A Theory of Generativity and Its Assessment Through Self-Report, Behavioral Acts, and Narrative Themes in Autobiography

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Generativity may be conceived in terms of 7 interrelated features: cultural demand, inner desire, generative concern, belief in the species, commitment, generative action, and personal narration. Two studies describe the development and use of 3 assessment strategies designed to tap into the generativity features of concern, action, and narration. A self-report scale of generative concern—the Loyola Generativity Scale (LGS)—exhibited good internal consistency and retest reliability and showed strong positive associations with reports of actual generative acts (e.g., teaching a skill) and themes of generativity in narrative accounts of important autobiographical episodes. In 1 sample of adults between the ages of 19 and 68, LGS scores of fathers were higher than those of men who had never had children.

The purpose of this article is to provide a conceptual and methodological framework for the scientific study of generativity. Over 40 years ago, Erik Erikson (1950) introduced the concept of generativity in the context of a life-span theory of personality development. According to Erikson, generativity "is primarily the concern in establishing and guiding the next generation" (1963, p. 267). In Erikson's stage model, the polarity of generativity versus stagnation is the psychosocial centerpiece of the seventh of eight major developmental stages, the stage loosely associated with the middle-adulthood years. In the ideal Eriksonian scenario, the adult approaches the issue of generativity after resolving earlier developmental issues of adulthood: identity versus role confusion (Stage 5) and intimacy versus isolation (Stage 6). As Erikson conceived it, once the adult has consolidated a sense of who he or she is (identity) and established long-term bonds of intimacy through marriage or friendships, then he or she is psychosocially ready to make a commitment to the larger sphere of society as a whole and its continuation, even improvement, through the next generation. In generativity, the adult nurtures, teaches, leads, and promotes the next generation while generating life products and outcomes that benefit the social system and promote its continuity from one generation to the next.

From Erikson's point of view, generativity may be expressed in bearing and raising children, in that parents are actively involved in providing for the next generation as epitomized in their own offspring. But not all parents are especially generative, Erikson maintained, and generativity is by no means limited to the domain of parenthood. One may be generative in a wide variety of life pursuits and in a vast array of life settings, as in work life and professional activities, volunteer endeavors, participation in religious and political organizations, neighborhood and community activism, friendships, and even one's leisure-time activities. Some of Erikson's most compelling examples of generativity appear in his psychobiographical explorations of the lives of Martin Luther (Erikson, 1958) and Mahatma Gandhi (Erikson, 1969), both of whom appear to have been their most generative in the bright light of public action rather than in the private realm of friends and family.

Despite Erikson's provocative analyses of generativity in case studies (see also Erikson, 1975, 1976, 1980, 1982) and despite the general upsurge of interest during the past two decades among social scientists in adult development, research and theorizing on generativity have been scattered, sparse, and unsystematic. Browning (1975), Kotre (1984), McAdams (1985), and Peterson and Stewart (1990) have made theoretical statements about generativity that appear to expand on and depart from certain Eriksonian notions, but no attempt to organize these statements into a framework has been made, and no systematic theory of generativity has been offered. A few studies have supported the general idea that generativity is indeed a salient preoccupation for many American adults (Ryff & Heincke, 1983; Ryff & Migdal, 1984; Vaillant & Milofsky, 1980). Others have assessed the relations between generativity and certain personality dispositions (McAdams, Ruetzel, & Foley, 1986; Van de Water & McAdams, 1989). For instance, McAdams et al. (1986) showed that generativity ratings of adult interviews were positively correlated with the sum of power and intimacy motivation assessed on the Thematic Apperception Test.

Very little attention has been paid to the problem of measur-

ing individual differences in generativity. To assess generativity directly, previous studies have used global clinical ratings that were based on the researchers' reading of Erikson (Snarey, Kuehne, Son, Hauser, & Vaillant, 1987), simple self-ratings (Ryff & Heincke, 1983), or standardized personality scales designed to assess traits that seem to be components of generativity, such as dominance, nurturance, and breadth of interests (Ryff & Migdal, 1984). Ochse and Plug (1986) reported a 10-item self-report scale for generativity embedded in a large personality inventory purporting to assess each of Erikson's first seven stages. A similar measure has been developed by Hawley (1985), embedded in an assessment of all eight Eriksonian stages. Neither of these two short scales was designed with attention to problems of discriminant and convergent validity. Thus, in both cases, scores on generativity are highly correlated with scores on many other stage scales in their measures—scales that purportedly measure very different constructs. Furthermore, neither scale has been used in a systematic program of research on generativity designed to validate the measure and the construct.

A Theory of Generativity

It is our belief that a systematic research program centered on a complex construct like generativity must begin with a clear and integrative theory. What follows is a brief and schematic outline of the theoretical framework that guides our research and partly informs the development of initial assessment procedures. The theory draws from Erikson's scattered writings on generativity, but it also departs significantly from Erikson on some key points. In addition, it brings together descriptive statements about generativity offered in the writings of Becker (1973), Browning (1975), Kotre (1984), McAdams (1985, in press), and Peterson and Stewart (1990).

Generativity has been variously described as a *need, drive, concern, task,* and *issue.* It has been couched in terms of biological and instinctual imperatives (a drive to reproduce oneself), philosophical and religious longings (a search for transcendence and symbolic immortality), developmental tasks (a stage in normal growth), and societal demands (the integration of the adult into a productive niche). It has been identified with behavior (child rearing), with motives and values (concern for preserving what is good and making other things better), and with a general attitude toward life and the world (having a broad perspective and understanding one's place in the sequence of generations). It is our belief that, unlike personality traits such as extraversion (Eysenck), developmental stages such as formal operations (Piaget), and social processes such as causal attribution (Heider), generativity is not readily construed as a single, structured concept located "within" the individual. It is rather more like the construct of attachment (Bowlby) and certain other relational and multiply contextualized constructs that require the scientist to operate simultaneously on a number of different levels and to take into consideration the particular relation or fit between the person and the environment. Like attachment, the construct of generativity links the person and the social world. It exists in a psychosocial space that subsumes person and environment.

We view generativity as a configuration of seven psychosocial

features constellated around the personal (individual) and cultural (societal) goal of providing for the next generation. Figure 1 displays the seven features and their proposed interrelations. The first two features—cultural demand (1) and inner desire (2)—are viewed as ultimate motivational sources for generativity, and they combine to promote, in the adult years, a conscious concern (3) for the next generation. With the support of a belief (4) in the goodness of the human species, concern may stimulate generative commitment (5). The nature of an adult's generative commitments may reciprocally influence belief and concern, as well. If demand and desire refer to fundamental motivational sources for generativity, then concern, belief, and commitment refer to the resultant thoughts and plans about generativity that the individual formulates in the adult years.

Generative action (6) may be motivated directly by cultural demand or inner desire, as the arrows in Figure 1 indicate. But the most personally efficacious, psychologically fulfilling, and socially valuable behavioral expressions of generativity are often the products of the adult's reasoned commitments to generative endeavors and goals. Thus, ideally, generative action stems directly from commitment, which itself is enhanced by belief and stimulated by concern, which in turn has its ultimate sources in inner desire and cultural demand. Generative action —which includes the behaviors of creating, maintaining, and offering to others—may reciprocally influence subsequent generative commitments. Finally, the particular meaning of the complex relations among demand, desire, concern, belief, commitment, and action is determined by the person's narration (7) of generativity—the subjective story the adult creates about providing for the next generation. In any particular adult life located in a particular social and historical context, the seven features of generativity are organized in a unique and self-defining way. A full understanding of generativity in a given person's life, therefore, requires a full examination of all seven features.

In suggesting that generativity belongs in a particular stage in the human life cycle, Erikson alerts the reader to the fact that generativity is an issue for adults, not for children. The theory presented in this article, however, rejects the concept of a cleanly demarcated stage of the life span devoted exclusively to generativity. Erikson's stage model implies much more structural change in adult personality development than most contemporary experts and virtually all data would support (cf., Flavell, 1982; McCrae & Costa, 1990; Peterson & Stewart, 1990). Yet, Erikson is certainly right in situating generativity, in a general fashion, in adulthood. One of the reasons generativity emerges as a psychosocial issue in the adult years is that society comes to demand that adults take responsibility for the next generation, in their roles as parents, teachers, mentors, leaders, organizers, "creative ritualizers" (Browning, 1975), and "keepers of the meaning" (Vaillant & Milofsky, 1980). Generativity is prompted by the developmental expectations encoded in cultural demand. The demand is normative and age graded. As adults move through their 30s and 40s, those who are unable or unwilling to contribute to and assume responsibility for the next generation, usually through family or work, are considered to be "off time" (Neugarten & Hagestad, 1976) and at odds with the "social clock" (Helson, Mitchell, & Moane, 1984). In addi-
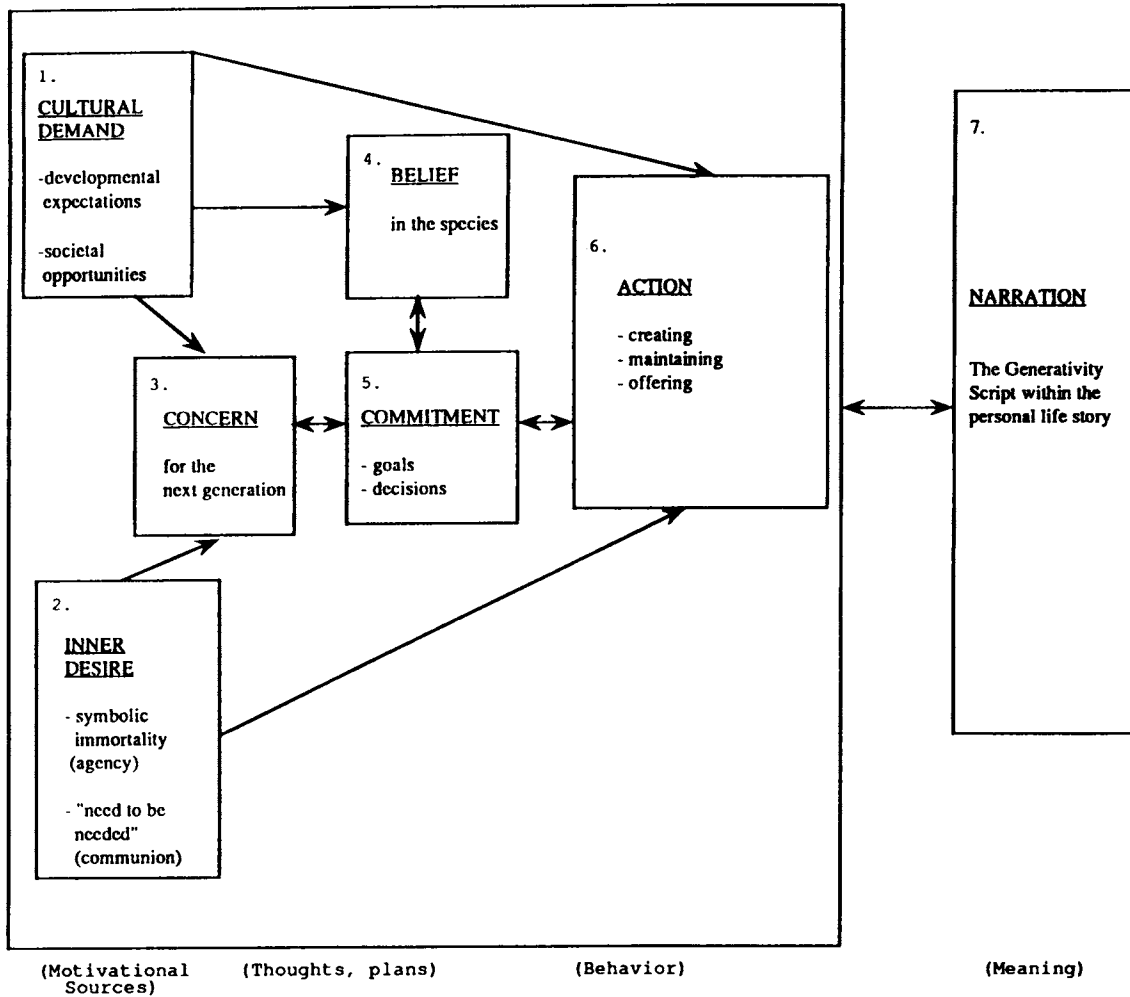
Figure 1. Seven features of generativity.

tion to such developmental expectations, the feature of cultural demand includes the many and varied occupational, ideological, and life-style opportunities and resources, as well as the constraints, that a particular society offers the adult to shape and motivate his or her generative inclinations. The feature of cultural demand in generativity, therefore, encompasses a wide spectrum of factors and forces external to the individual, and much of this domain remains unexplored in contemporary psychological research.

A second major source of generativity is inner desire. Generativity is frequently described in motivational terms as a *need, instinct,* or *drive,* producing a desire or want. Two kinds of desires have typically been identified: (a) a desire for symbolic immortality and (b) a desire to be needed by others. Kotre (1984) defined generativity as the "desire to invest one's substance in forms of life and work that will outlive the self" (p. 16). McAdams (1985) invoked Becker's (1973) concept of *heroism* in describing generativity as partly the creation of a self-defining legacy that may be offered to society and to succeeding generations as a gift. As such, adults desire to defy death by constructing legacies that live on. In addition, the generative

adult expresses a felt "need to be needed" (Stewart et al., 1988, p. 56), a desire to nurture, assist, or be of some important use to other people. These two desires would appear to be derivatives of two general motivational tendencies in human lives, aptly described by Bakan (1966) as *agency* and *communion* (cf. McAdams, 1988; Wiggins & Broughton, 1985). The desire for immortality would appear to be one manifestation of agency, as a tendency to assert, expand, and develop the self in a powerful and independent way. The desire to be needed by others would appear to be one expression of communion, as the general tendency to relate to others in loving, caring, and intimate ways, even to be at one with others.

Cultural demand and internal desire combine to promote in adulthood a conscious concern for the next generation. Thus, developmental expectations about making a contribution to the next generation and inner desires for agential immortality and communal nurturance come together in adulthood to promote the extent to which the person cares for and about the development of the next generation. Writes Erikson, "care" is "the widening *concern* for what has been generated by love, necessity or accident" (1964, p. 131). Adults may translate their

conscious concern into generative commitment, taking responsibility for the next generation by making decisions and establishing goals for generative behavior. Commitment may be enhanced, or undermined, by what Erikson has called a "belief in the species" (Erikson, 1963, p. 267; Van de Water & McAdams, 1989). This is a basic and general belief in the fundamental goodness and worthwhileness of human life specifically as envisioned for the future. To believe in the (human) species is to place hope in the advancement and betterment of human life in succeeding generations, even in the face of strong evidence of human destructiveness and deprivation. When such a belief is lacking, the adult may find it difficult to make a strong commitment to generative action, because it may appear that a generative effort may not be very useful anyway.

Guided by commitment, which itself is a product of demand, desire, concern, and belief, generative action may be expressed in any of three loosely related guises: creating, maintaining, or offering. One meaning of generative behavior is to generate things and people, to be creative, productive, and fruitful, to "give birth," both figuratively and literally. Indeed, Stewart, Franz, and Layton (1988) identify productivity as one of four main themes in generative content of personal documents, and McAdams (1985) emphasizes that generativity, unlike simple altruism or general prosocial behavior, involves the creation of a product or legacy "in one's own image," a powerful extension of the self. Equally generative is behavior that involves the conservation, restoration, preservation, cultivation, nurturance, or maintenance of that which is deemed worthy of such behavior, as in nurturing children, preserving good traditions, protecting the environment, and enacting rituals (in the school, home, or church) that link generations and assure continuity over time (Browning, 1975; Erikson, 1982). Finally, generative behavior sometimes involves the seemingly selfless offering up of that which has been created or maintained, passing something or someone on to the next generation as a gift, granting the gift its own autonomy and freedom (Becker, 1973; McAdams, 1985). For example, the truly generative father is both a self-aggrandizing creator and a self-sacrificing giver. Biologically and socially, he creates a child in his own image, working hard and long to promote the development of that child and to nurture all that is good and desirable in the child. But he must eventually grant the child his or her own autonomy, letting go when the time is right, letting the child develop his or her own identity, make his or her own decisions and commitments, and ultimately create those offerings of generativity that will distinguish that child as someone who was "given birth to" in order to "give birth to."

The last feature of generativity is narration. We conceive of generativity within the larger context of McAdams's (1985, 1987, 1990, in press) life-story theory of adult identity. According to this view, the adult defines him- or herself in society by fashioning a personal myth or life story that provides life with unity, purpose, and meaning. The process of identity development in adulthood, therefore, is the gradual construction and successive reconstruction of a personal myth integrating one's perceived past, present, and anticipated future while specifying ways in which the individual fits into and distinguishes him- or herself in the social world. Rather than viewing identity as part of a psychosocial stage for late adolescence and young adult-

hood, McAdams suggests that identity development is the major psychosocial issue for the preponderance of one's adult lifetime, and generativity is incorporated within it as one of many different and important aspects. In the context of an evolving personal myth, an adult constructs and seeks to live out a generativity script, specifying what he or she plans to do in the future to leave a legacy of the self for future generations. The generativity script is an inner narration of the adult's own awareness of where efforts to be generative fit into his or her own personal history, into contemporary society and the social world he or she inhabits, and, in some extraordinary cases, into society's own encompassing history. The generativity script, which may change markedly over the life course, addresses the narrative need in identity for a "sense of an ending" (Charme, 1984; Ricoeur, 1984), a satisfying vision or plan concerning how, even though one's life will eventually end, some aspect of the self will live on through one's generative efforts. The generativity script enables the personal myth to assume the form of "giving birth to." As Erikson writes, in midlife and after, the adult is increasingly likely to define him- or herself as "I am what survives me" (1968, p. 141).

This article focuses on three of the seven features in the proposed theory of generativity—generative concern, action, and narration. We describe the development and use of (a) a 20-item self-report scale, the Loyola Generativity Scale (LGS), which primarily assesses individual differences in generative concern; (b) a behavior checklist that includes a number of everyday actions that are suggestive of generativity; and (c) a thematic assessment of critical autobiographical experiences that taps into generative narration in one's self-defining life story. The article thus provides a theoretical and assessment framework for the study of generativity and lays the groundwork for subsequent explorations of generativity from the multiple perspectives encompassed in all seven features of the construct (McAdams, Logan, & de St. Aubin, 1992).

Study 1: Construction of a Scale

The construction and validation of the LGS followed the general sequential procedure for developing self-report scales for personality constructs adopted by Jackson (1971; Jackson & Paunonen, 1980) and others (e.g., Wiggins, 1973). According to this procedure, a scale is developed with an eye toward both theoretical and empirical criteria. Items are rationally derived from theory; the item pool is then reduced and refined through various empirical procedures that maximize internal consistency and convergent and discriminant validity while minimizing the influence of response styles. Two samples were used in the current study—one containing adults ranging in age from 19 to 68 years and the other containing a much more restricted range of college undergraduates. Results were also obtained concerning (a) age and sex differences in generativity and (b) relations between generativity scores on the LGS and one's parental status.

Method

Subjects. The first sample (adult sample) consisted of 149 adults (66 men and 83 women) ranging in age from 19 to 68 years (M = 32.7 years,

SD = 10.7 years). Of the total, 69 subjects (46.3%) indicated that they were married; 68 (45.6%) indicated that they were single; and 12 (8.1%) indicated that they were either divorced or widowed. All of the subjects were volunteers who participated in the study in the spring and summer of 1988 and were not paid for their participation. All were told that the study concerned "adults' attitudes about work and family." The subjects in the adult sample were recruited in a number of ways. Approximately one fourth of the subjects were friends and acquaintances of the graduate students who were collecting data for the project, and they were asked to complete several questionnaires in their spare time. The other three quarters of the sample were recruited from the following places of employment: (a) a large urban university (faculty and secretaries), (b) an urban hospital (nurses, technicians, and staff), (c) a large supermarket (cashiers and other employees, including managers), and (d) a community service agency. Data on socioeconomic status and ethnicity were not obtained, but the sample appeared to be predominantly working and middle class and mostly White. In the adult sample, the mean age for men was slightly higher than for women (34.9 vs. 31.0 years, respectively), $t(147) = 2.26$, $p < .05$).

The second sample (college sample) consisted of 165 college undergraduates (105 women and 60 men) attending a large urban university in 1988-1989. All were volunteers. About half of the subjects were enrolled in classes in introductory psychology, for which their participation in the study provided them with course credit. The other half were enrolled in various undergraduate courses in psychology. They received no course credit for participating.

Procedure. All of the subjects completed the following self-report scales in the designated order:

First, they completed a very brief demographic form indicating their age, sex, marital status, and number of children (if any).

Second, they completed a 17-item scale assessing Social Desirability (SD). The SD scale was from Ochse and Plug (1986) and is designed to assess the extent to which a subject tends to endorse statements that are deemed to be especially socially acceptable (e.g., "I have kind thoughts about everybody"). Subjects rated each item on a 4-point scale as follows: (0) *the statement never applies to you,* (1) *the statement only occasionally applies or seldom applies to you,* (2) *the statement applies to you fairly often,* and (3) *the statement applies to you very often.*

Third, the subjects completed a 10-item scale on generativity from Ochse and Plug's (1986) measure of Eriksonian stages. The scale incorporated the same 4-point rating procedure used in the SD scale. Ochse and Plug report high internal consistency for their short generativity scale (Cronbach's alphas around .75) and rather high correlations (over .40) between generativity and many of the other scales making up their measure, especially industry versus inferiority (Erikson's fourth stage), identity, and intimacy. Though the latter finding may be consistent with Erikson's general proposition that positive outcomes in an earlier stage of development (e.g., industry) should predict positive outcomes in a later stage (e.g., generativity), it can also be interpreted as suggesting a problem in discriminant validity of Ochse and Plug's generativity measure. In addition, generativity was fairly highly correlated with social desirability in Ochse and Plug's samples of 1,475 South African Whites ($r = .34$) and 384 South African Blacks ($r = .38$).

Fourth, the subjects completed a 14-item scale designed to assess generativity, developed by Hawley (1985). The subject rates each phrase on a 5-point scale from 0 *not at all like me* to 4 *very much like me.* The items are rationally derived and indeed seem to have considerable face validity. Yet it appears likely that scores on this scale could be highly correlated with social desirability in that many of the items (e.g., "bored" and "uninvolved with life"—indicating stagnation as opposed to generativity) suggest socially very undesirable kinds of responses.

Finally, the subjects completed a 39-item version of the LGS. Each item was rated on the same 4-point scale used for SD and for Ochse and Plug's (1986) generativity measure. The 39 items were a subset of ap-

proximately 60 original items generated by a team of researchers who were thoroughly familiar with the following sources on generativity: Erikson (1963, 1969); Kotre (1984); McAdams (1985); McAdams et al. (1986); Stewart et al. (1988); and Van de Water and McAdams (1989). We sought to cover a wide range of generative content associated with an individual's concern for the next generation with items that were structurally simple and easy to understand. A substantial number of items were phrased in the negative (a low score would indicate high generativity) to minimize the influence of social acquiescence response sets.

Results

LGS. Data from both samples on the 39-item version of the LGS were used to delineate the best 20 items to compose the final version of the LGS. First, descriptive statistics on each of the 39 items on the LGS were examined. Those items for which the subjects showed little variability in responding were dropped from the final version of the scale. Second, each item score was correlated with the total score for the 39-item LGS. Those items showing low and statistically nonsignificant part-whole correlations were dropped from the final version of the LGS. Correlations for each of the LGS items and the total scores on the two other generativity measures and on social desirability were also obtained. Items were chosen that showed relatively high correlations with either or both generativity scales (generally above .30) and low and nonsignificant correlations with social desirability (generally below .20). The same procedure for determining the quality of items was followed in both samples. The two samples revealed strikingly similar patterns of intercorrelations in this regard.

The Appendix lists the 20 best items from the above analysis. These composed the current version of the LGS used in our study. In both the college and the adult samples, each of these items showed relatively (a) wide variability in response, (b) high correlations with the total LGS score, (c) high correlations with external measures of generativity (convergent validity) developed by Ochse and Plug (1986) and by Hawley (1985), and (d) low correlations with the response style of social desirability (discriminant validity). Cronbach's alpha coefficients for the 20 items in the final LGS version were calculated for both samples. For the adult sample, alpha = .83; for the college sample, alpha = .84. These values suggest that the scale has high internal consistency.

The LGS items cover many of the most salient ideas in the theoretical literature on generativity. At least 4 of the items directly concern passing on knowledge, skills, and so on, to others, especially to the next generation (Items 1, 3, 12, and 19). Four concern making significant contributions for the betterment of one's community, neighborhood, and so on (Items 5, 15, 18, and 20). At least 6 items concern doing things that will be remembered for a long time, will have a lasting impact, and will leave an enduring legacy (Items 4, 6, 8, 10, 13, and 14). Two items emphasize being creative and productive (Items 7 and 17), and 4 items underscore caring for and taking responsibility for other people (Items 2, 9, 11, and 16). With respect to these last 4 items, the original set of 39 items contained a fairly large number emphasizing caring for other people (e.g., nurturance). But most of these were too highly correlated with social desirability to be included in the final version of the scale. One result was

that virtually all items referring to caring for children have been eliminated (the one possible exception being Item 11 on adopting children). Thus, the scale cannot be said to "discriminate against" adults who do not have children, even though child rearing receives considerable attention in theoretical writings on generativity.

A factor analysis of the 20 LGS items was performed, separately, for each of the two samples. In both samples, a first general factor of Positive Generativity (with loadings from a number of positively worded items) accounted for 26% (adult) and 29% (college) of the variance, whereas a second factor of Generative Doubts (with loadings from such negatively phrased items as 2, 14, and 15) accounted for an additional 10% (adult) and 9% (college) of the variance in LGS scores.

Adult sample: Sex, marriage, and children. Mean scores for the 20-item LGS did not differ as a function of sex (men: $M = 40.8$, $SD = 7.9$; women: $M = 42.0$, $SD = 7.0$). Neither were sex differences observed for the generativity scales of Ochse and Plug (1986) and Hawley (1985). Women did score significantly higher on social desirability, however $t(147) = 3.36$, $p < .01$. The LGS was strongly correlated with scores on the other two measures of generativity, $rs(147) = .66$ and $.67$, $ps < .001$; and only modestly correlated with social desirability, $r(147) = .21$, $p < .05$. This is not surprising in that the 20 items composing the final version of the LGS were explicitly chosen, in part, for their strong correlation with the generativity scales and their weak correlation with social desirability. Generativity concern was uncorrelated with age for the entire sample and within the female subsample. However, among men, there was a nonsignificant trend, $r(64) = .23$, $p < .10$, for generativity to be positively associated with age.

To examine the relations among sex, marriage, having children, and generativity, a series of two-way analyses of variance (ANOVAs) was performed. In the first set of ANOVAs, the variables of sex (men vs. women) and marital status (married vs. single; the data from 12 subjects who were either divorced or widowed were dropped from this analysis in that they were currently not married, though they had at one time been so) served as independent categorical predictors of the continuous variables of generativity (as measured on each of the three scales) and social desirability. These analyses produced no significant effects beyond the aforementioned main effect (positive relationship) of sex on social desirability (women scoring higher).

In a second set of two-way ANOVAs, the variables of sex and having children (yes vs. no) were paired as independent predictors. A *yes* referred to being or having once been a parent of a child. These analyses yielded striking findings for the LGS (but not for any of the other measures), especially among men. The ANOVA yielded a significant main effect for having children, $F(1, 143) = 10.26$, $p < .002$; and significant interaction effect, $F(1, 143) = 6.57$, $p = .01$.

Figure 2 displays the important interaction effect. As can be clearly seen, the relationship between having children and generative concern as assessed on the LGS is markedly strong among men but only mildly evident among women. Men who are or who have been fathers showed a mean generativity score of 45.2, as compared with men without children, who showed a mean score of 38.2. The comparable means among women are

42.2 and 41.5, respectively. These differences cannot be attributed to marital status, in that marital status was unrelated to LGS scores for both sexes. Rather, it is whether a man has ever been a father to a child that seems to make a difference in predicting his generativity score on the LGS. The result is especially noteworthy in that no items on the LGS explicitly deal with being a father and raising children.

College sample: Sex differences. For the college sample, the intercorrelations between LGS and the other three self-report scales mirror those obtained for the adult sample. Again, LGS was strongly correlated with the generativity scales designed by Ochse and Plug (1986) and by Hawley (1985). The correlation between LGS and SD was .10 (*ns*). Unlike the adult sample, clear sex differences emerged in the college sample on all four scales, as exhibited in Table 1. Thus, college women score significantly higher than college men on all three scales of generativity, including the LGS.

Data from the adult sample and the college sample were combined to assess differences between the two groups. A two-way ANOVA with sex and sample (adult vs. college) as the two independent predictors showed significant main effects for sample and for sex on the LGS. As can be seen in Figure 3, adult women scored the highest on generativity, followed by adult men and college women (whose scores were virtually identical), and finally by college men (who showed the lowest scores on LGS). The mean LGS score for the college men (37.2) was slightly lower than the LGS score for those men in the adult sample who did not have children (38.2), though this difference was not statistically significant.

When the data from the two samples were combined, LGS scores proved to be modestly but significantly associated with age, $r(312) = .17$, $p < .05$; and with social desirability, $r(312) = .17$, $p < .05$.

Discussion

Data from 149 adults between the ages of 19 and 68 and from 165 college students provide initial evidence for the viability of a new self-report measure of individual differences in generativity concern, the Loyola Generativity Scale. The 20-item scale shows good internal consistency and has low correlations with social desirability. In the adult sample, generativity was positively associated with having or having had children, though it was unrelated to marital status per se. The effect for parental status was especially strong among men, who tended to show relatively low generativity scores if they had never been fathers. Given the correlational nature of the data, we do not know if high generative concern among men is a predictor or a consequence, or both, of parental status. Still, the results suggest the provocative possibility that having children is more intimately linked with a man's generative concern than with a woman's. Clearly, more research on this topic is needed. Among the college students, women scored significantly higher on generativity than did men. In general, age was positively associated with generativity when the two samples were combined, and the adult samples as a whole scored significantly higher on generativity than did the college sample.

The LGS appears to be a promising measure for generativity concern. Concern for the next generation may lead to genera-
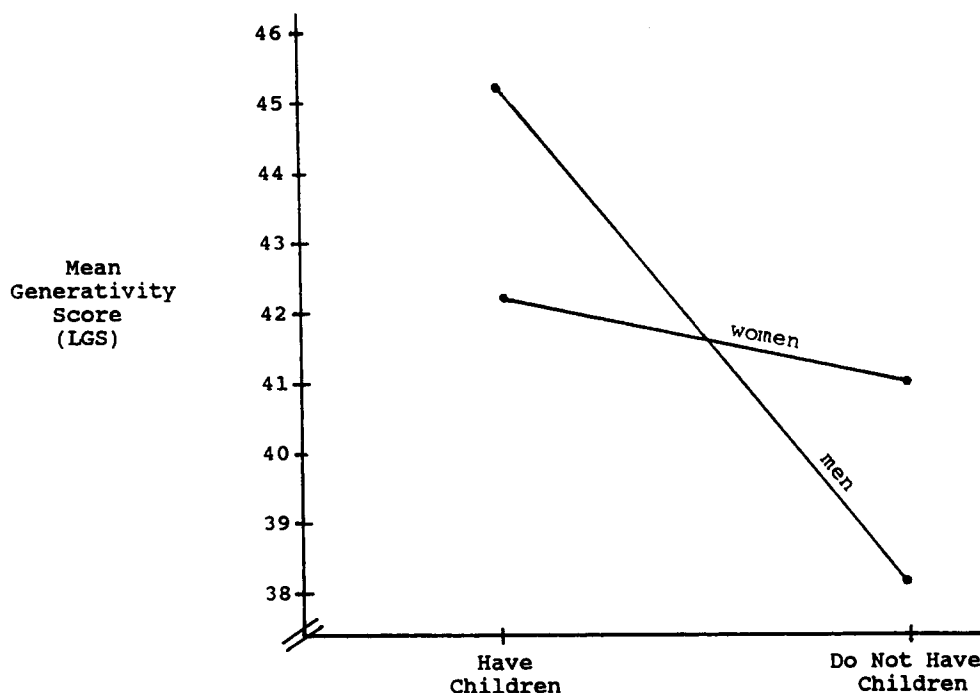
Figure 2. Mean Loyola Generativity Scale (LGS) scores as a function of gender and whether the subject has (or has ever had) children (adult sample).

tive commitments in an adult's life and the eventual display of generative behavior. It would be expected, therefore, that LGS scores should be modestly but significantly associated with reports of generative behavior. Study 2 assessed generative behavior directly through simple counts of real-life generative acts. In addition, themes of generativity were sampled in autobiographical narratives to explore the extent to which the facets of concern, action, and narration are interrelated in the broad domain of generativity.

Study 2: Behavioral Acts and Autobiographical Themes

In Study 2, we obtained test–retest data on the LGS and examined how LGS scores for generative concern relate to in-

Table 1
Means and Standard Deviations for Four Scales in the College Sample by Sex

	Men		Women		
Scale	M	SD	M	SD	t
Loyola Generativity Scale	37.2	8.8	40.4	7.5	2.45*
Ochse & Plug (1986)					
Social Desirability subscale	25.6	6.0	28.7	5.7	3.30**
Generativity subscale	18.8	4.0	21.4	3.5	4.32***
Hawley (1985) Generativity subscale	8.8	6.7	11.3	6.8	2.29*

* $p < .05$. ** $p < .01$. *** $p < .001$.

dexes of generative behavior and generative narration as assessed in objective reports of real-life behavioral acts and in open-ended descriptions of personally meaningful autobiographical events. Simple counts of concrete behavioral acts are useful in personality research, as both a direct assessment of some personality dispositions (e.g., Buss & Craik, 1984) and as external validation evidence for measures of internal behavioral dispositions. Although in the present study we clearly do not adopt the view that generativity can be reduced to a list of discrete behavioral acts, we do believe that act counts are one potentially fruitful approach to assessing the action component of generativity, and they can provide further evidence of the predictive validity of the LGS. The focus on autobiographical events affords a second, albeit subjective, perspective on action and allows one to assess generative narration through the content analysis of personal experiences. The assessment of personality themes in fantasy (McClelland, 1961; Winter, 1973) and autobiographical (Combs, 1947; McAdams, 1982, 1985) narratives has enjoyed some success in the history of the social sciences, though few previous studies have examined themes of generativity in such narratives (but see Stewart et al., 1988).

Method

Subjects. A total of 23 male and 56 female subjects, ranging in age from 25 to 74 years ($M = 45$, $SD = 9.4$), participated in the study. The subjects were obtained in two different ways. Approximately 25% of the subjects volunteered to participate in the study by responding to employee notices placed on bulletin boards at two businesses (an architectural firm and an insurance agency) in the greater Atlanta, Georgia
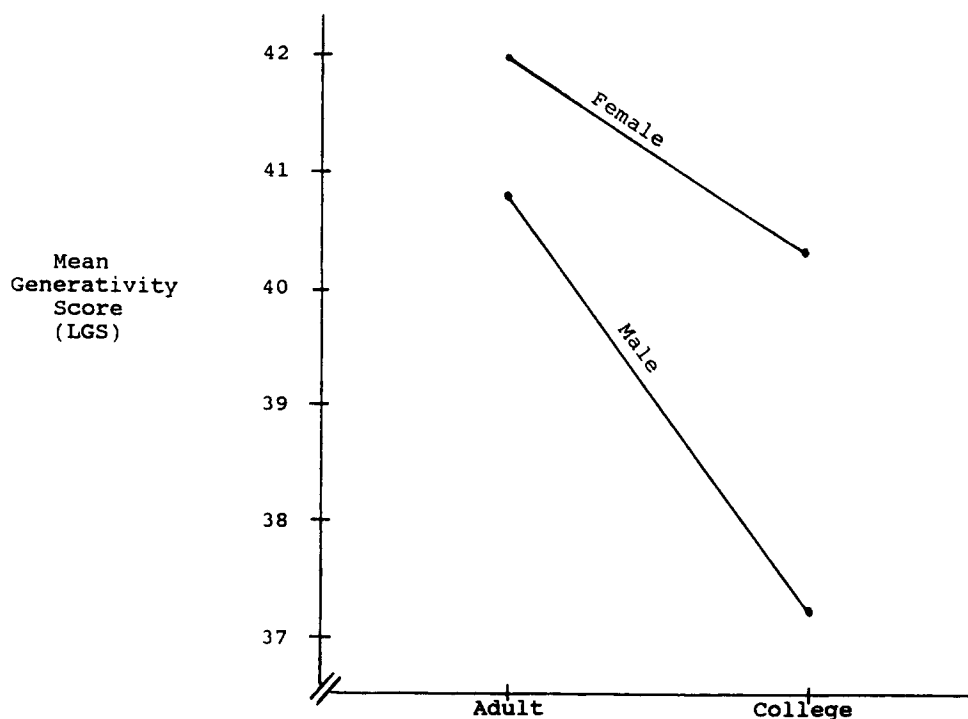
Figure 3. Mean Loyola Generativity Scale (LGS) scores as a function of sample (adult vs. college) and gender.

area. We were able to draw on personal contacts to recruit subjects from these firms. Participation was purely voluntary, and subjects were not paid. The remaining 75% of the subjects were obtained through an urban midwestern university. Students in introductory psychology classes earned credits by participating in research projects or by obtaining the participation of their parents. In this study, parents of students served as subjects.

Procedure. At the initial contact, subjects were asked to complete a small packet of measures that included (a) the 20-item LGS (described in Study 1), (b) a behavior checklist, and (c) autobiographical recollections. (In addition, the subjects completed two measures of ego development and personality traits, but these data are not included in the present article.) The subjects were asked to complete the measures in their spare time and mail them back to the researchers in an enclosed stamped envelope. The subjects were then recontacted 3 weeks after their packets were returned and were asked to complete the LGS a second time, to obtain an estimate of test–retest reliability.

The behavior checklist consisted of 65 items phrased as behavioral acts. Of the total, 49 acts were chosen to suggest generative behaviors, and 16 were chosen as acts that appeared to be irrelevant to generativity. Examples of purported generative acts included "taught somebody a skill," "read a story to a child," "attended a community or neighborhood meeting," "donated blood," and "produced a piece of art or craft." The generative acts covered a wide spectrum and included some acts that would be expected to have a very low base rate (e.g., "invented something" or "became a parent"). By and large, each act corresponded to one of the three main behavioral manifestations of generativity: creating, maintaining, or offering. Examples of acts purportedly unrelated to generativity included "began a diet to lose weight," "read a nonfiction book," "went to a musical concert," and "sent somebody flowers."

On the behavior checklist, the subject responded to each act by specifying how often during the previous 2 months he or she had performed the given act. The subject marked a 0 if the act had not been performed during the previous 2 months, a 1 if the act had been performed once during that period, and a 2 if the act had been performed more than once during the previous 2 months. The researchers obtained individual item scores as well as composite scores of the generative acts (summing across the 49), the acts irrelevant to generativity (summing across the 16), and total acts (summing across all 65).

Subjects were asked to describe in detail five autobiographical episodes: a recent peak experience, a recent nadir (low point) experience, an experience of commitment, an experience involving a goal, and an imagined future experience. (Note that the fifth experience does not correspond to a real event from the subject's past but rather describes an event that might happen sometime in the future.) For each episode, the subject was asked to describe the episode in at least a written paragraph and to address the following questions: What happened in the episode? When did it happen? Where did it happen? Who was involved? What were you thinking and feeling? What might this episode say about who you are, who you were, who you might be, or how you have developed over time? (Verbatim instructions for the five recollections may be obtained from us.)

We developed a content analysis system for coding themes of generativity in the autobiographical episodes. For each episode, the presence (score 1) or absence (score 0) of each of five generativity themes was determined. The five themes are

1. *Creating:* any reference to the subject's creating new products, initiating projects, or generating new ideas, or desiring to do so. Examples include "I wanted to create something that . . ."; "six copies of my newly published book arrived . . ."; and ". . . build a successful company."

2. *Maintaining:* any reference to the subject's putting forth effort toward sustaining an ongoing product, project, or tradition. This

would include examples of upkeep, improvement, or continuation of something that is already in existence. Examples include "I was working on the renovation project my wife and I had undertaken on a condo unit. . ."; and "We were there because it was the tradition in our family to go to midnight Mass at Christmas."

3. *Offering:* any reference to giving of the self or the self's products (e.g., money or knowledge) or the desire to engage in such giving to other people. Examples include "I wanted to provide her with comfort . . ."; and "It was extremely painful but I refused any medications [while giving birth] because I didn't want anything to affect the baby."

4. *Next generation:* any reference to a purposive and positive interaction with an individual or individuals in a younger generation. Examples include "I took my sisters' two kids bowling. . ."; "My wife, myself, and our two children made a picnic. . ."; and "I asked two of my graduate students. . ."

5. *Symbolic immortality:* any reference to leaving a legacy, having an enduring influence, or leaving behind products that will outlive one's physical existence. Examples include "You have to teach the children now because they will be taking care of the planet long after we are all gone"; "I truly believe that my book will become a part of that history . . ."; and "That little piece of land will go to my kids."

Two independent coders, blind to all other information about the subjects, scored the autobiographical episodes for themes of generativity. Scores were summed across themes and episodes for each subject to arrive at a total generative theme score for each subject. (Individual theme and episode scores were also used in subsequent data analysis.) Interrater reliability was calculated as a correlation between the total scores of the two raters. The correlation was .88, suggesting high interrater reliability.

Results

A total of 71 of the 79 subjects completed the LGS for the 3-week retest. Test–retest reliability of the LGS over the 3-week period was .73, $p < .001$, suggesting moderately high temporal stability. Mean scores on the LGS were not significantly different for the two administrations ($M = 39.53$, $SD = 8.67$ at Time 1; and $M = 40.17$, $SD = 8.65$ at Time 2; ns).

To create a generativity score from the behavior checklist, scores were summed across the 49 generative acts for each subject. These generative act scores ranged from 10 to 61 ($M = 32.37$, $SD = 11.24$). Scores on generative acts were positively and very significantly associated with LGS scores, $r(77) = .59$, $p < .001$. Correlations were also calculated for each of the 49 items as they related to LGS scores. Of the 49 individual items assumed to suggest generativity, 24 showed statistically significant correlations ($p < .05$) with the LGS, and 11 individual items were significant at the $p < .01$ level. Correlations for the 11 items most strongly associated with the LGS are shown in Table 2. These 11 items may be viewed as a short list of generative behaviors that are endorsed frequently enough to show a reasonable amount of variability in the sample and that manifest the strongest bivariate relations with scores on the LGS. The correlation between the total score summed across these 11 items and LGS was extremely high, $r(74) = .75$, $p < .001$.

The behavior checklist also yielded scores on 16 acts that were considered to be unrelated to generativity. Summing across these 16 acts for each subject, total scores ranged from 1 to 17 ($M = 5.73$, $SD = 3.48$). Total scores on unrelated acts were positively associated with the total scores on the 49 generative acts, $r(76) = .38$, $p < .001$. However, the correlation between the

Table 2
Eleven Acts Showing Highest Correlations With LGS Scores

Act	Correlation with LGS
1. Drew upon my past experiences to help a person adjust to a situation.	.56**
2. Taught somebody a skill.	.45**
3. Served as a role model for a young person.	.44**
4. Told somebody about my own childhood.	.43**
5. Provided constructive criticism about somebody's performance.	.43**
6. Restored or rehabed a house, part of a house, a piece of furniture, etc.	.36*
7. Did something that other people considered to be unique and important.	.36*
8. Made a decision that influenced many people.	.33*
9. Performed a community service.	.31*
10. Produced a plan for an organization or group outside my own family.	.30*
11. Sewed or mended a garment or other objects.	.30*

Note. LGS = Loyola Generativity Scale.
* $p < .01$. ** $p < .001$.

total score on acts unrelated to generativity on the one hand and LGS on the other was nonsignificant, $r(74) = .18$. In addition, only 1 of the 16 individual items for acts unrelated to generativity was significantly associated with the LGS. The item "Took an out-of-state vacation" correlated with LGS, $r(74) = .23$, $p < .05$. Thus, it would appear that the strong association between generativity scores on the LGS and on the behavior checklist is not simply due to any tendency for the subjects scoring high on the LGS to endorse more activities overall on the behavior checklist. More generative people are not simply more active.

Of the 79 subjects sampled initially, only 64 provided complete accounts for all five of the autobiographical episodes requested. Therefore, 15 subjects left at least one of the five experiences blank. Response rates in this regard ranged from a high of 73 complete responses for nadir experiences to a low of 66 complete responses for future experiences. Intercorrelations among the five generativity themes yielded 3 (out of 10) significant correlations: $r(61) = .41$, $p < .01$ between thematic categories of *offering* and *next generation;* $r(61) = .40$, $p < .01$ between *maintaining* and *symbolic immortality;* and $r(61) = .25$, $p < .05$ between *offering* and *symbolic immortality.* Total generative theme scores were modestly positively correlated across the five episodes, although only 2 of the 10 intercorrelations reached statistical significance (generativity as expressed in peak and nadir experiences—$r[65] = .28$, $p < .05$—and generativity expressed in peak and future experiences—$r[63] = .25$, $p < .05$).

Total scores on generative themes summed across the five autobiographical episodes ranged from 4 to 18 ($M = 8.75$, $SD = 2.93$). The total theme scores were significantly associated with

both LGS, $r(61) = .40$, $p < .01$; and the sum of 49 generative acts, $r(61) = .45$, $p < .001$; suggesting substantial convergence among the three methodologically distinct assessments of generativity. The correlation between generative themes and the short index of 11 generative acts was also significant, $r(61) = .40$, $p < .001$. As Table 3 shows, the individual theme of *offering* (summed across the five episodes) showed the strongest association with both the LGS and the generative acts, whereas the theme of *maintaining* also showed a significant association with generative acts. With respect to particular autobiographical episodes, total generativity theme scores on nadir experiences showed significant associations with both the LGS and generative acts. Of the four other episodes, goal experiences correlated significantly with LGS, whereas generative theme scores on peak, nadir, and future experiences all correlated significantly with generative acts.

Few sex differences were observed in the data. LGS and behavior checklist scores did not differ by sex. With respect to generativity themes in autobiographical recollections, men showed a slight but nonsignificant trend to score higher on *creating* than did women (*M*s = 2.4 and 1.8, and *SD*s = .87 and 1.26, respectively), $t(61) = 1.82$, $p < .10$. No significant age effects were observed. The LGS, checklist, and theme scores were all unrelated to age. A large percentage of the subjects in the study were parents (90%), making it impossible to examine the relations between generativity and parental status. Generativity scores on all measures were unrelated to the number of children in the subject's family.

Discussion

Data from 79 adults between the ages of 25 and 74 years showed how three different measures of generativity appear to converge on the construct. Assessments of a general generative concern (the LGS), of real-life generative acts displayed during a 2-month period (the behavior checklist), and of generative themes contained in narratives of autobiographical episodes showed statistically significant intercorrelations at .40 and

higher. All three measures are themselves aggregates in which test items, generative acts, or theme and episode scores are pooled to provide scores with maximal reliability and representativeness (Epstein, 1979). Disaggregating the act and narrative measures revealed that particular single acts and certain theme and episode scores showed stronger relationships with the LGS than did others. In addition, the LGS itself showed modestly high test–retest reliability over a 3-week span.

Somewhat surprisingly, generativity scores in Study 2 were unrelated to age and gender. Whereas Study 1 suggested a slight tendency for women to score higher than men on the LGS and for LGS scores to increase slightly with age, Study 2 provided no support for these trends with any of the three assessment strategies used. The assessment procedures of Study 2 did not suggest a simple developmental picture for generativity. The study did not provide any clear support for the common developmental notion, found first in Erikson, that generativity becomes an increasingly salient psychosocial concern as one moves from young to middle adulthood. One should be cautious in interpreting this result, however, in that the sample for Study 2 was not obtained in an ideal way for testing age or cohort differences. The design emphasis was on the validation of measures rather than on the testing of age–stage hypotheses. No attempt was made, for instance, to sample representatively across the adult life span. Future research using larger and more carefully drawn samples is clearly needed, including, for instance, studies with random samples stratified by age (McAdams et al., 1992).

General Discussion

This article provides a conceptual and an assessment context for the study of generativity in adult lives. Generativity encompasses the seven psychosocial dimensions of cultural demand; inner desires for symbolic immortality and to be needed by others; concern for the care and development of the next generation; a belief in the goodness and worthwhileness of the human species developing from one generation to the next; commitment to generative pursuits; generative actions, in the forms of creating, maintaining, and offering up; and the personal narration of generativity as a key feature of an adult's evolving and self-defining life story. In Study 1, we described the development of a 20-item self-report scale—the LGS—designed to assess individual differences in generative concern. Among men especially, having been a parent was positively associated with scores on the LGS. In Study 2, LGS scores significantly predicted indexes of generative acts on a behavior checklist and themes of generativity in autobiographical narration. Thus, assessments of generativity from the standpoints of concern, action, and narration would appear to converge on the general construct of generativity from three different but related angles.

The assessment of generative narration using autobiographical episodes provides a personologically rich sampling of the meaning of generativity in adult lives. If adults provide their lives with a sense of identity through the autobiographical narratives they create and tell (McAdams, 1985, 1990), then it would appear that generativity runs through some life stories as a dominant and recurrent thematic line, whereas it finds very

Table 3

Correlations of Generativity Themes in Autobiographical Episodes With LGS Scores and With Generative Acts

Theme and type of episode	LGS	Generative act
Theme		
Creating	.22	.24
Maintaining	.22	.29*
Offering	.31*	.31*
Next generation	.10	.11
Symbolic immortality	.21	.21
Episode		
Peak	.20	.30*
Nadir	.35*	.41**
Commitment	.24	.29*
Goal	.28*	.07
Future	.15	.26*
Total	.40**	.45**

Note. LGS = Loyola Generativity Scale.
* $p < .05$. ** $p < .001$.

little thematic expression in others. The individual differences are vividly portrayed when contrasting the peak experiences described by two women in the study. The first is a 29-year-old mother of three who scores extremely high on both the LGS and the generative behavior checklist. The peak experience in her story is the birth of her third child. The narrative contains themes of creating, maintenance, and next generation:

> *Peak Experience:* On May ____, I gave birth to my third child who was also my first son. This particular "labor" was my most difficult but was probably pretty normal to the nurses and doctor present. It lasted 16 hours and due to complications I was on oxygen and pitossun, a drug used to induce labor, and I was pretty miserable. My baby, husband, doctor, and various nurses were present. I was feeling pain and exhaustion and this labor lacked the "exciting" feeling I had with my first two children. I was wishing that our baby would hurry up. When John was born I felt relief first and great joy second. My husband was much more excited about having a son than I thought he would be—he, my husband, began to cry and gave me a warm hug. Holding this tiny newborn creates and stirs feelings which are truly too tremendous to write on paper. This event is important because it is the beginning of a special relationship and responsibility which will last a lifetime.

By contrast, a 45-year-old mother of two describes a very different peak experience. This second woman scores relatively low on both the LGS and the generativity behavior checklist. Her life-story high point concerns renewed love and intimacy, but no generativity themes emerge:

> *Peak experience:* About three years ago I was feeling down. We had just moved to ____ a big event in my life. However, I felt that my husband, B, and I were drifting apart. I was going to work in the city every day and I had developed a friendship with L, a younger man at work—nothing more than a friendship. But I felt that B and I were drifting further and further apart and I didn't know why. I even expressed the feeling that B didn't love me to my best friend, C. All she could say was that she was sure B still loved me very much but I thought she was just trying to make me feel better. Later that day I got home and B was home—and our children weren't. We started to talk (which is unusual because B is not much of a talker). He told me that he had talked to C earlier. It seems he was jealous of my relationship with L and was feeling very insecure. I can't express the happiness I felt when I learned that B still loved me—in fact he was jealous of L. He thought I was attractive enough to have this younger man interested in me—and me with him. I was elated naturally. I assured B that I loved him and him only but I was certainly on cloud nine. My husband of twenty years was actually jealous—and he still loved me as much as ever. We went out that evening for the most romantic dinner I've ever had.

Themes of generativity also appear in illuminating ways in persons' descriptions of the lowest points in their life stories. In this account of a nadir experience, a 50-year old woman turns the death of her husband into a story of rebirth and renewed generative commitment, including themes of creating, maintaining, and next generation. Her account shows that generativity is as much a matter of creating products and outcomes that benefit the self as it is of creating things that will benefit others.

> *Nadir experience:* On ____, my husband died at age 56 of a heart attack. I felt angry, frightened and guilty for being angry. My husband had worked hard all of his life and to die before retirement seemed to me like such a waste. Before my husband died, I had worked part time sometime and mostly no time outside the home. After about three months of disillusionment and confusion, I de-

cided that I had no choice but to get off my duff and do something to help myself. Before my husband died, he had purchased several pieces of property for income. There was no income because all of the property needed repairing. So I began a project. My two sons, my daughter, and myself have been repairing the buildings. One building is ready to be rented. I received a promotion on my job. My daughter is back in college. My sons are working full time repairing the other two buildings. We are not out of the woods yet but we can see a light at the end of the tunnel.

The conceptual scheme for generativity integrates ideas found in the writings of Erikson, Kotre, Browning, Stewart, McAdams, and others. It rejects the concept of a discrete stage of generativity in adulthood and substitutes the notion that generativity may become a salient issue for adults as they grow older because of increasing cultural demand. It contends that generativity cannot be understood from a single personal or social standpoint, but that it must instead be viewed as a psychosocial patterning of demand, desire, concern, belief, commitment, action, and narration. While the seven facets of generativity may shade into one another, they suggest multiple perspectives from which the complex construct of generativity may be viewed. No particular perspective is prototypical or essential. Adults are generative in different ways, sometimes through their beliefs and concerns, sometimes through their commitments and actions, and so forth. To comprehend the nature of generativity in a given adult's life, the unique patterning of demand, desire, concern, belief, commitment, action, and narration within that person's life, situated in a particular social and historical context, must be assessed, interpreted, and evaluated.

The two studies reported herein lay the groundwork for initial assessment, interpretation, and evaluation by providing data from three different measurement strategies—self-report of generative concern, behavioral acts, and narrative themes in autobiographical episodes. The three strategies would appear to hold promise for further research applications, as in studies of the manifestations and origins of individual differences in generativity. Nonetheless, other measurement strategies are needed if generativity is to command the broad and deep empirical scrutiny that this rich theoretical construct deserves. Links between generative desires (for immortality and the need to be needed) and other aspects of generativity (action, belief, etc.) have never been explored in the empirical literature. The ways in which cultural demands can promote and hinder the development of generative concern, belief, commitment, and action also await systematic empirical examination. With the exception of Kotre (1984), researchers have not attempted to understand how mature adults create meaning in generativity and how they engage in personal narrations of generativity that assume important positions within their own evolving stories of self and identity. By thematically analyzing autobiographical episodes, the current study makes a modest move in the direction of Kotre's (1984) rich qualitative analysis. But more "thick description" of generativity is desperately needed in the scientific literature. What kinds of life stories do especially generative men and women construct? What life trajectories do they specify? What formative experiences do they appropriate within their self-defining life stories to explain how it is they came to adopt especially generative roles and values in life?

Future studies of generativity might do well to adopt both qualitative and quantitative methodologies to explore questions such as these.

And there are, of course, important developmental questions to address. Whether one adopts Erikson's discrete-stage position or our contention that generativity arises gradually in adulthood as a result of increasing cultural demand, most scholars would agree that generativity is a manifestly adult issue in the life cycle. Whereas children may be altruistic and prosocial, only adults are generative, we would contend. Only adults are entrusted with the responsibilities of caring for the next generation, and only adults are aware of their place in the sequence of generations as producers (Stewart et al., 1988), creative ritualists (Browning, 1975), and keepers of the meaning (Vaillant & Milofsky, 1980). One could even argue that the desire for symbolic immortality (Kotre, 1984) and the need to be needed (Erikson, 1963)—the twin motivational desires in generativity —are not experienced by most children and adolescents with the kind of urgency and salience that theorists claim adults report. The current article provides some conceptual and methodological tools for examining more closely developmental hypotheses about generativity. Although the current findings offer little support for any particular developmental viewpoint, a framework is offered for further exploration of age and cohort effects in generativity and of the development of different features of generativity over the adult life span.

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Appendix

Loyola Generativity Scale

1. I try to pass along the knowledge I have gained through my experiences.
2. I do not feel that other people need me.
3. I think I would like the work of a teacher.
4. I feel as though I have made a difference to many people.
5. I do not volunteer to work for a charity.
6. I have made and created things that have had an impact on other people.
7. I try to be creative in most things that I do.
8. I think that I will be remembered for a long time after I die.
9. I believe that society cannot be responsible for providing food and shelter for all homeless people.
10. Others would say that I have made unique contributions to society.
11. If I were unable to have children of my own, I would like to adopt children.
12. I have important skills that I try to teach others.
13. I feel that I have done nothing that will survive after I die.
14. In general, my actions do not have a positive effect on others.
15. I feel as though I have done nothing of worth to contribute to others.
16. I have made many commitments to many different kinds of people, groups, and activities in my life.
17. Other people say that I am a very productive person.
18. I have a responsibility to improve the neighborhood in which I live.
19. People come to me for advice.
20. I feel as though my contributions will exist after I die.