible theoretical hypotheses about the pattern, organization, or structure among the identified categories *or* theoretical hypotheses about the causal, functional, or contingent relationships among the identified variables. In this case, the result may be the need to collect additional data of the same type or additional data of an alternative type and to return the conceptual analysis phase to identify a new set of categories/variables.

Alternatively, the open coding may identify a set of categories/variables that during the subsequent theoretical analysis provides enough theoretically meaningful

and/or relevant information to generate plausible theoretical and/or research hypotheses about the pattern, organization, or structure among the identified categories *or* theoretical and/or research hypotheses about the causal, functional, contingent relationships among the identified variables, resulting in movement to the next phase of the cycle, the research analysis phase. The hypotheses testing that takes place during the research analysis phases, in turn, may fail to support the research hypotheses, resulting in the need to return to a previous conceptual or theoretical analysis phase (or even data collection) to identify new categories and/or generate theoretical and/or research hypotheses.

Thus, unlike a split framework, a relational data analytic framework such as IQ-DAS does not privilege one pole of the splits over the other. As a consequent, the use of a relational framework eliminates the need for a researcher to decide in advance which pole of the data analytic strategies to use in a particular research study. Rather, a relational framework requires that the researcher proactively explore the most appropriate data analytic strategies throughout the entire data analysis process.

Promoting Positive Development: Change for the Better

Treatment intervention programs, that specifically target identified problem behaviors may be appropriately evaluated in terms of whether they significantly reduce identified problem behaviors using quantitative measures and variable oriented data analytic strategies. Prevention intervention programs similarly specifically target risk and protective factors identified as probable antecedents of negative developmental outcomes and may also appropriately be evaluated in terms of whether they significantly reduce risk and/or increase protective factors.

The aim of youth development programs, in contrast, is to promote “positive” development and consequently youth development programs lack the specificity of treatment and prevention programs. Youth development programs often emerge in response to issues and concerns that are local and particular, culturally bound, and historically situated. Because of this, the aim of youth development programs is to promote “positive” development where the meaning and significance of the concept of “positive” is determined by a complex interaction of locally, culturally, historically, and developmentally relevant factors.

When employed as universal interventions (e.g., 4-H, Girl/Boy Scouts, etc.) the most general aim of youth development programs is to enrich and enhance the normative course of development in a multitude of ways (specified and not specified) that are locally, culturally, contextually, and developmentally meaningful and significant (Mulkeen & Markstrom, 2001). The goal of universal positive development interventions (i.e., interventions that do not specifically target identified behavior problems or “at risk” youth) is thus to intervene across a broad and diverse array of specific and non-specific positive development constructs to promote, enrich, and enhance ongoing progress along an already positive life course. That is, the goal is not to change lives; on the contrary, the goal is to “hold the course” and, if possible, enrich and enhance progress along the way. In this context, positive development intervention programs that target quantifiable positive development constructs may be appropriately evaluated in terms of whether they significantly increase identified positive development domains using quantitative measures and variable oriented data analytic strategies.

The emphasis on short-term outcome studies using quantitative measures and variable oriented data analytic strategies that characterizes the literature on treatment, prevention, and positive intervention programs, though useful in many ways, places methodological limits on the types of questions we can ask and the types of answers we can obtain, particularly in evaluating positive development programs that target troubled youth. We use the term troubled youth to describe the population we work with (and develop interventions for) as an alternative to the terms “behavior problem” youth or “at-risk” youth. In the youth development programs that we have been developing for the “troubled” youth we work with are drawn from the same general population as the behavior problem and at risk youth targeted by treatment and prevention programs and, like those youth, as a population they exhibit a full spectrum of the behavior problems and risk factors. In contrast to treatment and prevention programs that target specific types of behavior problems or risk factors, however, the programs we have been developing do not target specific behavior problems or risk factors; rather, the focus of our program is on promoting positive development. Our programs provide (as needed and available) selected interventions that target specific behavior problems and risk factors, but reducing behavior problems and risk factors is not our main goal.

Like universal youth development programs, our programs focus on promoting positive development, but in contrast to programs that aim at facilitating development along a life course pathway that is already proceeding in a positive direction, our programs aim at altering or changing the course of lives that are proceeding in a negative direction. When employed as selective interventions (i.e., with troubled youth), the aim of our programs is thus to alter or change the direction of the “negative” life course

pathways of the youth in our programs. That is, the aim of our programs is to change the lives of troubled young people for the better where “change” means a qualitative change in direction (e.g., from negative to positive) and where “for the better” (negative to positive) is to be understood in ways that are particularly local (i.e., in ways that are relative to each individual’s specific life course trajectory at the time of entry into the program) as well as culturally, historically, and developmentally appropriate. Our goal is thus to *promote qualitative change in the direction of participants lives in ways that are individually, culturally, historically, and developmentally meaningful and significant*. We consequently consider our programs to be open-ended responses that target the intersection of the developmental and historical moment – changing lives and changing times (Lerner, et al. 2000).

Evaluating Youth Development Programs

In looking at the literature from this perspective, it becomes clear that although there are many things that we know about youth development programs (as well as many things we do not know), perhaps one of the most important that we do not know is whether youth development programs are effective in changing the lives of the young people for whom they are being developed. Thus, although a growing literature provides consistent support for the impact of youth development programs, little is known about whether such programs actually help to turn their lives around. Whether such interventions result in qualitative change in the direction of participants lives in ways that are individually, culturally, historically, and developmentally meaningful and significant is, at this point, essentially an empirically unanswered question.

The integration of data analytic strategies described above, IQ-DAS, provides a framework for the integration of quantitative and qualitative methods in analyzing transformational change at the life course level. IQ-DAS, as we have been developing it, also provides the general framework for our ongoing efforts in developing methods for evaluating life course change for populations in treatment and the specific framework for the research proposed here. As noted, the aim of this study is to continue my previous work on developing and refining a qualitative measure and scoring method for indexing the type of phenomena we consider important in evaluating our programs for troubled youth.

The Changing Lives Program (CLP)

This study was conducted as part of the Changing Lives Program (CLP), a school based intervention that targets troubled adolescents. The Changing Lives Program was developed as part of an ongoing program of transformative co-constructivist theory and applied developmental research focusing on promoting positive development (Berman, et al., 2001; Ferrer-Wreder et al., 2002; Milnitsky, C., et al., 2001a; Milnitsky, et al., 2001b). This CLP intervention is undergoing development with a multiethnic population of troubled high school youth with a history of attendance, behavior, or motivational problems in school (Berman, Kurtines, Silverman, & Serafini, 1996).

A previous feasibility study (Lewis Arango, 2001) sought to document the utility of the use of the LCI as a qualitative performance measure for indexing transformational change at the life course level. The study used IQ-DAS as a framework for integrating the use of these qualitative measures with the use of both qualitative and quantitative data analysis strategies. In addition, the feasibility study documented the utility of IQ-DAS as

framework for evaluating the impact of the interventions on qualitative change in participants lives that are individually, culturally, historically, and developmentally meaningful and significant. Finally, the feasibility study illustrated the utility of IQ-DAS as framework for conceptualizing *and* implementing integrated applications of *both* qualitative and quantitative data analysis in the service of applied developmental goals in general and positive development goals in particular.

In seeking to promote positive development by creating contexts in which these troubled young people can change their lives, the CLP draws its developmental framework from both psychosocial developmental theory (Erikson, 1968) and life course theory (Elder, 1998) which we refer to as a psychosocial developmental life course approach. From psychosocial developmental theory, this approach adopts the view of adolescence as the developmental stage at which the individual is first confronted with, systematically and seriously, addressing the complex and difficult challenge (and responsibility) of choosing the goals, roles, and beliefs about the world that give the individual's life direction and purpose as well as coherence and integration. From life course theory, it adopts an emphasis on how individuals construct their own life course through the choices and actions they make within the constraints and opportunities of history and social circumstances. In line with Eriksonian theory, the CLP not only targets (and seeks to resolve) identity issues of the developmental moment but also is aimed at fostering developmental domains of functioning that are foundational to successfully meeting other challenges across the life span (Waterman, 1994). The psychosocial developmental life course approach of CLP, however, draws on life course theory to extend Eriksonian theory to include the view that intraindividual change after childhood

is less developmentally predictable than has usually been described in Erikson's approach. Rather, in adapting the view of identity as a “steering mechanism” for life course change, a psychosocial developmental life course approach emphasizes the self-directed nature of change in adolescence and adulthood consistent with life course theory (Elder, 1998) and the emerging view of individuals as producers of their development (Brandtstaedter & Lerner, 1999; Lerner & Busch-Rossnagel, 1981).

The Life Course Interview (LCI)

The LCI feasibility study (Lewis Arango, 2001) investigated the utility of using the Life Course Interview (LCI) as part of our CLP program evaluation efforts. The LCI is an open-ended “full” response (response data are not constrained or limited in length or detail) performance (designed to “test the limits” of respondents capacity to generate and articulate a coherent narrative description). To this basic narrative structure the LCI adds seven Themes with corresponding standardized questions and follow-up probes (drawn from psychosocial developmental theory and life course theory) that provides a method for eliciting participants’ subjective and open-ended descriptions of the meaning and significance of the most important themes that define their life course (past, present, and future).

Response data from the LCI can be analyzed either between groups or longitudinally. When analyzed between groups, response data from the LCI provides a method for identifying and evaluating qualitative *differences* in participants’ current *life status*; when analyzed longitudinally, response data from the LCI provides a method for identifying and evaluating qualitative *change* in participants’ *life course*.

Research Goals

There has been an increasing recognition that interventions targeting troubled youth need to do more than "treat" problem behaviors (i.e., symptoms) or "prevent" negative developmental outcomes (Lerner, Fisher, & Weinberg, 2000). As a result, a growing literature focusing on interventions that seek to *promote positive development* has emerged (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 1999). When employed as selective interventions (i.e., with troubled youth), the aim of such programs is to alter or change the direction of the life course pathways of the youth in the programs. The current emphasis on the use of short-term outcome studies using quantitative measures and variable oriented data analytic strategies, however, places methodological limits on the types of questions we can ask and the types of answers we can obtain when evaluating such intervention programs, particularly with respect to qualitative long term change in the direction of participants life course pathways (Elder, 1998).

Consequently, the overall purpose of our ongoing program of research (Kurtines, Lewis-Arango, Kortsch, in press) has been to draw on recent advances in the concept of development and developmental methodology (Overton, 1998) and the use of qualitative research methods in the human sciences (Denzin & Lincoln, 2000) in an effort to develop qualitative measures and an integrative data analytic strategy that has the potential for capturing and reporting the subjective experiences of the participants in youth interventions that target changing negative life course pathways.

The measures and data analytic strategies that we have been developing as part of our program of research represent what we consider to be a significant first step in beginning to extend the literature beyond the question of whether intervention programs

targeting troubled youth reduce behavior problems and increase protective factors (i.e., efficacy) to begin the address the issue of how to document the impact of such programs on changing the negative life course pathways of the young people who participate in them. Thus, despite the availability of new perspectives on the concept of development and developmental methodology (Overton, 1998) and the enormous growth in the literature on qualitative methods (Creswell, 2003; Lincoln, Guba, 2000; Patton, 2002), the use of qualitative measures and integrative data analytic strategies in evaluating the impact of interventions on developmental change is sparse. Indeed, with respect to evaluating the impact of youth development programs on life course pathways, our program of research (Kurtines, Lewis-Arango, Kortsch, in press) is (to our knowledge) the only one to empirically document the impact that such programs have on qualitative change in the subjective meaning and significance of participants' life course experiences in ways that are individually as well as culturally, historically and developmentally meaningful and significant.

In this context, as described next, the overarching goals of the research reported here were threefold: practical, methodological, and theoretical.

The first goal, which was practical, was to report the first controlled study to examine the impact of a school based youth development program on promoting transformational (qualitative) change in the subjective meaning and significance of life course experiences on positive identity development as a positive intervention outcome. More specifically, this study investigated the utility of a free response qualitative interview, the Life Course Interview (Clausen, 1998), and integrated data analytic strategies (Kurtines, Lewis-Arango, Kortsch, in press), in providing empirical

documentation of the impact of the youth development program on qualitative change in positive identity development in a multicultural population of troubled youth in an alternative public high program relative to a comparison control group of troubled youth at the same high school not participating in the youth development program.

A second and even more challenging goal of the research reported here was methodological. Our goal was to make a contribution to integrating the split that has come to characterize the scientific study of human development by developing methods and procedures to help transform our perspective on *what* changes in human development (i.e., whether observed ontogenetic change in humans represents changes in expressive-constitutive actions or changes instrumental-communicative actions) and *how* it changes (i.e., whether change is transformational or variational).

A third and equally challenging goal was theoretical. The troubled youth in the Changing Lives Program defined the population in which we sought to promote positive development and IQ-DAS provided a methodological framework for guiding our efforts to evaluate the success of the program. The primary theoretical challenge for our program of research was in adapting, adopting, and refining a theoretical framework to guide our understanding of *what* to change and *how* to change it. Our experience has been that these two theoretical questions are highly interrelated and our strategy was to move forward in both areas simultaneously.

This study drew on our ongoing program of research in attempting to achieve these practical, methodological, and theoretical goals by developing and refining a framework that was intended to provide a set of integrated data analytic strategies (IQ-DAS; Integrated Qualitative/Quantitative Data Analytic Strategies) for use in the

quantitative (causal) analysis of variational change in instrumental action and the qualitative (pattern) analysis of transformative change in expressive action (Kurtines, Lewis Arango, Kortsch, in press).

III. METHODOLOGY

Purpose of the Study

The specific aim of this study was to continue the promising line of research that emerged out of the previous feasibility study (Lewis Arango, 2001). This study was intended to investigate further and extend the previous findings by addressing two basic limitations of the feasibility study, viz., the use of a between groups design and the small number of participants. More specifically, to address these issues, an exploratory/developmental study was conducted using a quasi-experimental design (pre-post comparison control condition design) that included the use of a short-term (two semester) longitudinal design to examine the impact of a Changing Lives Program on promoting transformational (qualitative) change in the subjective meaning and significance of life course experiences on positive identity development. This study thus sought to provide the first empirical evidence from a controlled study designed to document the impact that youth development programs have on qualitative change in the subjective meaning and significance participants' life course experiences.

As noted, when analyzed longitudinally, response data from the LCI provides a method for identifying and evaluating qualitative *change* in participants' *life course* (as opposed to difference in the between groups design). In this context, the aim of the proposed study was to continue the previous work on developing and refining a qualitative measure and scoring method for indexing the type of phenomena we consider important in evaluating our programs for troubled youth. The qualitative measure the investigator has been developing and refining is explicitly *conceptualized* as indexing the subjective meaning and significance of participants' life course experiences and is

operationalized as an index of qualitative change. The proposed study is intended to take the next step bringing this agenda along.

Experimental Design

This study used a short-term longitudinal quasi-experimental research design with a comparison control group.

Participants

Participants (N=32) were an archival sample drawn from the Youth Development Project's data files. Twenty-two high school adolescents who participated the Changing Lives Program at a voluntary alternative public high school, the Academy for Community Education (ACE) during the academic year 2001-2002 comprised the intervention group. Ten high school adolescents who participated as research controls (and were remunerated for their participation) but did not participate in any of the intervention programs comprised the comparison control group. The multiethnic sample of participants was compromised of 9 (28.1 %) African American, 18 (58.1 % Hispanic, and 5 (12.5%) White/non Hispanic with 16 (50%) females and 16 (50%) males which is typical of the school's demographic make-up. The age of the participants ranged from 14 to 19 years of age.

Intervention Setting

Following school procedures, the CLP counseling groups were implemented through the school guidance office as part of the school's ongoing counseling program. Each group that the students in the intervention condition participated in had 6 to 8 members and met one time a week for one hour during the Fall 2001 and Spring 2002 semesters. All of the students in the control condition were identified by the school

counselor as having not participated in any of the counseling and guidance programs prior to or during the semester in question.

Measure

The primary measure used for this study was the Life Course Interview (LCI), which was administered to participants in both the intervention and control conditions at the beginning of the fall semester 2001 and at the end of the Spring semester 2002. Undergraduate psychology students trained in the administration of the LCI conducted and transcribed the interviews. The Life Course Interview (LCI) builds on Clausen's (1993; 1995; 1998) pioneering work on the use of Life Reviews and Life Stories in life course research for the methods and procedures that it uses to elicit participants' qualitative descriptions of their life course experiences. As described in more detail previously, the individual's responses to the LCI are audio recorded and used to generate a Life Course Record (LCR). For this study, the data from the 62 LCRs were analyzed using IQ-DAS as described next.

Data Analysis Plan

Procedures

The data was analyzed using IQ-DAS as modified and outlined next. IQ-DAS is a method of data analysis that provides a relational framework for the integration of qualitative and quantitative data analytic strategies. This section describes the specific procedures that were used in the analysis of the LCR response data from two of the LCI questions for each of the three basic analytic phases of the core cycle of IQ-DAS (Conceptual, Theoretical, and Research Analysis) (see Figure 1). The subsequent section reports the results obtained from each phase of the data analysis.

Phase I Conceptual Analysis Phase

The Conceptual Analysis Phase of IQ-DAS used open coding and the method of constant comparison to identify the smallest set of qualitatively different categories/-variables in a particular data set. Because IQ-DAS was applied to data obtained from a relatively unstructured source (the LCR interview transcriptions), the Conceptual Analysis served as the first phase in this study. Undergraduate psychology students were recruited through the psychology department at Florida International University and served as coders following a brief training in conducting a Conceptual Analysis.

As described above, the first task of the Conceptual Analysis Phase consists of *Category Identification*, a type of open coding of the RCUs used to identify the smallest number of core content categories that define the individual descriptive phrases and sentences that participants use to describe the meaning and significance of their life course experiences. As noted, for this task, these data are grouped into core (non-overlapping) categories (and sub-categories) based on the similarities and difference in the properties of the RCUs.

The second task of open coding, *Macro Interview Response Classification*, involved the use of the core categories (and sub-categories) identified during the category identification to classify each participant's MIRs into the identified categories and sub-categories. The results of the open coding provided the building blocks for the theoretical analysis phase that follows.

Phase II Theoretical Analysis Phase

The Theoretical Analysis Phase of IQ-DAS used theoretical coding and the method of constant comparison (as adapted for our research) to identify the smallest set of theoretically meaningful (and qualitatively different) theoretical categories, and theoretical patterns of relationships (pattern/structural, causal/functional) among the identified categories/variables. The Theoretical Analysis served as the second phase of IQ-DAS for this study and it consisted of a theoretical coding of final set of theoretical categories identified in the Conceptual Analysis Phase. The coders who conducted the Theoretical Analysis (including the investigator) were knowledgeable with respect to the theoretical approaches that provided the framework for the CLP, namely, life-span psychosocial developmental theory and life course theory. In seeking to generate theoretical hypotheses about relationships among categories that were consistent with already existing theories, the outcome of the Theoretical Analysis (which represented the consensus of available theoretically knowledgeable coders) provided a working “best approximation” of representative theoretical hypotheses. Following IQ-DAS procedures, coders were instructed to examine the concept pool and generate plausible theoretical 1) categories 2) theoretical relationships among the categories/variables, 3) theoretical mechanisms of change, and 4) testable research hypotheses.

To begin the process of the theoretical analysis, *Theoretical Coding*, the theoretical coders took the content categories identified during the open coding task and refined and defined them based on the concepts/constructs that were meaningful with respect to the theoretical framework of Erickson’s psychosocial developmental theory and Elder’s life course theory. The MIRs that were grouped together during the

Conceptual Analysis Phase that were based on the content similarities and differences remained in the same category.

Working from the categories identified in the theoretical coding, the theoretical coders conducted the *Theoretical Category Linking* to generate plausible theoretical hypothesis with respect to possible structural and/or functional relationships among the identified categories/variables from the perspective of the two guiding theoretical approaches. By means of this process, each coder identified what was considered the smallest possible set of qualitatively different set of theoretically meaningful relationships among categories/variables that they considered consistent with the theoretical approaches. That is, each coder articulated properties of the hypothesized patterns of relationships among the categories/variables that were not shared with other hypothesized patterns and therefore could not be combined [collapsed or expanded] with other hypothesized patterns.

The theoretical coders similarly conducted the *Identification of Change Mechanisms*. This task of the Theoretical Analysis was thus used to identify plausible theoretical explanations of mechanisms of change in the identified theoretical categories/variables. This included identifying dimensionality and directionality of the range of variability among the categories for each question using a psychosocial developmental life course framework. The results from each of the two Theoretical coders were recorded and discussed to identify the smallest number of theoretically meaningful and significant (but not overlapping) possible mechanisms of change. Hypothesized mechanisms of change about which consensus could not be achieved were not carried forward.

For the *Generating Research Hypotheses* task of the Theoretical Analysis phase, the theoretical coders worked together to integrate the hypothesized theoretical relationships among the categories/variables and the explanations of change generated by the first three tasks in the theoretical analysis, and generated testable transformational and/or variational research hypotheses for evaluating rival hypotheses about the relationships among the categories/variables and/or possible mechanism of change that may have emerged from the theoretical analysis. The generation of testable research hypotheses ended the Theoretical Analysis phase and sets the stage for Research Analysis phase of IQ-DAS.

Phase III Research Analysis Phase

The Research Analysis phase of IQ-DAS brought the core cycle of data analysis full circle because the empirical finding/results that were obtained from the research analysis phase either: 1) failed to confirm or support the theoretical hypotheses generated by the theoretical analysis and therefore failed to support the utility of the current direction of research (i.e., failed to generate new iterations of the current core cycle), 2) successfully confirm or support the theoretical hypotheses generated by the theoretical analysis and resolved the theoretical research questions that initiated the core cycle but failed to generate new iterations of core cycle, 3) successfully confirmed or supported the theoretical hypotheses generated by the theoretical analysis, resolved the theoretical research questions that initiated the core cycle, and generated new iterations of core cycle that build on the findings that resulted from the operation of this cycle of IQ-DAS. It is this third outcome that generated the potential for transforming the core cycle's relational circle into a directional spiral.

During the research Analysis Phase, the testable qualitative and/or quantitative hypotheses generated by the theoretical analysis were evaluated using appropriate analytic methods. That is, since the theoretical analysis phase yielded testable variational research hypotheses, these hypotheses were evaluated using appropriate variable oriented statistical methods.

IV. RESULTS

This section presents the results of the application of IQ-DAS to the LCI MIRs.

The Conceptual Analysis was conducted using the procedures (described above) for IQ-DAS for the content coding of open-ended (unstructured) free response data from the LCI Theme, Personal Identity/Question #3 (Who Am I?) and LCI Theme, Life Turning Point/Question #4 (Present Turning Point?). The Conceptual Analysis was followed by the Theoretical Analysis, again using the procedures (described above) for IQ-DAS for theoretical coding, theoretical linking, identifying change mechanisms, and generating research hypotheses, followed by the Research Analysis phase. The data set included a total of 128 data points. That is, two questions over two Times (Pre and Post) by two Conditions (Intervention, N=22 and Control, N=10).

IQ-DAS Application to the LCI Theme, Personal Identity

This section will describe the results of the application of the IQ-DAS to the analysis of the LCI Theme Personal Identity/Question #3, Who Am I?

Phase I Conceptual Analysis: LCI Theme, Personal Identity

Content Category Identification

For the first task in the Conceptual Analysis Phase, working blind to Time and Condition, the coders (three psychology undergraduate students), through a process of open coding, identified a preliminary initial set of 6 core categories of RCUs. The aim of this task was to use the method of constant comparison to identify the smallest set of qualitatively different (non-overlapping) content categories that defined the RCUs (i.e., the descriptive phrases and sentences) that made up a particular data set. Following

established procedures, the conceptual coders were instructed to identify a set of *content* categories.

For identifying the initial set of core content categories, groupings (categories) were formed by comparing the similarities and differences of the properties of the content (phrases and sentences) of the RCUs for all MIRs and were formed on the basis of the shared properties not on the basis of theoretical meaning. Using the procedures described above, the coders identified an initial set of 6 core content categories that were listed in no particular order/structure:

1. Unsure, not working on identity issues.
2. Defining self as personal traits in the present.
3. Defining self in terms of expectations of others.
4. Negative self-definition.
5. Traits and expectations of others.
6. Traits and working on identity.

Macro Interview Response Classification

After the coders identified the smallest set of qualitatively different categories that defined the RCU's, the coders were instructed to reverse the process and use the categories to classify the MIRs. Each participant response for both Conditions (experimental and control) and Time (both pre and post) were classified into the identified content categories and recorded. This grouping of the MIRs into the content categories provided the basis for the next phase (i.e., Theoretical Analysis) of the analysis.

Phase II Theoretical Analysis: LCI Theme, Personal Identity

Theoretical Category Coding: Personal Identity

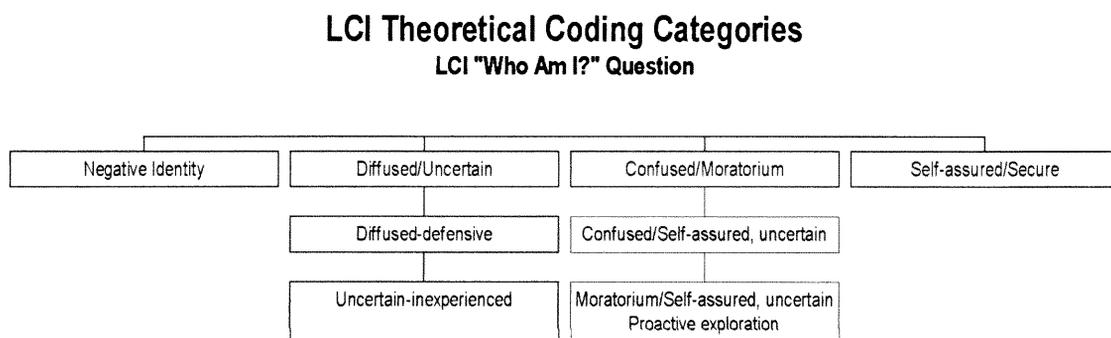
The initial set of content categories provided the data for the Theoretical Analysis that followed. Consistent with grounded theory, the Theoretical Analysis phase of IQ-DAS focused on using “theoretical coding” for the construction and evaluation of theory when no theory exists or the refinement and evaluation of theory when theory already exists. For IQ-DAS, theoretical coding was the analytic process through which content categories were refined into theoretical categories.

The theoretical coders (the investigator and a Ph.D. level Psychologist) reviewed the entire data set (64 MIRs) for the Who Am I question as they were grouped in each of the content categories to gain an understanding of what the coders identified as the defining properties. The theoretical coders then analyzed and synthesized the content descriptions of the categories with respect to their understanding of the purpose and goals of Erickson’s psychosocial developmental theory as relevant to this theoretical context, namely providing an account of the process of identity formation. For the purpose of the analysis of the developmental process of identity formation and changes with this developmental process, the theoretical coders identified four theoretical categories; some with associated sub-categories, by either collapsing or re-naming the content categories. The content category Negative self-definition was named Negative Identity. The content category Unsure, not working on identity issues was named Uncertain/Diffused with sub-categories of Diffused/Defensive and Uncertain/Inexperienced. The content categories, Traits and expectations of others and Defining self in terms of expectations of others, was collapsed and named Confused/Moratorium. Finally, the content categories, Defining

self as personal traits in the present and Traits and working on identity were collapsed and named Self-Assured/Secure.

Thus, the theoretical category coding for the Personal Identity Theme resulted in the identification of four core theoretical categories (Negative Identity, Diffused/Uncertain, Confused/Moratorium, Self-assured/Secure) and associated sub-categories. The organizational structure of the categories and sub-categories was moderately complex. Figure 3 presents the organizational structure of the categories and sub-categories graphically.

Figure 3 Personal Identity Theoretical Categories



Category Names and Descriptions: Personal Identity

As mentioned previously, through theoretical analysis of the identified *content* categories, the theoretical coders identified four core *theoretical* categories (Negative Identity, Uncertain-Diffused, Uncertain-Moratorium, Self-assured/Secure) and a distinct set of properties for each of the four core theoretical categories and associated sub-categories based on the properties identified and grouped for similarity and difference during the open and theoretical coding task.

The theoretical category descriptions (i.e., the descriptions of the properties of the categories) were as follows: The primary property of the core category of the Self-assured/Secure was clarity and consolidation of self that was self-assured and positive. The primary property of the core category of Uncertain-Moratorium was lack of clarity and consolidation of self with nested sub-categories characterized as either Confused (self-assured but uncertain) or Moratorium (self-assured but uncertain and undergoing proactive exploration). The primary property of the core category of Uncertain-Diffused was also lack of clarity and consolidation of self with sub-categories characterized as either Uncertain (inexperienced, lacking in self-assurance, non-defensive, and positive) or Diffused (lacking in self-assurance, defensive, and negative). The primary property of the core category of Negative Identity was also lack of clarity and consolidation with respect to a positive sense of self but with a high degree of clarity and consolidation with respect to a negative sense of self.

This section provides a description of core theoretical categories and sub-categories.

Negative Identity.

The primary property of the core category of Negative Identity was a lack of clarity and consolidation with respect to a positive sense of self but with a high degree of clarity and consolidation with respect to a negative sense of self. Negative self-descriptions tended to occur infrequently in response to the LCI, and in this data set the coders identified only one MIR as belonging to the category of Negative Identity. Although there was only one MIR classified as belonging to it, the coders agreed that the property that made it different from all of the other responses in this data set (including

other MIRs that made explicit reference to negative content) was that the negative content was explicitly evaluative of the *overall* quality of the participants' life with little (if any) qualification to the negativity of the description, and with the *absence* of an articulation of positive content. They thus considered it a legitimate category with an identifiable property that made it qualitatively difference from the other categories.

In response to the question "Who Am I?", for example, the participant responded, *"I am a very mad person. I only like Carla, my band, my family, and sleeping. That's it. I hate everything else usually. I am very hard headed, always mad usually, and very picky of the people I hang around with like the people I call friends. I am very picky when it comes to that. I don't know. I really don't know. Just little things about a person will piss me off or something I see will put me in a bad mood for the rest of the day."*

Uncertain/Diffused.

The primary property of the core category of Uncertain-Diffused was also lack of clarity and consolidation of self, with MIRs with this type of content being further identified as belonging to one of two sub-categories: Uncertain (inexperienced, lacking in self-assurance, but non-defensive) or Diffused (lacking in self-assurance, defensive, and negative). Both sub-categories shared the core property of being characterized by a sense of identity that was relatively unconsolidated and in transition (i.e., diffused) and/or about which participants were uncertain. They differed, however, in that the content of one sub-category of RCUs, which the coders identified as Diffused -- Defensive, included defensive negative content in addition to a description of personal identity characterized as being uncertain.

Diffused--Defensive. Although this sub-category, like the Negative Identity category, included negative content, the negative content differed from the negative content of the Negative Identity category in that the negativity was *not* mainly directed to the either specific aspects of or overall quality of the individual's life. Rather, it tended to be defensively negative in response to the recognition of the participant's uncertainty with respect to her/his sense of identity and avoidance of the issue rather than directed at what one perceives as the actual negative quality of one's life. That is, the negative content associated with this category tended to occur in the form of a defensive reaction to the individual's inability to articulate a clear vision of the self.

In response to the question, "Who Am I?", for example, one participant observed, *"I don't know, I'm me. I don't know. I hate when they ask me that. They always ask me that question. I just feel like I'm myself, I'm me. Shit! Cause I'm myself, I'm not like nobody else. I'm just me. That's who I am."* In this case, the negativity of the content is directed toward trying to justify not providing (or not being able to provide) a positive answer to the identity question.

Another participant similarly responded by providing negative content about herself and then defensively trying to avoid providing a positive answer to the identity question, *"Like I use drugs. I like...you know... I use drugs. Also, I'm sort of what you would call a nympho. I love sex at all times. It's actually a problem. I actually went to counseling for it. I like I think about sex, like you know, more than normal people. And like every time I see my boyfriend...I'm like...hey you know, but that's just pretty much who I am."*

Uncertain--Inexperienced. In contrast to the Diffused -- Defensive sub-category, this sub-category tended not to be characterized by defensive negative content (i.e., if the RCUs contained negative content, the content was non-defensive, thus differing from both the Negative Identity category and Diffused -- Defensive sub-category). In this sub-category, when there was negative content, it appeared as a descriptive of a specific aspect (dimension, element, etc.) of the quality of the person's life (life event, etc.) rather than about either the *overall* quality of the person's life or being defensive about not having a clear sense of vision for one's self. In addition, RCUs in this category also tended to share the *uncertainty* that characterized the Diffused -- Defensive category (but not the Negative Identity category).

One participant, for example, commented, "*Mainly I'm just me but like ... I'm just a very spontaneous person. Like, I used to be before this negative impact happened that it changed my life dramatically. I'm not all that happy. Like if I could divide the happiness and the negative part of my life I'd say happy would be 20%. (Right now, you mean?) Yeah. Like as far as me getting over what happened to me earlier this year, I got over it but, I don't know. I'm not a very happy person anymore. Like, to this moment, unless, something dramatic happens and probably heightens my life again or will enlighten me again.*"

The other kind of RCUs identified as belonging to the Uncertain--Inexperienced sub-category was characterized by a type of un-defensive uncertainty rooted in the type of inexperience typical of younger and/or less outgoing high school students, i.e., a type of non-defensive uncertainty associated with inexperience rather than negative experience. This type of RCU lacked the defensively negative content that characterized

both the Negative Identity category and the Diffused—Defensively Uncertain sub-category of this category but shared the lack of the clarity of vision with respect to positive qualities of a more consolidated and secure sense of identity, the other property associated with the Diffused/Uncertain category.

The MIR of one youth identified as belonging to this sub-category, for example, in response to the request to describe “Who Am I?”, simply stated, *“I don’t know. I don’t know how to answer that question...I don’t know. I play softball. I live with my dad, I’m seventeen, uummm... I don’t know.”*

Another stated, *“Who am I? Like personality wise? Like what type of person I am... I have an outgoing personality... a very considerate person. What I mean by outgoing going out and just having fun with me and my friends; considerate, meaning I listen to my friends. That is about it.”*

Yet another offered, *“Um, who am I, if you ask me that question I’ll give you a brief summary of myself. I don’t know I’m just... there’s no other way to answer that question unless you ask me who am I. ((Okay, who are you?)) So, you want me to give you a brief summary? Okay, I’m Rosa. I come to [name of the alternative high school], I’m 14 years old, I’m going to graduate from [name of the alternative high school], I’m Cuban American, and that’s who I am.”*

Confused/Moratorium

The primary property of the core category of Confused/Moratorium was lack of clarity and consolidation of self with sub-categories characterized as either Confused (self-assured but uncertain) or Moratorium (self-assured but uncertain and undergoing proactive exploration). RCUs identified by the coders as Uncertain-Moratorium were

those RCUs in which the respondent's narrative description of her/his personal identity was characterized as being confused and/or in moratorium (in the Eriksonian sense). The coders further described the two sub-categories of RCUs in this category as sharing the core property of being characterized by the absence of negative content and defensiveness as well as the presence of exploration (i.e., they described undergoing a process of "working on identity issues"). Participants in this category thus tended to describe their identity as undergoing development and consolidation involving varying levels of active or proactive exploration.

Confused -- Self-assured, Uncertain. This sub-category was characterized by non-defensive uncertainty (i.e., a non-defensive description of one's lack of clarity of vision of the self as it is undergoing consolidation). RCUs included an explicit reference to the past (where the person has been) and the future (where the person might be going) and maintained an openness to new experiences. They did not, however, make explicit reference to taking steps to work toward consolidating past experiences and future expectations. Rather, they tend to appear to take their cues about how to define themselves from others who know them, the institutions they are members of (e.g., school), etc.

In response to the request to describe "Who Am I?", for example, one participant coded in this category replied, *Who Am I? "Now, I feel, I'm me I guess 'cause my mom played basketball when she went to high school and I played basketball when I go to high school but she ain't go to college. Like, self-explanatory. ((Anything else)) Like, alright, now I'm a basketball player. I'm a star at this school 'cause I played basketball. People know who I am. They like the fact that I play basketball. I like to play. I'm an athlete, so .. it's self-explanatory.*

Another replied, *“Who am I... Anytime people ask me that I say I am myself, and that is how I feel, -- I’m myself, I am me, I can change and I can be...um, different things, I don’t know... I can be... a nice person, I can be... a good person, I can be whatever, I don’t know... When people ask me that I say myself, people change everyday, people do things differently everyday, so you don’t know what you could become. At times... I don’t know, I’m a nice person, I’m a good person, I’m very sweet, kind-hearted, I’m a straight person ((at times you said?)) ...please girl, I don’t know...you know people get in their moods you get depressed, anything can happen and than you change on people sometimes, alright, but it happens, everybody does it, it’s just who I am.”*

Another said, *“Who am I... I guess I am responsible, courteous and, the point that I marked on my chart is when I started at this school, of that, who am I from that, somebody different I suppose because it is a different school, it has changed my attitude, changed my way. I had certain grades in high school, in my first high school, which were not very good, were like F’s and D’s, and now it’s A’s and B’s.”*

One also observed, *“Who Am I? Right now I am satisfied. I always think that there is room for improvement. But I am satisfied with the person I am now because I have made dramatic changes with my attitude. I guess my physical appearance too, how much I care about things and respect people.”*

Moratorium -- Self-assured, Uncertain Proactive Exploration. This sub-category was characterized not only by non-defensive uncertainty, but also by self assured in working on consolidating one’s sense of self and developing a clarity of vision of one’s self. MIRs in the category also frequently included explicit references to self-initiated (proactive) efforts to pursue consolidation of self (i.e., proactive exploration).

To the question “Who Am I?”, for example, one participant replied, *“I am someone who is on the way of becoming a person that I wanna be because a lot of times I am really passive about things now I am to the point where I am trying to stand up for myself and everything I believe in. That just means that before I just used to let things happen and now I just wanna take over what happens and um just basically stand up for myself.”*

Another said, *“Who Am I? I am just still finding my way, I am not sure what I am going to do with my life so I am just trying to find my way and see what I am going to do...that’s basically it. Well, I said I am still trying to find my way in life. I am not really sure if anybody knows if they are going to do at 18, some people do I am sure, a lot of people don’t, I am definitely one of them and umm I like a lot of different stuff but there isn’t one particular thing I know I am going to do, I will probably go to college I know that. I just think you know...you know...i am you know I am you know I haven’t become I have fully evolved into yet. I think that I am smart and I think I am a nice person over all so umm accepting and understanding so those are...imaginative also, so those are things I think about my self.”*

Finally, one observed, *“Who Am I? Basically, now, I would say that I am more. I’m not as.... as I was before. I know a lot of things that I wish I knew before but I know now that I am pretty much capable of doing anything I want to do. Right now I’m on the verge of like trusting people again. And the situation at home is a lot better with my mother. Basically I am more determined now than ever and I want to experience as many things as I can that I missed out on before. That’s basically it I think. Okay, um*

well I'm very dependent. That's one thing It's like I don't like people doing things for me you know. I'd rather do for myself... um."

Self-assured/Secure.

The primary property of the core category of the Self-assured/Secure was clarity and consolidation of self that was self-assured and positive. The RCUs identified by the coders were those RCUs in which the respondent's narrative description of her/his personal identity was characterized as being self-assured and secure. The coders did not identify any subcategories for this category. Participants in this category tended to describe their identity as in positive terms that were self-assured and secure. They not only did not make any explicit references to being uncertain about who they were; they did not make references to exploration processes or to the expectations of others (or institutions) in characterizing themselves.

In response to the "Who Am I?" question, for example, one person coded in this category said, *"Who Am I? I am what I want to be and not what society or my parents or anybody but me wants me to be. Because I see myself as an individual not to be trying to change myself for the better of someone else but I should change myself for the better of me."*

Another commented, *"Who Am I? I don't know strong, well maybe not like on the outside I am you know, I mean everyone is strong on the outside. You can't be strong all of the time, but I think I'm strong when I say something I stick with it, I don't change my mind a lot."*

One said, *“Who Am I?: I am a seventeen year old in [name of alternative high school], life pretty much couldn’t be better. I’ve had my ups and downs this year but I’ve learned from the past that it’s not right to stress anything.”*

Another observed, *“Who Am I?: I think I’m a pretty good person. I got a good head on my shoulders; I think I’m pretty strong. I’m not a follower anymore.”*

Finally one said, *“Who Am I?: I’m a lot stronger than I used to be and I don’t put up with people’s crap anymore. I don’t really give a crap about what anybody has to say anymore. It’s just about me and that’s who I am you either take it or you leave it.”*

Consensual Validity Check

Three graduate level psychology students, working independent of the theoretical analysis, provided an estimate of the consensual validity of the theoretical categories. The inter-rater reliability (percent agreement) among the validity check coders was used to estimate the consensual validity of the theoretical categories (i.e., the percentage of times the independent coders assigned each participant’s MIR response (*MIR Classification*) to the same theoretical category as the theoretical coders).

In conducting the consensual validity check, each of the validity check coders was provided with a written description of the category definitions that included the criteria for inclusion in each category for the Who Am I question, along with a deck of index cards that included all (pre and post, experimental and control) of the participant responses to the question. Working independently and blind with respect to time and condition, the validity check coders were instructed to sort each of the response cards (i.e., MIRs) into one of the four identified theoretical categories (Negative Identity, Diffuse/Uncertain, Confused/Moratorium, and Self –Assured/Secure).

The inter-rater reliability across the categories for the Who Am I question was 88.1% with 100% agreement for the Negative Identity category, 85.4% agreement for the Diffuse/Uncertain category, 85.3% agreement for the Confused/Moratorium category, and 81.6% agreement for the Self-Assured/Secured category.

Theoretical Category Linking: Personal Identity

Using the procedures described above for identifying theoretically meaningful patterns of relationships (pattern/structural, causal/functional) among the identified theoretical categories, the two theoretical coders, knowledgeable with respect to Erickson's psychosocial theory and Elder's life course theory, identified the category links. For the Personal Identity Theme, the theoretical coders identified relationships among the four identified theoretical categories that were both plausible and theoretically meaningful. This process resulted in the theoretical coders identifying a hypothesized relationship among the four theoretical categories for Personal Identity consisting of a four level hierarchical structure, with each level being defined by increasing greater complexity and inclusiveness. For the Who Am I" question, the theoretical coders thus hypothesized a primary dimension of directional variability among the categories with the directionality hypothesized as ranging from Negative Identity to Uncertain-Diffused, Uncertain-Moratorium, Self-assured/Secure with the latter category as anchoring the most developmentally advanced end to this dimension.

The theoretical coders thus considered change along this dimension (i.e., identity formation) as being transformational at each phase (i.e., involving qualitative change) but, as explained next, hypothesized differing change mechanisms (causal versus agentic).

Identifying Change Mechanisms: Personal Identity

With respect to the possible mechanisms of intraindividual change (i.e., an individual's position along a hierarchy), the theoretical coders considered change in and along this dimension (of identity formation) as having both a causal and agentic explanations that varied with respect to earlier and later phases of development. Consistent with psychosocial theory, the coders considered the most salient (and plausible) causal mechanism of change during early phases of development as being epigenetic change (change as an outcome of the biological unfolding of the organism) during the *earlier* phases of the process and more environmental and/or agentic change (change as an outcome of contextual and/or intentional self-directed activities) in *later* phases of development.

From such psychosocial developmental theoretical perspective, epigenetic developmental change is a dimension of variability defined by a non-reversible, linearly ordered set of operations and/or actions that may be characterized in terms of levels of developmental competence within a specified domain. In epigenetic developmental change, the linear ordering of the levels of transformation is hypothesized to be non-arbitrary in that sequence of the acquisition of the operations and/or actions at each of the successive developmental levels are guided by developmental processes that are cumulative and non-reversible. Performances involving higher levels of competence encompass lower levels operations and/or actions, but performances involving lower level competence do not include higher levels of operations and/or actions.

The coders further considered the most salient (and plausible) causal mechanism for change during *later* phases of development as being contextual and/or agentic change,

which is consistent with life course theory. From such life course theoretical perspective, a life course or a life course pathway is a dimension of variability is thus similar to a developmental trajectory, but it differs in that it does not privilege any particular process or determinant in regulating the trajectory (social/historical, biological/maturational, intentional, etc.). That is, life course theory adopts the view that individuals may differ in how they move through trajectories that get them to the same endpoint (i.e., “equifinality”) and, more significantly, that human agency can be numbered among the multiple determinants (e.g., social/historical, biological, etc.) that play an important role in which life course trajectories are followed and how they are followed. Indeed, a basic principle of life course theory is that although human agency is one determinant among many, it is one that is critical to understanding how individuals work out their lives in particular contexts. As Elder (1998b) observed, one of the basic principles of life course theory is that “individuals construct their own life course through the choices and actions they take within the constraints and opportunities of history and social circumstances” (Elder, 1998b, p. 961).

Life course theory thus not only holds that life transitions involve qualitative state changes that are both social and psychological, but also that the qualitative state changes that occur during transitions are always elements of a larger trajectory (the individual’s life course or life trajectory). That is, an individual’s entire life trajectory is itself made up of a succession of qualitative states beginning with birth and ending in death. Indeed, it is this succession of changes that defines the individual’s movement along a life path. Moreover, many of these qualitative state changes involve movement along the specific social and psychological trajectories that make up the individual’s life course.

To this, life course theory adds the view that although many (perhaps most) of these qualitative state changes involve movement along the specific social and psychological trajectories that make up the individual's life course, a particular state change may represent a life course turning point as well (Elder, 1998b). That is, a social or psychological state change may be indicative of more than continued movement along the individual's specific life course trajectory as it has been defined up to a particular point -- it may represent, due at least in part to choices made, a substantial turning point in the individual's life course. More specifically, it may represent a turning point in the sense of either a substantial change or alteration in direction that has defined the trajectory up to a particular point (e.g., a change to a different direction along the same path or even a reversal of the path) or it may represent a change in trajectory itself (e.g., a change to an entirely different trajectory or path).

Moreover, because a life course trajectory is a trajectory that the individual, through her/his choices, constructs from the array of available trajectories (e.g., institutional, developmental, etc.), the individual is in this sense the "producer" of her/his life course trajectory and in charge of his/her life course. Agency in the selection of particular roles or situations represents a mechanism through which life advantages and disadvantages may begin to cumulate according to the Law of Effect in which behavior is sustained or changed by its consequences.

Generating Research Hypotheses

For the Personal Identity Theme, as described next, the specific research hypotheses generated concerning the directionality of potential developmental transitions with respect to qualitative changes in participants identity development were amenable to

statistical analysis using variable orientation data analytic strategies (Jaccard & Becker, 1997). The focus of generating research hypotheses was thus on generating theoretically hypothesized relationships between the identified categories that were also both plausible and theoretically meaningful.

For this study, as described next, the theoretical analyses generated specific research hypotheses concerning the directionality of potential developmental transitions with respect to qualitative changes in identity formation (i.e., from Negative Identity to a Self-assured/Secure identity) amenable to statistical analysis using variable orientation data analytic strategies (Jaccard & Becker, 1997). In addition, because the data were collected using a quasi-experimental comparison control design, it was also possible to evaluate research hypotheses with respect to the role of the intervention condition in facilitating the hypothesized qualitative changes along the hypothesized directionality of dimension.

Research Hypotheses -- Qualitative Change Personal Identity

As described previously, for the third phase of IQ-DAS the theoretical coders are asked to integrate the theoretical hypotheses and explanations of change generated by the first three tasks in the theoretical analysis and generated testable transformational and/or variational research hypotheses for evaluating rival theoretical hypotheses about the relationships among the categories/variables and/or possible mechanism of change. For this study, because the research design was a mixed within and between groups, it was possible to test directly whether participant personal identity (and its meaning and significance to them) underwent qualitative change in relation to participation in the Changing Lives Program (i.e., Pre-Test to Post-Test change relative to the control group).

The theoretical coders thus generated the following research question and research hypothesis to be tested:

Research Question 1. Intervention Impact: *Was the Changing Lives Program successful in producing positive qualitative change in personal identity for program participants?*

Intervention Impact Research Hypothesis 1: Analysis of within and between group differences will find significantly more positive qualitative change in personal identity for program participants' relative to participants in the non-intervention control condition.

Phase III Research Analysis: LCI Theme, Personal Identity

The Research Analysis phase of IQ-DAS brought the core cycle of data analysis full circle. During the Research Analysis Phase, the testable qualitative and/or quantitative hypotheses generated by the theoretical analysis were evaluated using appropriate analytic methods.

Evaluating Research Hypotheses - Qualitative Change in Personal Identity

The third phase of IQ-DAS, the Research Analysis Phase, involved evaluating the research hypotheses generated in the theoretical analysis phase. For trends in the qualitative change in Personal Identity, the theoretical analysis phase yielded a testable variational research hypothesis that was evaluated using variable oriented statistical methods. To maximize statistical power, the sub-categories were collapsed into the four core theoretical categories for the quantitative analysis.

Research Question 1. Intervention Impact on Personal Identity: *Was the Changing Lives Program successful in promoting positive qualitative change in personal identity for program participants?*

Intervention Impact Research Hypothesis: Analysis of within and between group differences will find significantly more positive qualitative change in personal identity for program participants' relative to participants in the non-intervention control condition.

As noted, because the data were collected using a mixed (within and between) quasi-experimental comparison control design, it was possible to evaluate research hypotheses with respect to the role of the intervention condition in promoting positive change.

Because the research hypothesis to be tested focused on both within and between group differences (assessments repeated over time), the variable-oriented data analytic procedure selected for use was a mixed design Repeated Measures Multivariate Analysis of Variance (RMANOVA). RMANOVAs were used to evaluate differential intervention impact. More specifically, a 2 X 2 X 2 X 3 mixed design (within and between) RMANOVA was used in which Time (pre, post) was the within (repeated) factor and Condition (Intervention versus Control), Gender (Female, Male), and Ethnicity (White non-Hispanic, Latino/Hispanic, and Black/African American) the between group factors. Gender and Ethnicity were included as between group factors (along with Condition) to provide a simultaneous test for the direct effects of Condition on intervention response *and* for any potential moderating effects of Gender and/or Ethnicity on intervention response. The multivariate null hypothesis for the statistical tests was that there was no significant difference over time and between groups, and the significance level was set at .05. The analysis was conducted using all 32 participants -- 22 in the Intervention Condition (Pre, Post) and the 10 in the Control Condition (Pre, Post).

Because of the exploratory nature of the analyses, the RMANOVA tested for global trends in overall positive qualitative change. Tests for trends in overall positive qualitative change were carried out by aggregating the sub-categories of the Uncertain-Diffused and Uncertain-Moratorium categories to a global level four core conceptual categories (Negative Identity, Uncertain-Diffused, Uncertain-Moratorium, Self-assured/Secure), the primary dimension of directional variability among categories identified by the theoretical analysis.

Using Personal Identity as the dependent variable, the mixed design RMANOVA tested for Repeated Factor Time and for the 2, 3, and 4 way Time by Condition, Gender, Ethnicity Interaction Effects with specific comparisons, using Bonferonni statistical correction for multiple comparisons where appropriate (following recommendations by Jaccard & Becker, 1997). A significant Time effect indicated a significant overall change from pre to post and significant interaction effects indicate a moderation effect for the identified moderator variable(s) (Condition, Gender, and Ethnicity).

Table 1 presents the Personal Identity Multivariate Tests of Significance for the Effects of the Repeated factor Time, and the Time by Condition, Gender, Ethnicity Interaction Effects.

As can be seen from Table 1, there was a Significant main Effect for the Repeated Factor Time in the hypothesized direction Roy's $\Theta = .184$, $F(1, 22) = 4.047$, $p < .054$. That is, a significant overall positive qualitative change from pre to post for both conditions. And, more important from our point of view, there was a Significant Interaction Effect for Time X Condition in the hypothesized direction, Roy's $\Theta = .36$, $F(1, 22) = 7.9$, $p < .01$,

Table 1
Personal Identity : Multivariate Tests of Significance for the Repeated Factor Time and Time, Condition, Gender, Ethnicity Interaction Effects

Effect	Test	Statistics						
		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power ^a
TIME	Roy's Largest Root	.184	4.047 ^b	1	22	.054	.155	.486
TIME * COND	Roy's Largest Root	.360	7.909 ^b	1	22	.010	.264	.767
TIME * GENDER	Roy's Largest Root	.348	7.649 ^b	1	22	.011	.258	.753
TIME * ETHNICITY	Roy's Largest Root	.299	3.292 ^b	2	22	.053	.230	.564
TIME * COND * GENDER	Roy's Largest Root	.014	.299 ^b	1	22	.590	.013	.082
TIME * COND * ETHNICITY	Roy's Largest Root	.108	2.377 ^b	1	22	.137	.098	.314
TIME * GENDER * ETHNICITY	Roy's Largest Root	.105	1.158 ^b	2	22	.332	.095	.228
TIME * COND * GENDER * ETHNICITY	Roy's Largest Root	.000	.000 ^b	1	21	1.000	.000	.050

a. Computed using alpha = .05

b. Exact statistic

c. Design: Intercept+COND+GENDER+ETHNIC3+COND * GENDER+COND * ETHNIC3+GENDER * ETHNIC3+COND * GENDER * ETHNIC3
 Within Subjects Design: TIME

Interaction Effect for Time X Gender, Roy's $\Theta = .34$, $F(1, 22) = 7.65$, $p < .011$. That is that the interaction effect occurred differently for males than for females. Finally, there was also a Significant Interaction Effect for Time by Ethnicity, Roy's $\Theta = .30$, $F(1, 22) = 3.29$, $p < .053$. In other words, the interaction effect occurred differently for all three ethnic groups.

For the intervention condition, the directionality of the basic pattern of change for participants in intervention condition was positive from pre to post for participants of both genders and all three ethnic groups. That is, participants of both genders and from all three ethnic groups tended to move in a positive direction relative to the non-intervention control participants. Although a portion of the interaction effect was due to the tendency of participants in the non-intervention group to be less positive in their characterization of themselves at the end of the semester, there was nevertheless a marked tendency for participants in the intervention group to characterize their sense of self as more secure and less negative at the end of their first semester in the intervention that was stable across both genders and all three ethnicities.

The main source of the moderation effects of gender and ethnicity in pre to post change in outcome was due to differences in levels at which participants begin the interventions and how far they move in positive directions on the part of the intervention participants and how far in the negative direction on the part of non-intervention controls, with the basic pattern being that females appear more secure and more positive in their characterizations of their sense of self at the beginning of the intervention than males and that White non-Hispanics and Latino/Hispanics appear more secure and more positive in their characterizations of their sense of self at the beginning of the intervention than

Black/African American participants. As noted, however, the basic differential pattern of an increase in positive characterization of sense of self relative to both pre test *and* non-intervention controls was stable across both genders and all three ethnic groups.

IQ-DAS Application to the LCI Theme, Life Turning Points

This section will describe the results of the application of the IQ-DAS to the analysis of the LCI Theme Life Turning Points/Question #4, Present Turning Points.

Phase I Conceptual Analysis: LCI Theme, Life Turning Points

Content Category Identification

Following established procedures (described previously) and working blind to Time and Condition, the coders (three psychology undergraduate students) identified a set of 12 content categories using the method of constant comparison to identify the smallest set of qualitatively different (non-overlapping). The 12 content categories defined the RCUs (i.e., the descriptive phrases and sentences) for all of the MIRs that made up a particular data set.

Using the procedures described above, the coders identified an initial set of 12 core categories listed below in no particular order/structure:

1. Undergoing a present turning point.
2. Not undergoing a present turning point.
3. Anticipating future turning point related to school, positive.
4. Undergoing turning point related to school, negative.
5. Undergoing a T.P. related to relationship, romantic, positive.
6. Undergoing a T.P. related to relationship, family, negative.
7. Undergoing a T.P. related to relationship, family, negative & positive.

8. Undergoing T.P. related to relationship, peer, positive.
9. Undergoing T.P. related to relationship, peer, negative.
10. Undergoing T.P., unspecified or uncertain.
11. Undergoing T.P. related to school & family, positive.
12. Undergoing T.P. related to school & relationship, negative.

Macro Interview Response Classification

After the coders identified the smallest set of qualitatively different categories that defined the RCU's, the coders were instructed to reverse the process and use the categories to classify the MIRs. Each participant response for both Conditions (experimental and control) and Time (both pre and post) were classified into the identified content categories and recorded. This grouping of the MIRs into the content categories provides the basis for the next phase (i.e., Theoretical Analysis) of the analysis.

Phase II Theoretical Analysis: LCI Theme, Life Turning Point/Question

Theoretical Category Coding: Life Turning Points

The initial set of content categories provided the data for the Theoretical Analysis that followed. Consistent with grounded theory, the Theoretical Analysis phase of IQ-DAS focuses on using "theoretical coding" for the construction and evaluation of theory when no theory exists or the refinement and evaluation of theory when theory already exists. For IQ-DAS, theoretical coding was the analytic process through which content categories were refined into theoretical categories.

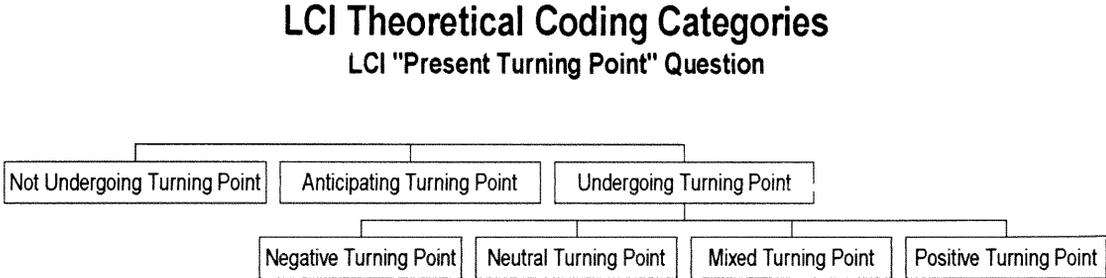
The theoretical coders (the Investigator and a Ph.D. level Psychologist) reviewed the entire data set (64 MIRs) for the Present Turning Point question as they were grouped

in each of the content categories to gain an understanding of what the coders identified as the defining properties. The theoretical coders then analyzed and synthesized the content descriptions of the categories with respect to their understanding of Elder's life course theory as relevant to this theoretical context. For the purpose of the analysis of the directionality of present turning points and the underlying mechanisms of change, the theoretical coders identified three theoretical categories with one having associated sub-categories, by either collapsing or re-naming the content categories. The content category Not Undergoing A Present Turning Point was named Not Undergoing Turning Point. The contents category Anticipating Future Turning Point Related To School was named Anticipating Turning Point. The content category Undergoing a present turning point was named Undergoing Turning Point. The remaining content categories were collapsed and named as sub-categories based on their evaluative property (i.e., negative, neutral, mixed, and positive) (see Figure 5). The theoretical coders found it more theoretically meaningful and useful with respect to the purpose and goals of life course theory, to focus on the evaluative property identified by the coders (e.g., negative turning point, positive turning point) rather than the particular content of the category (e.g., turning point related to relationship, peer).

Thus, the theoretical category coding for the Life Turning Point Theme resulted in the identification of three core theoretical categories (Not Undergoing Turning Point, Anticipating Turning Point, and Undergoing Turning Point) and associated sub-categories. The organizational structure of the categories and sub-categories was moderately complex. Figure 5 presents the organizational structure of the categories and sub-categories graphically.

The open and theoretical coding of the raw data for the Life Course Turning Point resulted in the identification of three core theoretical categories (Not Undergoing Turning Point, Anticipating Turning Point, and Undergoing Turning Point) and associated sub-categories. Figure 5 presents the organizational structure of the categories and sub-categories graphically.

Figure 5 Life Turning Point Theoretical Coding Categories



Category Names and Descriptions

This section provides a description of core theoretical categories and sub-categories identified during the theoretical analysis phase.

Not Undergoing Turning Point. Among the RCUs, the coders identified the absence of a present turning point as a core category (i.e. Not Undergoing Turning Point). This type of RCU was grouped together (similar) in that the participants responded by saying that they were not undergoing a turning point, “*Right now I don’t think that my life is at a turning point*” or that their life was not currently undergoing any type of change, “*There is nothing happening to change how I view life*”.

Anticipating Future Turning Point. Another core category of RCUs identified by the coders was those narrative descriptions of the respondent’s account of anticipated future (rather than present) changes in their life based on future events (e.g., “*I think it will be, once I get out of high school that will be a turning point there. It will change my whole entire view on life. When I get out of high school it’s going to be different. I am going to be different. I am going to be all grown up. That will be a turning point for me.*”). Another response was “*I’m going to be moving and I think that will be a turning point cause I hang around with all of my friends and stuff and they make me do bad things and I think I should just move.*” In this particular response (and those grouped similar), the respondent was describing the meaning and significance of anticipated changes in her life (moving and not hanging around her friends) rather than dramatic changes in the current direction of her life.

Undergoing Turning Point. In this core category of responses, the participants all described current changes in the direction of their life resulting from dramatic changes in

how they view themselves or the world. Four subcategories within this category were identified as having varying dimensions (Negative, Neutral, Mixed, and Positive) related to an evaluative property of the turning point that influenced the direction in which the life course was shifting. In the Negative Turning Point subcategory the responses were grouped together based on the similarity in which the participants described the present life change as turning their life in a negative direction (e.g., *“Yeah, yep, my step daddy left my momma and she felt like it was my fault. So, now it’s like changing on me and stuff. I think she hates me now. Aw, I don’t know, cause now it’s all changing, she feels like it’s my fault he’s gone and he don’t wanna come back to her...now she gets at anything to argue with me. It’s a negative change, I feel like she wanna throw me out and put him back in.”*). In the Neutral Turning Point subcategory responses were grouped together in which the participants were either not certain *or* did not specify what direction the turning point was shifting the life course. More specifically, these participants’ responses described the present change occurring in their life (i.e., present turning point) without a unidirectional (i.e., negative or positive) evaluative property but rather a neutral dimension (neither negative or positive) related to the direction the change was shifting the life course. For example, one participant responded, *“Yes, Um well right now, since I just came back down I met Juan in school. He’s my boyfriend for six months and before that I could really care less about boys. They’re mostly my friends than anything else. And I never really got too close or showed that I cared. So I don’t know if this is positive or negative because I don’t want to be wrapped up in one person. In the beginning I was just wrapped up in the relationship and didn’t really see it but now I’m taking a step outside to see how other people see it. I’ve had some comments from*

my mother, like, he is too controlling and I have had other influences. I am now starting to doubt everything that I thought was perfect before". In the Undergoing Mixed Turning Point the coders identified a category of responses in which the participants described their life as undergoing a present change that had both a positive and negative (i.e., mixed) dimension to the evaluative property of the subjective meaning and significance of the change that was shifting the life course. In the following example the respondent is describing the activating life event as having both a negative and positive dimension rather than describing one direction (negative or positive) in the shift in the life course. This girl responded, *"Yes, I am pregnant. It's like a happy thing, it's a good thing, but I'm like a child myself. It's positive because I am having a baby and I can teach him stuff. It's negative because there are things I can't do now"*. A final subcategory identified by the coders was Undergoing Positive Turning Point. In this subcategory participants described a positive change in the direction of their life (e.g., *"Yes, I'm getting good grades, I used to get all D's and F's. My grandma is getting proud and me and my dad too. I just decided to do better in school and to make it in life."*) In this category of responses the criteria for inclusion was the identification of a present (i.e. recent/current rather than past or anticipated) change that was influencing the view of self (e.g., *"I'm becoming more mature and I can feel it."*) or the world (*"I understand things better now."*) and contained a positive dimension in the subjective meaning and significance of the turning point (e.g., *"It's [being engaged] having a big impact on my life, a positive one but a big one. I always thought I would never find...I always thought I would never get married."*). In another example the participant described the turning point and the directional dimension of the change, *"Yes, going out*

with my boyfriend because like before I had this whole bad relationship thing and now everything is going for the better". The properties that these responses shared in common was thus the core criteria of undergoing a turning point that was further identified as having a positive dimension to the evaluative subjective meaning and significance of the turning point.

Consensual Validity Check

Three graduate level psychology students, again working independent of the theoretical analysis, provided an estimate of the consensual validity of the theoretical categories. The inter-rater reliability (percent agreement) among the validity check coders was again used to estimate the consensual validity of the theoretical categories (i.e., the percentage of times the independent coders assigned each participant's MIR response (*MIR Classification*) to the same theoretical category as the theoretical coders).

Using the same procedure described under the Theoretical Analysis phase Personal Identity theme (i.e., working independently and blind with respect to time and condition), the validity check coders sorted each of the response cards (i.e., MIRs) into one of the three identified theoretical categories and four sub-categories (Not Undergoing Turning Point, Anticipating Turning Point, Undergoing Negative Turning Point, Undergoing Neutral Turning Point, Undergoing Mixed Turning Point, and Undergoing Positive Turning Point).

The inter-rater reliability for the Present Turning Point question across all the categories was 88.4% with 93.6% agreement for the Not Undergoing Turning Point category, 78.8% agreement for the Anticipating Turning Point category, 87.5% agreement for the Undergoing Negative Turning Point category, 87.5% agreement for the

Undergoing Neutral Turning Point category, 93.8% agreement for the Undergoing Mixed Turning Point, and 90% agreement for Undergoing Positive Turning Point category.

Theoretical Category Linking: Life Turning Points

Using the procedures described above for identifying theoretically meaningful patterns of relationships among the identified theoretical categories, the two theoretical coders, knowledgeable with respect to Elder's life course theory, identified the category links. For the Life Turning Point Theme, the theoretical coders identified relationships among the three categories and four sub-categories that were both plausible and theoretically meaningful, consisting of a non-hierarchical structure and defined by a dimension not varying along a developmental hierarchy (e.g., less advanced to more advanced) but rather with respect to Time and Condition.

Consistent with life course theory, the coders conceptualized a life course or a life course pathway as a dimension of variability similar to a developmental trajectory, but differing in not privileging any particular process or determinant in regulating the trajectory (social/historical, biological/maturational, etc.). That is, they adopted the life course theory view that individuals may differ in how they move through trajectories that get them to the same endpoint and that human agency can be numbered among the multiple determinants (e.g., social/historical, biological, etc.) that play an important role in which life course trajectories are followed and how they are followed. Because a life course trajectory is a trajectory that the individual, through her/his choices, constructs from the array of available trajectories (e.g., institutional, developmental, etc.), the individual is in this sense the "producer" of her/his life course trajectory and in charge of his/her life course.

Moreover, because a life course turning point is considered to be a transition that represents a qualitative state change shifting the direction of the life course trajectory, the dimension of variability for the Life Turning Point categories was hypothesized as varying along a dimension of directionality with respect to the evaluative property of the turning point (e.g., negative, positive) that carries with it the potential to change the direction of the life course trajectory. Thus, the hypothesized dimension of directional variability among the Life Turning Point categories was hypothesized to vary with respect to Time (pre or post) and Condition (intervention versus control). The direction of variability was hypothesized as ranging from Negative Turning Point, Not Undergoing Turning Point, Anticipating Turning Point, Undergoing Neutral Turning Point, Undergoing Mixed Turning Point, to Undergoing Mixed Turning Point, with the latter category representing the most desired intervention outcome at post-test.

Thus for the Life Turning Point Theme, the theoretical analyses did *not* generate specific research hypotheses concerning the directionality of qualitative changes in life turning points as a consequence of developmental transition. Rather, because the data were collected using a quasi-experimental comparison control design, it was possible to evaluate research hypotheses with respect to the potentially positive role of the intervention condition in facilitating qualitative changes in the type of turning points intervention participants experienced relative to non-intervention controls.

The theoretical coders thus considered change along this dimension (i.e., qualitative change in the quality of the Life Turning Point in a positive direction) as being transformational (i.e., involving qualitative change) but, as explained next, hypothesized differing change mechanisms (causal versus transformational).

Identifying Change Mechanisms

With respect to the possible mechanisms of intra-individual change (i.e., qualitative change in an individual's position within a Life Turning Point category), the theoretical coders considered qualitative change that varied in the direction from a negative or neutral turning point to a mixed or positive turning point as having both contextual and agentic explanations. More specifically, the researchers hypothesized Condition (Intervention versus Control) as causal moderator of context that in turn mediated the use of agentic activities. That is, that variation in Condition was a cause of contextual variation in life course experience (increased likelihood of co-participatory and transformative experiences) that in turn mediated individual agentic response (increased likelihood of making intentional, self-directed choices). As mentioned previously, consistent with life course theory, a life course or a life course pathway has a dimension of variability similar to a developmental trajectory, but differing in not privileging any particular process or determinant in regulating the trajectory (social/historical, biological/maturational, etc.). That is, life course theory views human agency as numbered among the multiple determinants (e.g., social/historical, biological, etc.) that play an important role in which life course trajectories are followed and how they are followed.

Generating Research Hypotheses

For the Life Turning Point Theme, as described next, the specific research hypothesis generated concerning the directionality of potential transitions with respect to qualitative changes in participants status within the Life Turning Point categories were amenable to statistical analysis using variable orientation data analytic strategies (Jaccard

& Becker, 1997). The use of a quasi-experimental comparison control design, made it possible to evaluate the research hypotheses with respect to the role of the intervention condition in facilitating the hypothesized qualitative change in the evaluative dimension of the Life Turning Point (Undergoing Negative Turning Point to Undergoing Positive Turning Point).

The focus of generating research hypotheses was thus on refining a set of theoretically plausible core theoretical categories and generating theoretically hypothesized relationships between the identified categories that were also both plausible and theoretically meaningful, and identifying change mechanisms.

Research Hypotheses -- Qualitative Change in Life Turning Point

As described previously, for the fourth task of the Theoretical Analysis of IQ-DAS the theoretical coders are asked to integrate the theoretical hypotheses and explanations of change generated by the first three tasks in the theoretical analysis and generate testable transformational and/or variational research hypotheses for evaluating rival theoretical hypotheses about the relationships among the categories/variables and/or possible mechanism of change. For this study, because the research design was a mixed within and between groups, it was possible to test directly whether participant Life Turning Point (and its meaning and significance to them) underwent qualitative change because of participation in the Changing Lives Program (i.e., Pre Test to Post-Test change relative to the control group). The theoretical coders thus generated the following research question and research hypothesis to be tested:

Research Question 2. Intervention Impact on Life Turning Points: *Was the Changing Lives Program successful in promoting positive qualitative change in program participants life turning points?*

Intervention Impact Research Hypothesis: Analysis of within and between group differences will find significantly more positive qualitative change with respect to the program participants' life turning points relative to the non-intervention control condition.

Phase III Research Analysis: LCI Theme, Life Turning Points

Following established procedure, during the Research Analysis Phase, the testable qualitative and/or quantitative hypothesis generated by the theoretical analysis was evaluated using appropriate analytic methods.

Evaluating Research Hypotheses -- Qualitative Change in Life Turning Points

The third phase of IQ-DAS, the Research Analysis Phase, involved evaluating the research hypothesis generated in the theoretical analysis phase. For trends in the qualitative change in Life Turning Points, the theoretical analysis phase yielded a testable variational research hypothesis that could be evaluated using variable oriented statistical methods.

Research Question 2. Intervention Impact on Life Turning Points: *Was the Changing Lives Program successful in producing qualitative, positive change in program participants reported life turning points from Pre Test to Post Test?*

Intervention Impact Research Hypothesis: Analysis of between group differences will find significantly more positive qualitative change with respect to the

program participants' life turning points relative to the comparison control condition.

Repeated Measures Multivariate Analysis of Variance (RMANOVAs) were again used to evaluate the success of the intervention in promoting positive change, with Time (pre, post) as the within (repeated) factor and Condition (Intervention versus Control), Gender (Female, Male), and Ethnicity (White non-Hispanic, Latino/Hispanic, and Black/African American) the between group factors. Gender and Ethnicity were included as between group factors (along with Condition) to provide a simultaneous test for the direct effects of Condition on intervention response *and* for any potential moderating effects of Gender and/or Ethnicity on intervention response.

Because of the exploratory nature of the analyses, the RMANOVA tested for global trends in overall positive qualitative change.

Using Life Turning Point as the dependent variable, the mixed design RMANOVA tested for Repeated Factor Time and for the 2, 3, and 4 way Time by Condition, Gender, Ethnicity Interaction Effects.

Table 2 presents the Life Turning Point Multivariate Tests of no Significance for the Effects for the Repeated Factor Time and the Tests of Significance for the Effects of Time by Condition.

As can be seen from Table 2, there was no significant main effect for the Repeated Factor Time. However, and more important from our point of view, there was a significant Time by Condition Effect in the hypothesized direction, Roy's $\Theta = .298$, $F(1, 22) = 6.565, p < .018$. That is, the intervention condition showed greater positive qualitative change in Life Turning Points relative to the control condition. Finally, there

Table 2:
Life Turning Point: Multivariate Tests of Significance for the Repeated Factor Time and Time, Condition, Gender, Ethnicity Interaction Effects

Effect	Test	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power ^a
TIME								
	Roy's Largest Root	.050	1.109 ^b	1	22	.304	.048	.172
TIME * COND								
	Roy's Largest Root	.298	6.565 ^b	1	22	.018	.230	.688
TIME * GENDER								
	Roy's Largest Root	.009	.189 ^b	1	22	.668	.009	.070
TIME * ETHNICITY								
	Roy's Largest Root	.048	.524 ^b	2	22	.600	.045	.125
TIME * COND * GENDER								
	Roy's Largest Root	.108	2.366 ^b	1	22	.138	.097	.313
TIME * COND * ETHNICITY								
	Roy's Largest Root	.000	.001 ^b	1	22	.979	.000	.050
TIME * GENDER * ETHNICITY								
	Roy's Largest Root	.014	.153 ^b	2	22	.859	.014	.071
TIME * COND * GENDER * ETHNICITY								
	Roy's Largest Root	.000	.000 ^b	1	21	1.00	.000	.050

a. Computed using alpha = .05

b. Exact statistic

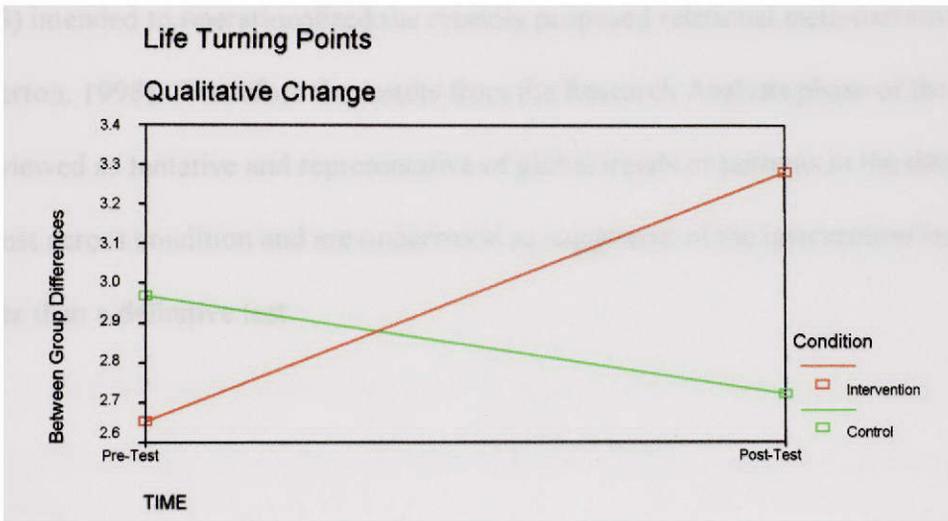
c. Design: Intercept+COND+GENDER+ETHNIC3+COND * GENDER+COND * ETHNIC3+GENDER * ETHNIC3+COND * GENDER * ETHNIC3

Within Subjects Design: TIME

showed greater positive qualitative change in Personal Identity relative to the non-intervention control condition.

Figure 5 presents the profile plot of the interaction and illustrates the pattern of significant interaction. Thus, from Figure 5, it can further be seen that for the intervention condition the basic pattern of change was positive from pre to post. That is, intervention participants tended to move in a positive direction relative to the non-intervention control participants.

Figure 5: Profile Plots of Significant Interaction Effects for Intervention and Control



Condition: Pre and Post

From Figure 5 it can be seen that for the intervention condition, the directionality of the basic pattern of change for participants in intervention condition was positive from pre to post and negative for the non-intervention group. Thus, the basic pattern of change was an increase toward a positive qualitative shift in the direction of the life course relative to both pre test and non-intervention control.

Summary and Conclusions

Overall, the main trends in the patterns of results that were obtained in this study provided support for the utility of intervention that was evaluated. That is, the overall impact of the intervention appeared to promote positive qualitative change in Personal Identity for the intervention participants and in their subjective descriptions of their Life Turning Points.

However, this study was not primarily an outcome study, but rather an exploratory developmental study investigating the utility of a data analytic strategy (IQ-DAS) intended to operationalized the recently proposed relational meta-narrative (Overton, 1998). Therefore the results from the Research Analysis phase of the ID-DAS are viewed as tentative and representative of global trends or patterns in the data from pre to post across condition and are understood as suggestive of the intervention impact rather than a definitive test.

V: DISCUSSION

The overall purpose of our ongoing program of research (Kurtines, Lewis-Arango, Kortsch, in press) has been to draw on recent advances in the concept of development and developmental methodology (Overton, 1998) and the use of qualitative research methods in the human sciences (Denzin & Lincoln, 2000) in an effort to develop qualitative measures and an integrative data analytic strategy that has the potential for capturing and reporting the subjective experiences of the participants in youth interventions that target changing negative life course pathways. In line with this purpose, the specific aim of this study was to continue the promising line of research that emerged out of the previous feasibility study (Lewis Arango, 2001). This study investigated further and extended the previous findings by addressing two basic limitations of the feasibility study, viz., the use of a between groups design and the small number of participants.

This section provides a detailed discussion of the implications and limitations of the reported findings from the study. The discussion of the implications of the research is organized around the goals of the study, which were threefold: practical, methodological, and theoretical.

Practical Implications

The first goal of the study was practical, with a focus on conducting a preliminary controlled evaluation of the impact of a positive youth development intervention on the meaning and significance of the life course experiences of the at risk youth in the program. A growing literature focusing on interventions that seek to promote *positive* development has emerged (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 1999) out of

the recognition that interventions targeting troubled youth need to do more than "treat" problem behaviors (i.e., symptoms) or "prevent" negative developmental outcomes (Lerner, Fisher, & Weinberg, 2000). When employed as selective interventions (i.e., with troubled youth), the aim of such programs is to alter or change the direction of the "negative" life course pathways of the youth in the programs. Recent reviews of youth development programs that promote positive youth development (see, for example, Catalano, et al., 1999 review of 25 well-evaluated programs) reveal an accumulation of evidence that the programs have an impact on young people and that the literature has made considerable strides, including methodological rigor and sophistication.

Despite the consistent pattern of overall positive findings in the literature important gaps in research-based knowledge with respect to the impact of youth development interventions continue to exist. The Catalano review (1999), for example, reported only relatively short-term (pre, post, + follow-ups) studies with outcomes evaluated in terms magnitude of short-term quantitative change in continuous variables relative to a comparison or control condition. Indeed, consistent with criteria common to the intervention field, this was a core component of the definition of "well-evaluated."

This emphasis on short-term outcome studies using quantitative measures and variable oriented data analytic strategies, though useful in many way, places methodological limits on the types of questions we can ask and the types of answers we can obtain when evaluating intervention programs in general, but particularly so when evaluating positive development programs that target troubled youth. That is, in view of the ways that the outcome goals of positive development programs that target troubled youth differ from the outcome goals of treatment and prevention programs that target the

same population, the use of methods and criteria that are appropriate for these types of programs places constraints or limits on the richness of the phenomena that can be captured and evaluated when they are applied to positive development programs that target troubled youth.

Treatment intervention programs, for example, specifically target identified problem behaviors and may be appropriately evaluated in terms of whether they significantly reduce identified problem behaviors using quantitative measures and variable oriented data analytic strategies. Prevention intervention programs similarly specifically target risk and protective factors identified as probable antecedents of negative developmental outcomes and may also appropriately be evaluated in terms of whether they significantly reduce risk and/or increase protective factors.

Positive youth development programs, in contrast, lack the specificity of treatment and prevention programs. They often emerge in response to issues and concerns that are local and particular, culturally bound, and historically situated. In these cases, the aim of youth development programs is to promote “positive” development where the meaning and significance of the concept of “positive” is determined by a complex interaction of locally, culturally, historically, and developmentally relevant factors.

When employed as universal interventions (e.g., 4-H, Girl/Boy Scouts, etc.) the most general aim of youth development programs is to enrich and enhance the normative course of development in a multitude of ways (specified and not specified) that are locally, culturally, contextually, and developmentally meaningful and significant (Mulkeen & Markstrom, 2001). The goal of universal positive development interventions

(i.e., interventions that do not specifically target identified behavior problems or “at risk” youth) is thus to intervene across a broad and diverse array of specific and non-specific positive development constructs to promote, enrich, and enhance ongoing progress along an already positive life course. That is, the goal is not to change lives; on the contrary, the goal is to “hold the course” and, if possible, enrich and enhance progress along the way. In this context, positive development intervention programs that target quantifiable positive development constructs using the type of quantitative measures of the type reported by Catalano et al. (1999) may be appropriately evaluated in terms of whether they significantly increase identified positive development domains using such quantitative measures and variable oriented data analytic strategies.

The emphasis on short-term outcome studies using quantitative measures and variable oriented data analytic strategies that characterizes the literature on treatment, prevention, and positive intervention programs, though useful in many ways, places methodological limits on the types of questions we can ask and the types of answers we can obtain, particularly in evaluating positive development programs that target troubled youth. We use the term “troubled” youth to describe the population we work with (and develop interventions for) as an alternative to the terms “behavior problem” youth or “at-risk” youth. In the youth development programs that we have been developing for the “troubled” youth, the youth we work with are drawn from the same general population as the behavior problem and at risk youth targeted by treatment and prevention programs and, like those youth, as a population they exhibit a full spectrum of the behavior problems and risk factors. In contrast to treatment and prevention programs that target specific types of behavior problems or risk factors, however, the programs we have been

developing do not target specific behavior problems or risk factors; rather, the focus of our program is on promoting positive development. Our programs provide (as needed and available) selected interventions that target specific behavior problems and risk factors, but reducing behavior problems and risk factors is not our main goal.

Like universal youth development programs, our programs focus on promoting positive development, but in contrast to programs that aim at facilitating development along a trajectory or life course that is already proceeding in a positive direction, our programs aim at altering or changing the course of lives that are proceeding in a negative direction. When employed as selective interventions (i.e., with troubled youth), the aim of our programs is thus to alter or change the “negative” direction of the life course or trajectories of the youth in our programs. That is, the aim of our programs is to change the lives of troubled young people for the better where “change” means a qualitative change in direction (i.e., from negative to positive) and where “for the better” (negative to positive) is to be understood in ways that are particularly local (i.e., in ways that are relative to each individual’s specific life course trajectory at the time of entry into the program) as well as culturally, historically, and developmentally appropriate. Our goal is thus to promote positive qualitative change in the direction of participants lives in ways that are individually, culturally, historically, and developmentally meaningful and significant. We consequently consider our programs to be open-ended responses that target the intersection of the developmental and historical moment – changing lives and changing times (Lerner, et al. 2000).

Moreover, the finding reported in this study, though tentative and preliminary, provide evidence for the success of the particular intervention that we have been

developing, i.e., the Changing Lives Program, in promoting positive qualitative change as well as (as discussed in more detail in the next section) support for the utility of using the Life Course Interview (LCI) as a qualitative method for indexing expressive-constitutive action (i.e., as a performance measure for indexing the subjective meaning and significance of participants' life course experiences) and for use open and theoretical coding using the method of constant comparison as a method for capturing qualitative change in these indices. More specifically, this dissertation reports an exploratory/developmental study conducted using a mixed (within and between) quasi-experimental design (pre-post comparison control condition design) to examine the impact of a Changing Lives Program on promoting positive qualitative change in participants in the program. The results of the study thus provide the first empirical evidence from a controlled study designed to document the impact that youth development programs have on qualitative change in the subjective meaning and significance of participants' life course experiences.

Using the 22 participants in the Intervention Condition (Pre, Post) and the 10 non-participants in the Control Condition (Pre, Post), RMANOVAs (Repeated Measures Multivariate Analysis of Variance) analysis of within and between group differences found significantly more positive qualitative change in personal identity for program participants' relative to participants in the non-intervention control condition. In addition, the 2 X 2 X 2 X 3 mixed design (within and between) RMANOVA in which Time (pre, post) was the within (repeated) factor and Condition (Intervention versus Control), Gender (Female, Male), and Ethnicity (White non-Hispanic, Latino/Hispanic, and Black/African American) the between group factors, also found significant interactions

for the Time by Gender and Time by Ethnicity, indicating that both gender and ethnicity had moderating effects on intervention response.

A visual examination of the pattern of the moderation effects, however, indicated that for the intervention condition, the directionality of the basic pattern of change for participants was positive from pre to post for participants of both genders and all three ethnic groups. That is, participants of both genders and from all three ethnic groups tended to move in a positive direction relative to the non-intervention control participants. The visual examination of the pattern of the moderation effects also indicated that although a portion of the interaction effect was due to the tendency of participants in the non-intervention group to be less positive in their characterization of themselves at the end of the semester, there was nevertheless a marked tendency for participants in the intervention group to characterize their sense of self as more secure and less negative at the end of their first semester in the intervention that was stable across both genders and all three ethnicities. The basic differential pattern of an increase in the intervention condition of a positive characterization of sense of self relative to both their own pre test *and* relative to the directionality of the movement of the non-intervention controls was stable across both genders and all three ethnic groups. A similar pattern of positive change was found with respect to intervention participants' reports of present life turning points, namely a pattern of significant increase in positive turning points relative to non-intervention controls, only in this case not moderated by either gender or ethnicity.

The finding from the exploratory/developmental controlled study conducted as part of this dissertation thus provided tentative and preliminary evidence for the success

of the Changing Lives Program in promoting positive qualitative change in program participants' life course experiences. This study, however, was not primarily conducted as an outcome study. Thus, although these preliminary results are promising in suggesting that the program had a positive impact on the lives of its participants, the answer to the question of whether this particular program is efficacious (and/or effective) awaits the outcome a sufficient number of future "well-evaluated" outcome research studies. Consequently, although evaluating the impact of the program on the lives of the participants in the program was an important goal of this study, it was not the *only* goal (or even the main goal).

Methodological Implications

A second and even more challenging goal of the research reported here was methodological. Our goal was to make a contribution to integrating the split that has come to characterize the scientific study of human development by developing methods and procedures to help transform our perspective on *what* changes in human development (i.e., whether observed ontogenetic change in humans represents changes in expressive-constitutive actions or changes instrumental-communicative actions) and *how* it changes (i.e., whether change is transformational or variational). It is at this level, as noted, that our program of research seeks to address issues that are broad and complex, touching on the very nature of developmental change and how it is to be understood. Our strategy has been to move in the direction of developing and refining a set of integrated data analytic strategies (IQ-DAS; Integrated Qualitative/Quantitative Data Analytic Strategies)(Kurtines, Lewis Arango, Kortsch, in press) that build on and seek to extend and integrate a recently proposed relational developmental metanarrative in

understanding such issues (Overton, 1998) and advances in use of qualitative research methods (Denzin & Lincoln, 2000), particularly as these advances have implications for developmental methodology and the analysis of developmental change. As the first controlled study to use and evaluate the utility of this set of integrated data analytic strategies in evaluating the impact of the Changing Lives Program on the life course experiences of participants using the Life Course Interview, our experiences and findings using IQ-DAS have to be interpreted cautiously. In this context, our experiences and findings, though tentative and preliminary, have been promising.

Drawing on the work of Overton (1998), the research reported here used as a starting point the working hypothesis that the next step in the evolution of a practical relational developmental methodology needed for evaluating life course change is the development of a framework for conceptualizing the relationship between variational and transformational change as two sides of a unified explanation *and* the development of practical ready-at-hand data analytic strategies for testing qualitative hypothesis about expressive actions that begin to approximate the utility of the data analytic strategies that have evolved for testing causal hypotheses about instrumental actions. To this end, IQ-DAS is intended to approximate the relational ideal by providing a framework that makes available to the researcher an array of research methods and procedures that can be relationally employed, as needed, across the full range of the traditional splits that have characterized developmental research domains (qualitative/quantitative, structural/functional, variational/transformational, causal/pattern, expressive-constitutive/instrumental-communicative), and that also makes it possible to easily and readily switch between poles of the splits (qualitative → quantitative → qualitative... ,

structural → functional → structural...etc.) based on findings/results obtained at any phase of analysis (conceptual, theoretical, research analysis) and at any level of analysis (theory and data).

The challenge, however, was more than simply that of integrating both types of data analytic strategies. Rather, as noted, the challenge also involved the development of qualitative methods for indexing the type of expressive-constitutive action that we consider important in evaluating our programs for troubled youth. It also involved formulating and operationalizing qualitative methods for evaluating transformational (i.e., qualitative) change in the type of expressive-constitutive action that we target in our programs and IQ-DAS as a framework for integrating the use of these strategies with the use of quantitative data analysis strategies.

In this context, we have been refining the Life Course Interview (Clausen, 1993; 1995; 1998) as an open-ended “full” response performance measure coded using procedures that draw primarily on grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998) as adapted for use in our research program. IQ-DAS draws on grounded theory data analytic strategies (Strauss & Corbin, 1998) for each of IQ-DAS’s three analytic phases. We have, for example, done considerable work on refining the use of Strauss and Corbin’s (1998) “open” and “theoretical” coding and the “method of constant comparison” in coding responses to qualitative measures (e.g., the Life Course Interview, the Possible Selves Questionnaire, etc.) developed and refined for use in this study explicitly conceptualized as indexing the subjective meaning and significance of participants’ life course experiences and operationalized as an index of qualitative change. We have also refined the use of open coding and the method of constant

comparison in the theoretical analysis phase to identify theoretically meaningful (and qualitatively different) patterns of relationships (pattern/structural, causal/functional) among the identified categories/variables.

This study thus sought to overcome the constraints and limitations that the type of quantitative indices traditionally used in evaluating prevention and intervention programs place on the richness of the phenomena that can be captured and evaluated through the development and refinement of methods and procedures for capturing qualitative indices of participants experiences in the programs using (and adapting) well established qualitative methods and procedures. In this frame, this study appears to have made a small but substantial contribution towards overcoming the split that has come to characterize developmental methodology. The results of this study, for example, illustrate the methodological utility of the LCI in capturing the life course experiences of participants in the program as well as the analytical and theoretical utility of the method of “open” and “theoretical” coding and the “method of constant comparison” when applied to the LCI measure and used within the IQ-DAS framework.

The application of the open coding procedures and the method of constant comparison by coders blind to measurement time and condition (across both conceptual and theoretical coding) to the free response data from the LCI yielded a set of highly reliable conceptual categories and theoretical categories across both of the LCI themes (Personal Identity and Life Turning Points) used in this study. Moreover, the theoretical and research codings yielded a plausible set of theoretically meaningful and significant theoretical (and research) hypotheses with respect to normative process of developmental change (including both directionality and hypothesized change mechanisms) and the

impact of intervention programs on those processes. Throughout this process, the IQ-DAS framework proved to be useful in facilitating switching between poles of the split, providing an integrated framework for drawing on both qualitative and quantitative methods and procedures.

The results of this study also illustrate the practical utility of the IQ-DAS framework in providing ready-at-hand data methods, procedures and data analytic strategies for moving through the research cycle. As noted, unlike a split framework, a relational data analytic framework such as IQ-DAS does not privilege one pole of the splits over the other. As a consequent, the use of a relational framework eliminates the need for a researcher to decide in advance which pole of the data analytic strategies to use in a particular research study. Rather, a relational framework requires that the researcher proactively explore the most appropriate data analytic strategies throughout the entire data analysis process.

Theoretical Implications

A third and equally challenging goal of the research reported here was theoretical. The troubled youth in the Changing Lives Program defined the population in which we sought to promote positive development and IQ-DAS provided a methodological framework for guiding out efforts to evaluate the success of the program. The primary theoretical challenge for our program of research was in adapting, adopting, and refining a theoretical framework to guide our understanding of *what* to change and *how* to change it. Our experience has been that these two theoretical questions are highly interrelated and our strategy has been to move forward in both areas simultaneously. The next section provides a brief discussion of the intervention strategies that we use to achieve our

intervention goals. This discussion of our intervention strategies provides the context for a more extended discussion of the challenge of constructing a developmental framework to guide our understanding of what to change.

Implementation Framework: Transformative Pedagogy

Co-participatory and Transformative Learning

For its intervention strategies, CLP draws on Freire's (1983/1970) approach to empowering marginalized people by enhancing their critical consciousness about their exclusion from the mainstream. Freire developed this approach, termed *transformative pedagogy*, in his work with impoverished Brazilian peasants and we have found it to work well with the multiculturally diverse marginalized population that is the focus of our intervention.

Our primary intervention goal is to *empower* troubled adolescents to change their lives in positive directions. The aim is to create contexts in which troubled young people can transform their sense of control and responsibility and change their “negative” life trajectories into positive ones. Our intervention program aim at changing lives, and we use intervention strategies that are transformative and co-constructivist to achieve this goal. A transformative co-constructivist approach seeks to create an intervention context in which students take an active role in the intervention process and the interventionist (facilitator, teacher, etc.) works with the students to co-construct alternatives to negative life pathways.

Transformative pedagogy is thus participatory; it identifies and seeks to solve problems. While intentionally identifying problems and following through by engaging in transformative activities to solve these problems, students become the “experts” and, in

the process, develop a greater sense of control and responsibility over their lives. In CLP, participants not only talk about their problems; they do something about them. They become empowered as they experience the possibility of creating (rather than enduring) the circumstances of their lives. Because of such mastery experiences, youth learn “to see a closer correspondence between their goals and a sense of how to achieve them, gain greater access to and control over resources and ... gain mastery over their lives” (Zimmerman, 1995, p. 583).

We thus consider adolescence a developmental period that provides a significant opportunity to intervene in ways that have the potential for significantly altering (in a positive direction) the adolescent’s life course trajectory. This is also why we consider the personal identity that is initially formed during adolescence serves as a “steering mechanism” that guides the remainder of the individual’s life course trajectory.

Developmental Framework: Psychosocial Developmental Theory and Life Course Theory

Linking Identity and Life Course Theory

Identity development has unarguably been addressed from multiple viewpoints. As Côté (2001) commented, "Although identity has become one of the most commonly used terms in the social sciences, it is defined in various ways from various perspectives and, as such, has no widely agreed on meaning" (p. 2). Eriksonian psychosocial developmental theory and research, however, has emerged as a leading voice in the identity literature, one with a potentially important contribution to make in positive development literature, particularly because of the way that it dovetails with emerging views of the individuals as “producers” or contributors to their own development. Life

course theory similarly hold considerable promise for contributing to the positive development literature, and one of the primary theoretical challenges in moving our program of research forward was articulating a theoretical framework for integrating psychosocial developmental and life course theory. Identity emerged out of this process as a core linking concept.

Life course theory, for example, holds that life transitions link human agency and life contexts. People bring a life history of personal experiences and dispositions to each transition, interpret the new circumstances in terms of this history, and work out lines of adaptation that maintain or fundamentally alter the direction of their life course. Life course theory thus views individual differences as interacting with the new transition experience to influence responses and accommodation to life events (Elder, 1998b; Giele & Elder, 1998). To this, the Eriksonian concept of identity as self-integration has the potential to add a dimension of richness with respect to the concept of human agency that life course theory suggests but does not fully capture.

Clausen (1998), for example, in discussing the methods (e.g., life reviews and life stories) he used in his longitudinal (spanning 50 years) life course research reported that, “I repeatedly found myself coming back to the concept of identity” (p. 202). Identity, he noted, helped to make sense out of the continuities and discontinuities, the ups and downs in life satisfaction, and the turning points in the courses of the lives he studied. Identity, however, was not only helpful in understanding the individuals he studied, it also helped make clear the central role that human agency played in giving direction to their lives. In his longitudinal research, for instance, he found that positive life satisfaction was associated with a greater sense of confidence and control whereas dissatisfaction was

associated with a sense of inadequacy. Giele and Elder (1998), in their summarization of Clausen's work, noted that he placed "the individual in the driver's seat, so to speak, as *the* appropriate focus for life course analysis" and themselves concluded, "What gives the life course its *life* is the sentient individual going through vital changes, encountering new relationships and circumstances, and, in the end, deciding whether to hold or change course" (Giele & Elder, 1998, p. 184).

The concept of identity derived from psychosocial developmental theory, when integrated with the concept of life transitions and turning points derived from life course theory, provides a link between development, context, and human agency—i.e., a coherent conceptualization of individuals as producers of their own development. Linking these concepts, in turn, highlights the role of identity as the steering mechanism that guides the life course. A *life trajectory* is the course or path of the individual's life as it moves through the sequence of socially defined, age-graded events and roles over time (Elder, 1998a; 1998b), and identity is the "self-structure" (i.e., the self-constructed, coherent, and dynamic organization of the individual's drives, abilities, beliefs, and personal history) that steers the individual along this path.

Identity Development as a Positive Intervention Outcome

Growing support for the utility of concept of the development of a mature identity (i.e., a self-constructed, coherent, and dynamic organization of the self) as the steering mechanism guiding the individual's life course trajectory can also be found in the prevention and intervention literatures. As early as 1957, Erikson and Erikson (1957) foresaw and remarked upon the importance of intervening during adolescence in order to redirect the energies of young people toward productive styles of living and prevent

society's confirmation of, and a young person's commitment to, a socially marginalized identity. The need for the development of youth intervention programs that specifically target identity in the broadest or global sense (the adolescent's answer to the question, "Who am I?"), for example, has been raised in the ego identity literature (Archer, 1994; Markstrom-Adams, 1992, Montemayor, Adams, & Gullotta, 1994; Montgomery & Sorell, 1998). In the positive development literature, Catalano et al. (1999) used the concept of "positive identity development" as an umbrella concept for describing the diversity of types of quantitative measures of positive development reported in their literature review. Finally, in the prevention literature, efforts to broaden the criteria by which preventive interventions are evaluated (beyond reducing risk factors) have resulted in the inclusion of more general indices of positive adjustment and optimal functioning. Emerging views of psychological health and resilience, consequently, often include the sense that one's life has a purpose and plan, insight into who one really is, and a sense of being able to exact some measure of control over one's life (e.g., Masten & Coatsworth, 1998). The concept of a positive identity thus appears to provide a useful core organizing concept for discussions of positive outcomes, particularly so in the context of the diverse collection of general indices of positive adjustment and optimal functioning that emerged across diverse literatures.

The concept of identity, with its origins in psychosocial developmental concepts, when coupled with the emergence of life course concepts such as life transitions and turning points, thus provided a useful vocabulary for integrating a broad range concepts helpful in documenting the impact of such interventions in helping young people to turn their lives around and change their life course or life trajectory in positive ways.

Moreover, the linking of the theories provided a vocabulary of concepts that was especially relevant to our work with adolescence undergoing the transition to adulthood.

The psychosocial life course approach that we have been developing proved useful in the theoretical coding (refining and linking content conceptual categories, identifying mechanisms of change, generating research hypotheses) conducted a part of this research study for both the personal identity and life turning point theme from the LCI. Concepts drawn from psychosocial developmental theory and life course theory, for example, both proved useful in the theoretical coding of the Personal Identity theme from the LCI whereas the theoretical coding of the Life Turning Points drew mainly from life course theory.

Limitations

Although the findings from the study pointed to potentially important practical, methodological, and theoretical implications of our program of research, it should be noted these implications are proposed as tentative and preliminary, in need of additional and more extensive future research providing additional support. More specifically, a number of significant limitations clearly constrain the interpretation of the proposed implications. They include the need for the use of more robust experimental designs (e.g., clinical trials) for the evaluation of the intervention, the use of larger and more representative samples followed over longer periods of time for the evaluation of life course change, the use of additional qualitative (and quantitative) measures, and further refinement of the qualitative measures and of the use of the method of constant comparison for open and theoretical coding.

**Additional Implication:
For the Historical Record.**

Life course theory is a theoretical orientation to the life course. Its relevance centers around the individual life course, its relation to changing social and historical conditions, and its implication for developmental processes (Elder, 1998). As noted above, the basic concepts of life course theory include the individual life course, its institutionalized pathways, life course trajectories, and transitions.

Life course theory emerged in response to limitations in conventional knowledge of human development (Elder, 1998). More specifically, it addresses the need to replace child based, growth oriented accounts of human development with approaches that include a vocabulary of concepts for conceptualizing how human lives are organized and evolve over time (i.e., individual life course change) and how lives relate to an ever-changing society (i.e., historical change), with an emphasis on the effects of changing circumstances on developmental processes. A primary focus of life course theory is thus on the ties between history and lives, the process of constructing one's life, and the implication of timing in one person's life for the relationship between people and trajectories. Timing in the study of historical influence centers especially on life stage as a contingency. The same historical change has different consequences for people of different ages and developmental stage.

In this context, the focus of the Youth Development Project is on a quantitative and qualitative analysis of how contemporary adolescents (i.e., members of the birth cohort² of the 80s and 90s – the first birth cohort entering the transition to adulthood during the first decade of the 21st century) are working out their individual life courses in

the context of the existing or established social pathways available to them. In this frame, an addition goal of our program of research is to assemble and organize an initial data structure that will provide a foundational baseline from which to examine, longitudinally, in future years, the impact of the program on the long-term life course trajectory of program participants relative to the comparison condition.

Thus, in addition to contributing knowledge of how to create and enhance youth programs promoting positive development, the evaluation component of the Changing Lives Program of the Youth Development Project also seeks ultimately to make a contribution to the historical record that documents the impact of historical change on developmental change, with the (historically) recent establishment of adolescence as an extended social pathway that defines the transition to adulthood.

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APPENDICES

Appendix A
LIFE COURSE RECORD (LCR)
(Transcription of the LCI)

Student's _____ Date of

Interview: _____

Student # : _____ Name: of Interviewer

Expressed permission from the student to record the interview: Yes No

Expressed permission from the student to use anonymous quotes: Yes No

Interviewees Responses:

Past Life Experiences:

1.

1.1.

1.2.

1.3.

1.4.

Past Turning Points:

2.

2.1.

2.2.

2.3.

2.4.

Present: Who Am I?:

3.

3.1.

3.2.

Present Turning Points:

4.

4.1.

4.2.

4.3.

Current Life Satisfaction:

5.

5.1.

5.2.

5.3.

5.4.

Challenges and Resources:

6.

6.1.

6.2.

Where am I going, what do I want to do with my life?:

7.

7.1.

7.2.

7.3.

7.4.

7.5.

7.6.

7.7.

7.8.

7.9.

7.10.

7.11.

7.12.

7.13.

Life Course Interview (LCI)

=====

Instructions for the Interviewer:

The Life Course Interview is a semi-structured clinical interview used to elicit and record the subjective life story of the individual as a sequence of life course events or experiences. The participant should first complete the Life Chart, as this will be used as a guide for the individual in answering some of the interview questions.

The questions in the interview follow a sequence that includes seven themes (i.e. Where have I been, Past turning points, Where am I now, etc.). Following each theme is a series of probes designed to elicit specific information regarding the individual's life experiences.

The interview introduction and questions (including the question numbers) should be read in their entirety. It is important that the format and structure of the interview be followed exactly and that the interviewee responds *verbally* to all of the interview questions.

Interviewing Guidelines. If the participant does not describe life events in detail or if the response given needs clarification, then use **neutral** probes (two maximum) to elicit elaboration of meaning and significance.

Taping Guidelines.

Sample Meaning Probes:	Sample Significance Probes:
“What did/does that (____) mean to you?”	“ Why is this significant or important to you?”
“Can you say more about what you mean by ____?”	“ How significant or important is this to you?”
“Does that (____) mean anything else?” you?”	“Can you say more about <u>why</u> this is important to you?”

- Make sure you have a new tape in the tape recorder, that it is turned on, and the tape labelled.
- ALWAYS take a minute before you start the interview to test record a small section and play it back to make sure the recorder is functioning.

In administering the LCI, the interviewer provides the following introduction (see **Appendix Y** for a sample LCI interview protocol):

Interview Introduction:

Thank you for taking the time to talk with me today. This should take about a half an hour or maybe longer. I would like your permission to tape record this interview. The tapes will be kept under lock and key and will not be shared with anyone. I also would like your permission to use anonymous quotes from some of the things that you tell me. Would this be all right?

For the record, my name is _____ (interview's full name) and I have permission to record this conversation. I am interviewing _____ (student's initial's only) on _____ (date) in at _____ (location).

The purpose of this interview is to gain an understanding of what your life experiences have been like. I will be asking you about different events in your past, present and future life, what these events mean to you and how significant they are to you. We are mainly interested in finding out about who you are, where you're coming from, and what you want to do with your life.

It is possible that you have been interviewed before regarding the same subject matter. It does not matter whether your answers are the same or different. We continue our interest in your life and how it may or may not change over time. Therefore we appreciate your continued cooperation in sharing information about your life with us.

Do you have any questions before we get started?

I would now like you to get comfortable and think about your life. Throughout this interview I will be asking you a series of questions, which pertain directly to the Life Chart you filled out previous to this interview. If at any time throughout this interview you have any questions or would like me to stop the tape for any reason, please say so.

I will now begin with the interview questions.

Interview Themes/Questions/Probes:

I. Past Life Experiences: Where have you been?

Let's start with where you have been. I would like for you to look over your chart and think about the most important high and low events in your life up to the present time.

1. What are the most important past event in your life?
 - 1.1. Now locate the most important high event. Tell me the age and level of satisfaction you marked and describe as much as you can in detail about this life event. (Probe for meaning and significance as necessary)
 - 1.2. Tell me as much as you can in detail about the most important low event including your age and level of satisfaction.
 - 1.3 Tell me as much as you can about the other points you marked.

II. Past Turning Points

A turning point is time in which your life really took a different direction or when you underwent a dramatic change in how you saw yourself or the world.

As you think about your life and look over the life chart I would like you to pick out points along your past or present life course that you would call turning points. They could be the events on your life chart but they do not have to be.

2. What are the past turning points in your life?

2.1. Please describe what you consider the most important first turning point in your life up to now.

2.2. Explain why you consider it a turning point.

Interviewer: If not included in the response, probe for the following

- What age did it occur?
- What impact did it have on your life?
- Was it positive or negative?
- What caused or influenced the change?

2.3. How much control and responsibility did you have over this change?³

2.4. Describe in detail any other turning points in your past.

Interviewer: If not included in the response, probe for the same as (1,2) above

III. Identity

Next, let's talk about more where you are right now – the circle with an x in it ⊗.

I would like you to think for a moment -- what comes to mind when you ask yourself this next question (pause).

3. Who am I?

3.1. Now, I would like you to tell me your thoughts about the answer to that question. (Probe as necessary)

3.2. Explain what you mean by that **OR** tell me more about that.

IV. Present Turning Points

Now I would like you to think about turning points in your life now.

4. Are you undergoing a present turning point?

4.1. If so, why do you consider it a turning point?

Interviewer: If not included in the response, probe for the following

- What impact is it having on your life?
- Is it positive or negative?
- What is causing or influencing the change?

4.2. How much control and responsibility do you have over this change?

V. Present Life Satisfaction

Now I would like you to think about how satisfied you are with your life.

5. Using the satisfaction level from the chart, tell me how satisfied you are with your life now.

5.2. When you say that your level of satisfaction is ___ what does that number mean to you?

5.3. What do you like about your life and want to keep the way it is (or want more of)?

5.4. What do you not like about your life (or what you would like to change)?

VI. Challenges and Resources

Now I would like for you to think about what resources in your life either help (resource) or hinder (challenge) your effort in doing what it is you want to do with your life.

6. What are the most serious challenges and resources you face in your life?

6.1. Tell me more in detail about this most serious challenge, obstacle, problem, issue, or barrier you face in doing what you want to do with your life right now.

6.2. Tell me more in detail what you consider the most important resource, including people, institutions or other things that you consider will be helpful in doing what you want with your life?

VII. The Future: Where am I going? What do I want to do with my life?

Finally, let's talk about where you want your life to go.

7. Where do you see your life going in the future?

7.1. I would like for you to think forward for a moment and describe what you anticipate will be the **high** points of your life in the future. Explain

7.2. How satisfied do you believe you will be at each of these high points?

7.3. How much control and responsibility do you think you will have over the future high points you described?

7.4. What do you think will be the important low points? Explain.

- 7.5. How much control and responsibility do you think you will have over the future low points?
- 7.6. Describe what you consider the most serious obstacle, problem, issue, or barrier you face in doing what you want to do with your life.
- 7.7. Describe the support you have in your life right now that will be helpful in assisting you in doing what you want in the future.
- 7.8. What do you think you will be doing 5 years in the future? How satisfied do you think you will be?
- 7.9. What do you think you will be doing 10 years in the future? How satisfied do you feel your life will you be?
- 7.10. What will be the important life events in your life at 15 years in the future (or later)? How satisfied do you feel you will be?

I would like to take this time to thank you for your thoughtful responses to these questions.

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VITA

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