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Generativity and aging: A promising future research topic?

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ABSTRACT

Erikson already emphasized the importance of staying generative in old age. The concept of generativity as an important element in human development, significantly impacting on one's ability to age successfully, was discussed later by other authors as well. However, so far generativity has not received much attention in gerontology. This review summarizes and discusses the most important theoretical approaches, measurement methods, and empirical findings with regard to their relevance for gerontological research. This includes age-specific generative aspects, a critical discussion of current scales measuring generativity in older adults, and exploring empirical findings with regard to the association between generativity and successful aging. Finally, open questions concerning generativity and aging will be addressed.

Erikson (1950) introduced the concept of generativity more than fifty years ago and defined it as "the concern in establishing and guiding the next generation" (p. 267). He assumed a developmental model throughout life with eight stages and defined generativity as the seventh developmental task in midlife. Although, Erikson initially thought of generativity as a stage in midlife, he emphasized that older people should maintain a dignified generative function and proposed that grandparenthood offered individuals a second chance at generativity: "Old people can and need to maintain a *grand*-generative function" (Erikson & Erikson, 1997, p. 63).

The idea that generativity was an important contributor to a successful aging process was proposed by other authors as well. Baltes and Baltes (1990) mention generativity and wisdom as integral elements of a normative definition of an ideal state in old age. Achieving generativity, along with good health, would therefore be a strong indicator of successful aging. Fisher (1995) interviewed elderly employees and found that having a sense of purpose or generativity was central to their belief that they were aging successfully. For Kruse and Wahl (2010), old age presents an individual with an opportunity to realize generativity based on acquired idealistic (i.e. experience, knowledge and time) and material resources. They describe it as a facet that has yet to be acknowledged for its significant contributions to aging. Carlson, Seeman, and Fried (2000) point out the importance of generativity in healthy aging among older women. According to Vaillant (2007) "the mastery of generativity should be strongly correlated with successful adaptation to old age, for to keep it, you have to give it away." (p. 220).

Although, already discussed as contributor for successful aging (e.g. Baltes & Baltes, 1990), generativity did not get much attention as a gerontological topic. Most of the studies have not examined adults beyond their early 70s. However, results of these studies represent an important background for future studies on generativity and its importance for aging. More specifically, we will explore how the theoretical approaches, measurement methods, and empirical findings so far apply to gerontological research.

Theoretical background

Origins of Erikson's life cycle model

The eight-stage life cycle essay that appeared as a chapter in *Childhood and Society* was based on Erik Erikson's clinical observations and other experiences to the theoretical perspective he had mastered in Vienna. According to Friedman (1999), Erikson felt that his own work on the life cycle would never have emerged without Sigmund Freud's stage theory. Also, he

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was in training with Anna Freud in Vienna. Besides psychoanalytic theories, he was influenced by philosophers like Buber or Kierkegaard. Erik and Joan Erikson began to work together on the life cycle theory in the mid-1940s, based on Erik's efforts since the mid-1930s to move beyond Freud's psychosexual developmental scheme. Erik and Joan Erikson sought to formulate the meaning of the stage of generativity within the context of their mixed performances as parents and "wanted to capture a generative tendency, and beyond this a tendency to take care of what was generated" (Friedman, 1999, pp. 222–225).

Erikson's concept of generativity

According to Erikson (1950) generativity stems from both inner needs or drives and external societal forces. It involves fertility, productivity and creativity, affording new lives, new products and new ideas. "And indeed, the concept of generativity is meant to include such more popular synonyms as productivity and creativity, which, however, cannot replace it" (Erikson, 1950, p. 267). Middle adulthood's generative responsibility is the responsibility of each generation of adults to bear, nurture, and guide those people who will succeed them as adults, as well as to develop and maintain those societal institutions and natural resources without which successive generations would not be able to survive (Erikson, Erikson, & Kivnick, 1986).

According to Erikson et al. (1986) "it is clear that adult libido is destined to reach some maturity in a number of generative ways: from a sexual procreativity to the day's technological productivity and whatever patterns of creativity have developed in the individual" (p. 50). Children are important for generativity but "the mere fact of having or even wanting children does not "achieve" generativity" (Erikson, 1950, p. 267). According to Erikson (1950), some parents have an underdeveloped generativity; one reason is due to "the lack of some faith, some "belief in the species", which would make a child appear to be a welcome trust of the community" (Erikson, 1950).

Erikson (1950) introduced generativity (vs. stagnation) as the seventh developmental task in midlife following basic trust (vs. basic mistrust), autonomy (vs. shame), initiative (vs. guilt), industry (vs. inferiority), identity (vs. confusion), intimacy (vs. isolation) and preceding integrity (vs. despair) (for an overview see Table 1). Erikson suggested that these psychosocial strengths are all interrelated, and that later stages are dependent on the development of the previous stages in a sequential manner. Furthermore, each item exists in some form before its critical time normally arrives (Erikson, 1950). For Erikson they are stages of growth of a healthy personality.

Care, the new virtue which emerges from the antithesis between generativity and stagnation, is a commitment to take care of persons, products and ideas. As can be seen in Table 1, Erikson et al. (1986) proposed a maladaptive and malignant tendency for each stage. For generativity (vs. stagnation) it is overextension (not selecting enough of whom to take care of) and rejectivity (being too selective).

According to Erikson (1988), even for highly generative people, stagnation is not a foreign feeling. However, individuals with a steady and strong feeling of stagnation and personal impoverishment often begin to indulge themselves as if they were their own and only child (Erikson, 1950).

Erik Erikson's widow Joan Erikson elaborated on his model, adding a ninth stage (very old age) considering increased life expectancy in Western cultures (Erikson & Erikson, 1997; Joan Erikson's work on the ninth stage appears in her 1996 revisions to "The Life Cycle Completed: A Review"). Joan Erikson suggested that the old person confronts all previous eight stages again, but this time all stages converge at the same time. On top of that, the negative pole now takes the dominant role over the positive. For instance, instead of confronting generativity vs. stagnation, in the ninth stage the older adult confronts stagnation vs. generativity. Brown and Lowis (2003) found a positive correlation between age and resolution of Stage 9. However, the eight stage model is most commonly referenced and is regarded as the standard.

Generativity: a unidimensional or multidimenstional construct?

Kotre's four types of generativity

The first theorist to expand significantly upon Erikson's ideas about generativity was Kotre (1984). He proposed that four distinct forms of generativity exist: biological, parental, technical, and cultural. *Biological* generativity is about begetting, bearing, and nursing children. *Parental* generativity is expressed in feeding, clothing, sheltering, loving, and disciplining offspring (biological or not) and initiating them into the family's traditions. *Technical* generativity is accomplished by teachers, who pass on skills to those less advanced than themselves (e.g. how to read, how to program a computer, how to perform a healing ritual). When a teacher moves from teaching skills to passing on their meaning, he becomes *culturally* generative.

Erikson (1950) thought of generativity as a midlife task. According to Kotre (1996), the schedule for the appearance is misleading as Erikson failed to differentiate between the various types of generativity and their relevance. For example, biological generativity – conceiving and bearing children – has a far earlier

Table 1
Psychosocial stages in life (adapted from Erikson et al., 1986, p. 45).

Age	Maladaptive tendency	Adaptive strength		Malignant tendency	
1. Infancy	Sensory maladjustment	Trust	Hope	Mistrust	Withdrawal
2. Early childhood	Shameless willfulness	Autonomy	Will	Shame/doubt	Compulsion
3. Play age	Ruthlessness	Initiative	Purpose	Guilt	Inhibition
4. School age	Narrow virtuosity	Industriousness	Competence	Inferiority	Inertia
5. Adolescence	Fanaticism	Identity cohesion	Fidelity	Role confusion	Repudiation
6. Young adulthood	Promiscuity	Intimacy	Love	Isolation	Exclusivity
7. Middle adulthood	Overextension	Generativity	Care	Stagnation	Rejectivity
8. Old age	Presumption	Integrity	Wisdom	Despair	Disdain

onset and conclusion, particularly in the case of women, than cultural generativity. Empirical support for this suggestion can be found in Snarey's (1993) longitudinal study, in which parental generativity precedes *societal* (i.e. technical and cultural) generativity. "Societal generativity principally involves caring for other younger adults: serving as a mentor, providing leadership, and generally contributing to the strength and continuity of subsequent generations" (p. 22). This type of generativity usually begins around midlife and remains predominant until late adulthood. Similar, Manheimer (1995) proposed that cultural generativity may be linked to late life "when they have done their begetting, nurturing and passing on of skills" (p. 17).

Vaillant's six adult life tasks

Vaillant (2002) has proposed that there are six adult life tasks: identity, intimacy, career consolidation, generativity, "keeper of the meaning" and integrity. Keeper of the meaning implies the role of a wise judge; Erikson assigned parts of this task to both generativity and integrity. The focus is on the conservation and preservation of collective products, hence the culture and its institutions rather than the development of its children. A seventy-year-old is usually better at being a keeper of the meaning than a thirty-year-old, Vaillant suggested. Thus, keeper of the meaning can be interpreted as a type of generativity that becomes more important in old age.

McAdams and St. Aubin's seven psychological features

McAdams and de St. Aubin (1992) view generativity as configuration of seven psychosocial features: desire, demand, concern, belief, commitment, action, and narration (see Fig. 1). They are constellated around personal (individual) and cultural (societal) goals of providing for the next generation. Cultural demand (1) and inner desire (2) are viewed as 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). Ideally, generative actions (6) stem 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. Finally, the particular meaning of the complex relations among the six features is determined by the person's narration (7). This theory rejects the concept of a cleanly demarcated stage of the life span devoted exclusively to generativity and suggests that different age spans are associated with different features (e.g. desire as being more important for younger adults). Narration as the last feature presented in this model, may be especially important for old age.

Thus, generativity cannot only be viewed as a multidimensional concept, but these different aspects seem also to be linked to different age-groups. Similar, Stewart and Vandewater (1998) proposed a model with "early adult formulation of generativity desire, a midlife peak in confidence and capacity for generativity, and actualization or accomplishment of generativity increasing in middle and later years" (p. 95; see Fig. 2). According to this model, older adults are high in generativity accomplishment, but feel less capacity for generativity and would have less desire to be generative than in midlife. However, Stewart and Vandewater point out that longitudinal studies are needed to confirm this model.

Is there a "dark side" of generativity?

Erikson (1950) and others spoke of generativity as a desirable achievement. According to Kotre (1996), this overlooks the possibility of leaving a heritage of active destruction; it overlooks the dark side of generativity. It would be better, then, "to view generativity as an impulse that can be channelled into vice as well as into virtue" (p. 9). Hitler probably considered himself generative, despite the fact that his policies were based on principles of intense rejectivity (of non-Aryans) and warmongering (Peterson, Smirles, & Wentworth, 1997). Hitler's goals represent a sinister side to generativity that psychologists must not ignore, a side that emerges when generativity becomes exclusive (Kotre, 1992; as cited in Peterson et al., 1997). According to Peterson and Klohnen (1995), excessive narcissism

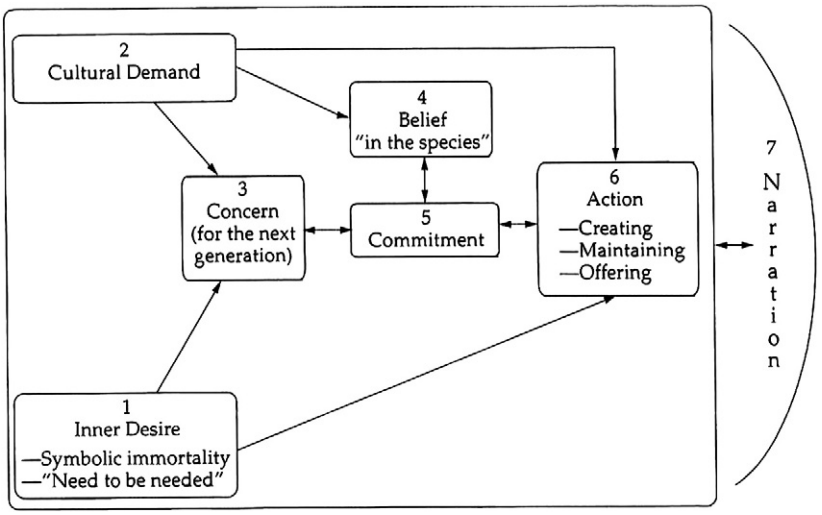

Fig. 1. Seven features of generativity (from McAdams, Hart, & Maruna, 1998, p. 9).

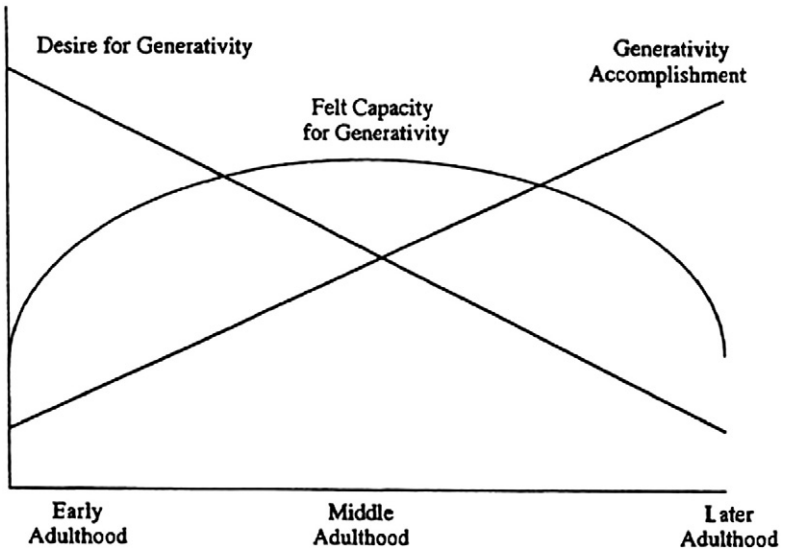

Fig. 2. Hypothesized model of the course of generativity in adulthood (from Stewart & Vandewater, 1998).

and active destructiveness are indicative of the "dark side" of generativity. Overall, the "dark side" of generativity seems to be an important aspect when interpreting findings of studies investigating generativity.

Is generativity still important in old age?

Although, according to Erikson's theory one would expect that generative inclinations would decrease in later adulthood as the person moves into the last (eighth) stage, ego integrity vs. despair, Erikson emphasized that older people should maintain a dignified generative function (Erikson & Erikson, 1997). According to Erikson and Erikson (1997), the discontinuity of family life in Western societies contributes to the lack of that minimum level of vital involvement that is necessary for staying truly alive in old age. Hagestad and Uhlenberg (2006) pointed out that age segregation impedes generativity, particularly, the creation and maintenance of a generative society. Thus, even if older people want to express their concerns, it is not always possible to achieve generativity. Erikson and Erikson proposed that, "lack of vital involvement often seems to be the nostalgic theme hidden in the overt symptoms that bring old people to psychotherapy. Much of their despair is, in fact, a continuing sense of stagnation" (p. 63). This suggests that generativity is indeed an important factor in maintaining one's psychological health in old age.

Lang and Baltes (1997) distinguished between three types of generativity in older age: a) creating lasting values which includes finalizing decisions regarding certain life goals and social contacts, b) "keepers of meaning" and thereby improving the connection between change and continuity, c) self-decentness and self-responsibility (e.g. being less demanding and thus relieving subsequent generations).

Theoretical approaches may help us to specify the construct of generativity in old age. Erikson (1950) argues that ego integrity (vs. despair) is the developmental task most important in old age: "It is the acceptance of one's one and only life cycle" (p. 268). This process also includes to look back and integrate the generative aspects in our lives, indicating the importance of life review (and life review interventions) for older adults. According to Joan Erikson (Erikson & Erikson, 1997), in the ninth stage older adults confront stagnation (vs. generativity). Stagnation could result from a lack of vital involvement (e.g. by living alone, and physically not able to leave home without regular contact to other people) and could be an important topic in psychotherapy with older adults.

Kotre (1984) sorted out different age-specific types of generativity (biological, parental, technical, cultural). According to Manheimer (1995), especially cultural generativity may be important in old age. Vaillant (2002) proposed keeper of the meaning as additional adult life task for the young old. And finally, from the seven psychological features by McAdams and de St. Aubin (1992), we assume generativity in autobiographical episodes to be especially important for old age.

Today, in Western countries more people stay active and healthy for longer than ever before and the proportion of older adults has increased dramatically over the last decades. Thus, it needs new ideas for this age group for a fulfilling life after retirement, including vital involvement with younger generations to enhance successful aging. ASEP (Austrian Senior Experts Pool) is an example for such a concept in which older adults can stay useful and needed after being retired. About 200 former executive managers pass on their practical knowledge for low-cost to young business people and others. Another example to get involved with younger generations, even if one does not have children or grandchildren, would be through foster grandparenthood.

To assess and enhance generativity in old age we need instruments applicable to older adults. Therefore, the following section discusses most important instruments for use with older adults.

What measures are appropriate to use in old age?

Researchers have developed different measures to assess individual differences in various aspects of generativity. The most commonly used and those with a special reference to

aging will be presented in chronological order. A lot more instruments measuring generativity were developed, though, e.g. "Rating of Adult life stages" (Vaillant & Milofsky, 1980), "Eriksonian Measure of Psychosocial Development" (Hawley, 1985), an interview about "Personal Plans for the Future" (McAdams, Ruetzel, & Foley, 1986), a self-report questionnaire of Erikson's stages (Ochse & Plug, 1986), a modified version of the "Erikson Psychosocial Stage Inventory" (Darling-Fisher & Leidy, 1988), the "Inventory of Psychosocial Balance (IPB)" (Domino & Affonso, 1990), "Eriksonian-stage-based Inventory of Psychosocial Development (IPD)" (Whitbourne, Zuschlag, Elliot, & Waterman, 1992), a TAT (Thematic Apperception Test) measure (Peterson & Stewart, 1996), measures of parental generativity (e.g. involvement in child care activities) (McKeering & Pakenham, 2000), and "Adults' Interests and Attitudes Interview" (Morfei, Hooker, Carpenter, Mix, & Blakeley, 2004). However, these and more instruments measuring generativity were only rarely used.

Loyola Generativity Scale (LGS)

Completing the LGS, adults rate to what extent 20 statements (e.g. "I try to pass along the knowledge I have gained through my experiences") applied to them on a 4-point scale ranging from "never" to "very often/nearly always". In an adult sample (age range 19 to 68) and a college sample, high internal consistencies were found (Cronbach's alpha of .83 and .84). Test–retest reliability of the LGS over a three week period was .73, suggesting moderately high temporal stability (McAdams & de St. Aubin, 1992). The LGS contains two items which are not applicable to older adults, namely "If I were unable to have children of my own, I would like to adopt children" and "I think I would like the work of a teacher."

The LGS is the generativity scale most commonly used (e.g. Bellizzi, 2004; Cheng, 2009; Clark & Arnold, 2008; Cox, Wilt, Olson, & McAdams, 2010; Dillon, Wink, & Fay, 2003). Sometimes, shorter versions of the LGS were adopted (e.g. An & Cooney, 2006; Bonet, Wells, & Parsons, 2007; Peterson, 2002).

Autobiographical episodes

McAdams and de St. Aubin (1992) asked participants 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*. For each episode, the subject was asked to describe the episode in a written paragraph and to address some questions. A content analysis system was developed for coding themes of generativity in autobiographical episodes. Five themes were identified: creating (e.g. "I wanted to create something that…"), maintaining (e.g. "I was working on the renovation project my wife and I had undertaken on a condo unit…"), offering (e.g. "I wanted to provide her with comfort…"), next generation (e.g. "I took my sisters' two kids bowling…") and symbolic immortality (e.g. "I truly believe that my book will become a part of that history…"). Two independent coders, blind to all other information about the subjects, scored autobiographical episodes for themes of generativity. Interrater reliability was high ($r = .88$).

This procedure was used by other authors (e.g. Azarow et al., 2003; Pratt, Norris, Arnold, & Filyer, 1999). In some studies, less than five autobiographical episodes were requested (e.g. Hart, McAdams, Hirsch, & Bauer, 2001; McAdams, de St. Aubin, & Logan, 1993; McLean & Pratt, 2006). In other studies, participants were asked to write about more than five specific scenes, e.g. McAdams, Reynolds, Lewis, Patten, and Bowman (2001) asked to describe eight specific scenes: high point, low point, turning point, earliest memory, important childhood scene, important adolescent scene, important adult scene, and other important scene.

Generative narrations could be especially important to measure in older adults, for example as part of a life review intervention. According to this, in McAdams and de St. Aubin's (1992) model of seven features of generativity, narration is the seventh and last feature.

Generative Behavior Checklist (GBC)

As a third assessment approach, McAdams et al. (1993) presented respondents with a checklist of behaviors indicative of generativity and asked them to determine how many times ("not", "one time", "more than once") they have performed each act (e.g. "Taught somebody a skill") in the past two months. The GBC consists of 50 items, 10 of them are "filler" items (not included in the generativity score) as generative activity could be associated with overall more activity. Test–retest reliability of the GBC after 6 months was .69, suggesting moderately high temporal stability (McAdams et al., 1993).

Some of the generative actions listed may be difficult for more fragile older adults (e.g. "Did volunteer work for a charity"), as much as to ask older adults if they "visited a nonrelative in a hospital or nursing home". Other actions require contact to young persons (e.g. "Read a story to a child"), and one item is especially difficult to use with older adults: Became a parent (had a child, adopted a child, or became a foster parent).

The GBC was frequently used to assess generative behavior (e.g. Bellizzi, 2004; Grossbaum & Bates, 2002; Huta & Zuroff, 2007; Morfei et al., 2004). Sometimes, shorter versions were developed (e.g. Singer, King, Green, & Barr, 2002).

Generative commitment: personal strivings

To measure generative goals, McAdams et al. (1993) used a procedure developed by Emmons (1986) for identifying an individual's most important daily strivings. Subjects were asked to write sentences describing 10 personal strivings. Personal strivings were described as "the things that you typically or characteristically are trying to do in your everyday life" and as "objectives or goals that you are trying to accomplish or attain" (McAdams et al., 1993, p. 223). For each striving, the subject was instructed to complete a sentence beginning with "I typically try to…" Each striving was coded for generativity according to three theoretically derived categories: *next generation* (e.g. involvement with younger people), *care* (e.g. providing care) and *creative contribution* (e.g. engaging in creative activities). Interscorer reliability was high ($r = .85$) for total score per subject.

This method was regularly used to measure generative commitment (e.g. Clark & Arnold, 2008; Hofer, Busch, Chasiotis, Kärtner, & Campos, 2008; Sheldon & Kasser, 2001;

Webster, 2007). Commitments may be an especially important generativity measure for use with older adults. McAdams et al. (1993) found that older adults scored higher on generative commitments than midlife adults, although the difference did not reach statistical significance.

Q-set generativity measure

Peterson and Klohnen (1995) developed a Q-set generativity measure based on questionnaire data. The Q-set deck consisted of 100 personality, attitudinal, and behavioral descriptors. Raters used the California Adult Q-set (CAQ) to describe an individual by placing each item on a continuum ranging from *extremely uncharacteristic* (1) to *extremely characteristic* (9). The number of items that could be placed into each of the nine categories was limited in such a way that the resulting Q-set profile was based on a quasi-normal distribution. Thus, only 5 items could be placed at the extremely characteristic or extremely uncharacteristic ends of the continuum, whereas 18 items could be placed in the middle category. This feature was used to construct a generativity prototype. Eight raters were given a CAQ deck and asked to provide "a Q-sort rating of what they believe to be an ideally generative person" (p. 23). These eight sorts were then aggregated into a single composite by computing the mean scores for each CAQ item and rearranging these means into the 9-point normal distribution typical of the Q-set method. The alpha reliability of the generativity prototype was .97, indicating high agreement among the raters. Following Wink (1992), Peterson and Klohnen (1995) then examined the 13 items that the judges rated as most characteristic of the generativity construct (e.g. "behaves in a giving way"). Cronbach's alpha among the 13 items was .86 and .80 in two different samples.

The Q-set measure was frequently used in studies involving generativity (e.g. Dillon et al., 2003; Peterson, 2002; Stewart, Ostrove, & Helson, 2001; Stewart & Vandewater, 1998; Wink & Dillon, 2003) and seems to be applicable to older adults.

Gen-life, Gen-current, Gen-parental

Three scales based on Kotre's (1984) four age-specific types of generativity (biological, parental, technical and cultural) complemented by social and ecological generativity were developed (Schoklitsch & Baumann, 2011). They focus on generative concerns when looking back over one's past life (life review — *Gen-life*), current generative concerns (*Gen-current*) and past parental generative concerns (*Gen-parental*). Different time perspectives (past, life review, present) were introduced, in light of the increasing levels of importance older adults assign to the past (e.g. Dittmann-Kohli, 1995). Furthermore, they are self-assessment instruments in which answers are given on a 4-point Likert-scale (from 1 = "does not apply" to 4 = "applies").

Gen-life consists of 29 items with four generativity domains: technical, cultural, social and ecological. Individuals are asked to average their generative concerns over their whole adult life (beginning at the age of 20). All items were presented with the sentence stem: "It has been a concern for me…" (e.g. "…to pass on experiences to younger people"). Younger people were defined as subsequent generations (at least 15–20 years younger).

Gen-current consists of the same 29 items as Gen-life. The only differences are that respondents are asked to indicate the extent to which the items apply to their curren life and that items were presented in a different order.

Gen-parental was created for individuals who are/were parents. The scale consists of two domains: biological and parental generativity in the narrower sense, and includes 19 items. Individuals were to indicate several concerns (e.g. read or tell stories) they have had when their child/children grew up (i.e. from birth until the age of 20).

Cronbach's alpha coefficients for the scales ranged between .68 (biological generativity, 4 items) and .83 (social generativity in the life review, 6 items), suggesting satisfying to very satisfying internal consistencies. Test–retest reliability for Gen-current and Gen-parental ranged between .60 (biological generativity) and .82 (current social generativity), indicating moderate to high stability over an average of 41.3 days. However, the results for Gen-life demonstrated only weak test–retest reliability (between .04 and .54). More studies are needed to clarify this issue.

Intercorrelations between various measures

Assessments of generative concerns (LGS), generative acts (GBC), and of generative themes contained in narratives of autobiographical episodes showed statistically significant intercorrelations between .40 (LGS and themes) and .59 (LGS and GBC) (McAdams & de St. Aubin, 1992). McAdams et al. (1993) also found that four measures of generativity (LGS, GBC, personal strivings, narrations) showed significant intercorrelations, with the highest associations obtained between generative concern and generative action (.53). Correlations between the LGS and the subscales of the Gen-life, Gen-current and Gen-parental ranged between .20 ($p<.05$, biological generativity) and .57 ($p<.01$, current societal generativity), suggesting low to medium associations (Schoklitsch & Baumann, 2011).

Influence of social desirability

Ochse and Plug (1986) found positive correlations (ranging from .34 to .38 in different samples) between their subscale of generativity and social desirability. Measures of generative concern (LGS) and action (GBC) were significantly higher in a follow-up telephone interview the second time around (after 6 months) in the study of McAdams et al. (1993), maybe becaus of response biases for social desirability inherent in direct phone interviewing, the authors propose. Schoklitsch and Baumann (2011) found that parental and biological generativity are possibly more strongly influenced by social desirability ($r=.29$ and .33, both $p<.01$) than the other domains (range: .04 for cultural generativity in the life review, $p>.05\leq r\leq.23$ for current ecological generativity, $p<.01$). The LGS was the scale most strongly associated with social desirability in this study ($r=.39$, $p<.01$), maybe because social desirability was mixed with the LGS items.

Conclusion

Instruments designed to measure generativity were generally developed for use with middle-aged adults. As the majority of these studies have not included adults beyond their early 70s, little consideration has been given to whether these assessment methods are suitable or appropriate for older people. For example, the LGS (McAdams & de St. Aubin, 1992), the most commonly used instrument measuring generativity consists of items that are problematic for older adults (e.g. regarding a current concern for having children). Furthermore, past experiences become more important for older people's self-concept (e.g. Dittmann-Kohli, 1995). Existing scales focus mainly on the present, the future or the recent past, only the Gen-life and Gen-parental include the more distant past in the assessment of generative concerns.

Most of the instruments are intended for self-assessment, the only exception being presented more detailed is the Q-sort generativity measure (based on questionnaire data). Usually, instruments measuring generativity were developed to be unidimensional. Only Gen-life, Gen-current and Gen-parental are multidimensional, including age-specific subscales. Two instruments ask participants to answer open-ended questions (generative commitment, autobiographical episodes).

Empirical findings indicate that different aspects of generativity are positively associated with each other, but not at such a high level to assume that they are all measuring exactly the same. Self-assessed generativity and social desirability were found to be associated with each other to some extent.

According to McAdams and de St. Aubin's (1992) model of seven features of generativity (see Fig. 1), generative concerns in the life review, commitments, and narration may be especially important and applicable to use with older adults.

Empirical findings on generativity

Virtually no empirical research was conducted on generativity until the early 80s (McAdams, 2001). Most of the studies afterwards did not include older adults; only a few examined adults beyond their early 70s. In the following, the most important empirical findings with regard to generativity will be summarized in three sections:

- Age
- Well-being
- Grandparenthood.

What is the relationship between generativity and age?

Different aspects of generativity may be more or less important at different times over the life course (McAdams & Logan, 2004). Young adults for example may be strongly motivated to be generative, but they may not be able to realize these desires until they have achieved the necessary resources that may attend midlife (McAdams, 2001).

All societies hold expectations regarding the timing of generativity. Most societies do not typically set forth high expectations for generativity in the very young and the very old. However, societies differ with respect to what potentially generative actions they deem appropriate at given times in the life course. “In the middle-class and professional strata of the United States, for example, young women today are typically expected to put off childbearing until well into their 20s and beyond. Yet in many cultural contexts, beginning one's biological and parental projects in the teenage years may be viewed very favourably, and even encouraged” (McAdams & Logan, 2004, p. 19).

Cross-sectional studies

McAdams and de St. Aubin (1992) found generative concerns (LGS) to be unrelated with age for the adult sample (sample ranging in age from 19 to 68 years). However, the adult sample scored significantly higher on generativity than did the college sample. In a following study, the LGS, GBC, and generative autobiographical episodes were all unrelated to age as well (McAdams & de St. Aubin, 1992). Similarly, Peterson et al. (1997) found no differences in the LGS scores between undergraduate students and their parents.

McAdams et al. (1993) investigated three age cohorts: young (ages 22–27), midlife (37–42), and old (67–72) with respect to four generativity features (concern, commitment, action, and narration). Midlife and older adults did not differ from each other in overall generativity (all four generativity features combined). Although, midlife adults score significantly higher than younger adults on generative commitments and narration, they do not score higher than older adults on these two features. Older adults, however, express relatively less generativity on the LGS, showing scores that are significantly lower than those of midlife adults (although not lower than those of young adults). Thus, support for a generativity peak in midlife was mixed in this study.

Keyes and Ryff (1998) examined the relation between age and generativity in a large sample. Age range was divided into young (age 25–39), middle-aged (40–59), and older (60–74) adults and employed three types of measures: behavioral measures, measures of generative commitment and three measures of self-construal, one of which included items from the LGS. The results showed that age impacts all three dimensions of generativity, though the impact sometimes interacted with education and/or gender effects. Middle-aged and older adults reported that they provided more emotional support and unpaid assistance to others (behavioral measures) than did younger adults. Concerning generative commitment, midlife and older adults also showed higher levels of civic responsibility, but younger adults scored higher than the two older cohorts on obligations to help children and other people directly. Midlife adults scored higher on the LGS than did young and older adults, while age was linearly related to the endorsement of trait-descriptors indicative of generativity. The last finding suggests that adults viewed themselves as increasingly caring, wise, and knowledgeable with age.

Based on retrospective data, Stewart et al. (2001) found that generativity, assessed with a shortened version of the LGS and Q-sort Generativity Realization Scale (based on Peterson & Klohnen, 1995), was higher in the 40s than the 30s in three different samples. In one sample, generativity decreased from the 40s to the 50s.

Whether the age-cohort differences obtained in these studies were due primarily to age-related development or to cohort effects cannot be determined in cross-sectional analyses. Another difficulty is the choice of age-cohort grouping, e.g. it could be

suggested that chronological age at which adults are considered midlife may have increased in recent years. Additionally, "historical cohorts may also show different understandings of what generativity is and should be" (McAdams, 2001, p. 416).

Longitudinal studies

Few longitudinal studies have been explicitly designed to assess the course of generativity over the human life cycle. Whitbourne et al. (1992) employed a sequential design covering ages 20 through 42 years and administered a self-report inventory of Erikson's stages. Longitudinal analysis did not show significant change over time in generativity from ages 31 to 42 for Cohort 1 or ages 20 to 31 years for Cohort 2. However, Peterson and Klohnen (1995) found women being rated by experts as significantly higher on generativity realization (Q-sort) at age 43 than at age 21 in one of their sample.

Stewart and Vandewater (1998) proposed that the desire to be generative emerges by early adulthood, although it is only in late adulthood that generativity can be accomplished. They used data from two longitudinal cohorts of educated women to examine the course of generativity and found that generativity desires were the most prominent features of early adulthood and declined over the course of adulthood. Generativity desire from age 24 was positively correlated with midlife generativity accomplishment in the Michigan sample.

Thus, empirical findings provide a somewhat mixed picture concerning the relation between generativity and age. Some studies found no relation between generativity and age (e.g. McAdams & de St. Aubin, 1992; Whitbourne et al., 1992). In other studies, midlife and older adults showed more similar and usually higher generativity scores than younger adults, however, midlife adults tended to be the most generative age group (e.g. Keyes & Ryff, 1998; McAdams et al., 1993). Different generativity types may have different importance over the course of life (e.g. Stewart & Vandewater, 1998). According to these findings, it is not possible to delineate a clearly defined stage of generativity in the middle of the adult life course. It is not clear when such a stage would begin, and when (and if) it would end.

Are more generative adults happier?

Studies investigating the relationship between different aspects of generativity (e.g. concerns, behavior, commitment) and well-being/life satisfaction consistently demonstrate a positive association between .20 and .36 (e.g. Keyes & Ryff, 1998; Ochse & Plug, 1986; Peterson & Klohnen, 1995; Rothrauff & Cooney, 2008; Stewart et al., 2001), especially when looking at generative concerns between .24 and .48 (e.g. Ackerman, Zuroff, & Moskowitz, 2000; de St. Aubin & McAdams, 1995; Huta & Zuroff, 2007; McAdams et al., 1993). Generative concerns were usually measured with the LGS introduced by McAdams and de St. Aubin (1992). Keyes and Ryff (1998) have provided the most extensive documentation of the relationship that exists between generativity and psychological well-being. They found that nearly all of their measures of generativity (e.g. revised version of LGS, generative traits) significantly predicted a composite measure of psychological and social well-being.

Although, most of the studies revealed a positive relationship between generativity and well-being/life satisfaction, a few studies found no or even negative associations. For example, Morfei et al. (2004) found negative correlations for women between life satisfaction and parenting communal generative acts ($r = -.41$), total generative acts ($-.30$), and communal generative acts from the GBC ($-.33$). The authors suggest that possessing relatively more concern for others (than for oneself) could be a factor influencing these negative associations. For men, no relationship between life satisfaction and well-being was found. Keyes and Ryff (1998) could show that strong feelings of obligations to family and friends were inversely related to measures of social well-being. In both samples investigated by Stewart and Vandewater (1998), midlife generativity desires (TAT measure of generativity motivation) were either uncorrelated with well-being or were associated with negative outcomes (r between $-.21$ and $-.23$).

In summary, most of the studies found small to medium associations between well-being/life satisfaction and generativity, although a few studies showed a negative relationship (especially within contexts involving a strong sense of obligation and concerns for others). Stronger associations could usually be found between life satisfaction/well-being and generative concerns, than with any other aspects of generativity (e.g. generative behavior). However, as the design of most of these studies was cross-sectional (at least according to well-being/life satisfaction), cause and effect of the results found stays unclear. Usually, when longitudinal studies were conducted (e.g. Peterson & Klohnen, 1995), only generativity was systematically assessed at different ages. Stewart and Vandewater (1998) found that early adult generativity desires were unrelated to early and midlife well-being, but more longitudinal studies are needed to clarify the relationship between generativity and well-being/life satisfaction. Thus, at this time it is not possible to assume that more generative adults are happier.

Is grandparenthood a second chance at generativity?

According to Erikson et al. (1986), grandparenthood offers individuals a second chance at generativity. For example, one woman describes the relationships with her grandchildren as warm, relaxed, and mutually respectful and satisfying — quite unlike the relationship she had with her own children. As grandparents, elders can contribute to their grandchildren's guidance and maintenance without being responsible for them. Furthermore, grandparenting enables elders to be generative in different ways. For instance, in taking their grandchildren for a weekend, grandparents care both for their grandchildren and children (Erikson et al., 1986).

Thiele and Whelan (2008) looked at the relationship between grandparent satisfaction, meaning, and generativity (measured with the LGS) and found that valued elder (how important grandparents feel it is to be remembered as a source of knowledge and support to grandchildren) and centrality meanings (how central the grandparent role is to grandparents' sense of identity, behavior, and feelings), along with generativity were best predictors of grandparent satisfaction. The association between generativity and satisfaction, although significant, was relatively weak. The authors conclude that grandparenting experiences provide older people chances to reface previously

unresolved generativity-related parenting issues and opportunities for stimulating interactions with younger people. Results are discussed in the context of grandparents' own personal needs of being loved, valued and needed.

Hagestad and Uhlenberg (2006) report a Norwegian study of participants aged 40 to 79 years about whether grandparents are more generative than individuals who do not have grandchildren. Respondents completed questionnaires including two items indicating societal generativity: participation in volunteer work and wanting more funding for day care. Individuals with no ties to younger generations were least likely to participate in volunteer work, whereas grandparents participated most, even though this trend was only significant for men in their 60s.

Warburton, McLaughlin, and Pinsker (2006) collected qualitative data about successful aging. Most participants suggested that older people have an important generative role in society involving passing on their wisdom, their experience and their values. Many older adults commented on the different relationships they experienced with their grandchildren from that experienced with their own children. Most of them felt more tolerant and relaxed with their grandchildren. In sum, respondents in this study indicated that their lives have been enriched by generative behaviors contributing to a positive experience of aging.

Fisher (1995) interviewed foster grandparents using an open-ended survey questionnaire. Understandings of successful aging and life satisfaction, factors essential for each, and differences perceived between these concepts were explored. The author proposed that subjective well-being in later life requires the fulfillment of lower needs (e.g., life satisfaction) before the individual can reach the higher level needs of self-actualization (e.g., generativity). Staying active and involved with others and having a sense of purpose or generativity was central to the foster parents' belief that they were aging successfully.

Thus, relationships with grandchildren often differ from those with children. Grandparenthood was found to be a fulfilling experience for older adults contributing to successful aging and, therefore can be viewed as a second chance at generativity.

Conclusion

In sum, according to empirical findings on generativity and age, it may not be possible to delineate a clearly demarcated stage of generativity in the middle of the adult life course, as Erikson originally proposed. Friedman (1999) argues that those who summarized Erikson may have been more precise and exact than he had been (e.g. concerning the search for measurable definitions through mechanistic stage-by-stage descriptions).

Kotre (1996) described generativity less as a stage than "an impulse released at various times between late teens and old, old age" (p. 262). In line with this, Ochse and Plug (1986) conclude from their investigation of the validity of Erikson's theory of personality development that generativity (like identity and intimacy) seem not to invariably reach a critical stage of development and become formed in the sequence and at the times of life suggested by Erikson. Similarly, Vaillant and Milofsky (1980) found that the age at which a given stage is mastered, varies enormously.

It seems that generativity in its various forms comprise laudable characteristics of adults in general and that its manifestation in later life may also depend on certain environmental factors such as availability of volunteer service roles as influenced by social policy, and by efforts to empower older adults in order to overcome barriers such as poverty, age segregation, isolation, and ageism. According to Kotre (1995), some general questions concerning generativity arise: "What if no one is interested in what I want to leave behind?", or: "What if they twist and distort it?" Generativity not only needs a giver, but also a recipient. Maybe it is, at least in part, a problem of Western societies, which eternally praise the youth, to not always appreciate the experience and wisdom of older adults. In other civilizations and history periods, older adults were deemed sources of wisdom and this gave them a significant role within the everyday life of the societies they belonged to.

Fisher and Specht (1999) found that 61% of the respondents mentioned positive interactions with others (e.g. caring about others) as necessary for successful aging. Older adults without the possibility to get involved with younger generations through grandparenthood can stay generative in many different ways: by passing on their experience and knowledge accumulated through their life (the mentioned Austrian Senior Experts Pool is a good example), by writing a book or by teaching younger generations specific skills (e.g. how to cook a certain meal), or by being a foster grandparent. More concepts are needed, like the one presented by Glass et al. (2004): *Experience Corps*, a volunteer service program designed to improve the lives of urban children and to yield health improvement for older adults based on Erikson's concept of generativity. Eggers and Hensley (2004) found in an intergenerational project involving a preschool and a retirement community: "Opportunities to interact with young children engendered a sense of relatedness to others and hope for the future for the older adult interviewees" (p. 88). In line with this, the older adults in the study of Warburton et al. (2006) indicated that "their lives have been enriched by generative behaviors which, for them, have contributed to a positive experience of aging" (p. 131). De Medeiros (2009) illustrated how generative acts helped an 85-year old man "to combat the biggest threat to self, his gradual fading away" (p. 101).

Thus, empirical results concerning generativity and aging, well-being, and grandparenthood, as well as theoretical assumptions about the importance of generativity for successfulaging (e.g. Vaillant, 2007), suggest that generativity is a promising construct for gerontology in the future.

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