Autobiographical Reasoning in Life Narratives Buffers the Effect of Biographical Disruptions on the Sense of Self-Continuity

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Abstract
Personal identity depends on synchronic coherence and diachronic continuity of the self. Autobiographical remembering and autobiographical knowledge as well as the stability of bodily integrity, of social roles, of significant others and of physical and socio-cultural environment have been suggested as supporting a pre-reflective sense of self-continuity. Stark biographical discontinuities or disruptions in these areas may destabilize the sense of self-continuity. To test the hypothesis that autobiographical reasoning in life narratives helps to compensate the effects of biographical discontinuities on the sense of self-continuity, life narratives of a lifespan sample with the ages of 16, 20, 24, 28, 44, and 69 (N = 150, 78 female) were investigated. Results confirm that if, and only if there have been biographical disruptions in the past four years, then autobiographical reasoning correlates positively with a sense of self-continuity. The findings contradict the thesis that mere remembering of past episodes is sufficient to maintain a sense of self-continuity under conditions of biographical change.

The self (James, 1890), or psychosocial identity (Erikson, 1968,) is experienced in two modes. It can be reflectively ascertained as having certain qualities (James' Me), and it can be experienced in a pre-reflective sense of familiarity with one's body, thoughts, and activities (part of James' I), termed subjective sense of identity by Erikson (1968, chapter 1). For a coherent sense of self or identity, both a synchronic integration of present elements across different situations and a diachronic integration over time, self-continuity, are essential. In its diachronic aspect, the self is both judged to be the same or continuous over time, and it is pre-reflectively felt as continuous.

An optimal subjective sense of identity is only vaguely felt as well-being (Erikson, 1968). The importance of the diachronic aspect of the self is noticed best when it is disturbed. A disturbance of the pre-reflective sense of self-continuity (short: sense of self-continuity) is felt as a sense of estrangement from, and missing sense of ownership of one's body, thoughts, feelings, and actions. This may be a temporary fluctuation as in times of stress and challenges to identity (Erikson, 1968), or a more chronic state as in depersonalization and identity diffusion (Kernberg, 1984). In these phenomena, only the immediate experience of self is estranged, while the reflective judgment of personal identity over time remains intact. A disturbance of the sense of self-continuity motivates the individual to attempt to reflectively repair it (Erikson, 1968, chapter 4). An additional disturbance also of reflective diachronic identity is socially more disruptive, because the person mistakes past actions and identities as not their own, as in dissociative identity disorders or often also in schizophrenia.

The question how diachronic identity can be achieved, given that individuals continue to change, has posed a challenge to philosophers and psychologists for centuries. Recently, the topic has again attracted psychologists' attention, both because of the increasing societal impact of longevity with associated memory loss and, in more extreme cases, a gradual loss of identity (e.g., Eustache et al., 2013), because of the turn of memory research from learning in the laboratory to autobiographical memory and its functions (e.g., Neisser, 1982), and also due to the renaissance of the life story in personality psychology (McAdams, 2006). Besides serving to prepare for future action, to establish and maintain relationships, autobiographical memory also serves to sustain self-continuity (Bluck, 2003).

Three main psychological mechanisms have been proposed to account for the pre-reflective sense of self-continuity (Habermas & Köber, 2014). The most popular mechanism is the mere act of remembering past experiences (Locke, 1634), which through the sense of vivid reliving from a first person perspective, termed autonoetic consciousness (Tulving, 2002), establishes personal identity between past experience and the remembering individual, corresponding to James (1890, I, pp. 239, 334) immediate sense of 'warmth and intimacy' (Prebble, Addis, & Tippett, 2013).

Another memory-based mechanism for sustaining a pre-reflective sense of self is the sameness of the remembered self over time. Conway, Singer, and Tagini (2004) suggest that the remembered self is systematically distorted by automatically assimilating it to the present self-concept, increasing the similarity between the present and remembered reflected self, in order to maintain conceptual self-sameness. However the limits of the assimilation of past to present self become obvious when differences become too large to be assimilated unnoticed by others.

A third mechanism is the relative stability of the individual's body, social relations, physical environment, and routine activities. They secure a sense of familiarity in one's

everyday activities. Thus a rapid change of the body such as in puberty, a sudden loss of body parts or body functions as in amputation or as a result from a stroke, of intimate others as in bereavement, of major roles as in job loss or imprisonment threaten the sense of self-continuity. Such drastic changes may be termed biographical disruptions.

Klein (2014) recently argued that a pre-reflective sense of self-continuity is a "phenomenological given" without need of support. Although Bluck and Liao (2013) do not differentiate between a pre-reflective sense of continuity and the reflective recognition and construction of self-continuity, what they term chronological self-continuity appears to include a pre-reflective sense of self-continuity. They postulate that it is unlikely to be affected by changes in one's environment. In contrast to both authors, we follow a long tradition in descriptive psychopathology (e.g., Rzesnitzek, 2014; Scharfetter, 1980) and work on life disruptions which take complaints of feeling discontinuous with one's earlier self seriously. Thus when the three mentioned habitual, highly routinized ways of sustaining a sense of self-continuity fail, less automatic and more intentional compensatory efforts are required.

If, first, the ability to recollect past experiences with a sense of reliving is diminished, as is increasingly the case in older age, this may lead to a lessening sense of self-continuity. Prebble and colleagues (2013) proposed that this lessening may be compensated for by autobiographical knowledge about extended events, lifetime periods, and their chronology in life, as represented in the higher levels of the autobiographical knowledge base (Conway, 2005). This suggestion is supported by the increasing proportion of non-episodic parts in life narratives across adulthood (Habermas, Diel, & Welzer, 2013; Thomsen, 2009) and the maintained sense of self-continuity in older age (Troll & Skaff, 1997), paralleling the maintenance of autobiographical knowledge relative to autobiographical episodic remembering.

If, second, there is a strong change in self or even biographical ruptures, neither mere remembering nor autobiographical knowledge help to boost the sense of self-continuity. When past selves cannot be simply assimilated to the self, and change is acknowledged, the contrast between past and present self tends to be exaggerated (Ross, 1989) and the past self is moved further into the past, favoring a positive evaluation of present versus past self (Wilson & Ross, 2003). These mechanisms favor self-enhancement over self-continuity. Two active strategies have been suggested to compensate for a decrease of a sense of self-continuity due to marked change in self.

A first claim is that specific kinds of arguments may bridge biographical change and disruptions. Chandler and colleagues (2003) proposed a developmental sequence of both essentialist arguments, which reduce apparent change to an underlying sameness, and of narrativist arguments, which bridge personal discontinuity by embedding it in a story about how the self has changed.

Complementing Chandler's highly elaborate arguments, we suggested several more spontaneously produced autobiographical arguments (Habermas & Paha, 2001). Autobiographical arguments are used in autobiographical reasoning, which is a process of thinking or speaking that links distant elements of one's life to each other and to the self in an attempt to relate the present self to one's personal past and future. This involves using the life as a frame of reference (Habermas & Bluck, 2000; Habermas, 2011). We built on Linde (1993) and integrated elaborations by Pasupathi, Mansour, and Brubaker (2007). The autobiographical

arguments chosen for this study bridge change in life by motivating change and self-transformation, thus corresponding to Chandler's narrativist arguments and contributing to what we term causal-motivational life narrative coherence (Habermas & Bluck, 2000). Autobiographical arguments (see Table 1) may help to bridge personal discontinuity by learning a lesson or abstracting a general insight from a specific event that may also cover other events, or by localizing an event in a larger concept of normal development (developmental status). More powerful arguments explain or motivate change in life circumstances, in personality, or in values by reference to life circumstances or to specific events. Thereby they establish the continuity of self as a reasonable individual who changes in ways that are motivated and make sense.

A second, stronger claim is that self-continuity requires actually narrating a life, bridging discontinuity by embedding the biographical disruptions and change in a biographical plot (Ricoeur, 1990). Studies suggest strategies of integrating the disruptive event into one's life (e.g., Silver, Boon, & Stone, 1983) and of narratively bridging the disruption (e.g., Bauer & Bonanno, 2001). We suggested that disruptive effects on the sense of self-continuity can be compensated by the use of autobiographical arguments in life narratives (Habermas & Köber, 2014), combining arguments and narrative embedding.

All three suggested mechanisms to maintain a sense of self-continuity rely on the life story, either as a skeletal knowledge base (life story schema; Bluck & Habermas, 2000; cf. Conway et al., 2004), as autobiographical arguments which refer to and use the life story (Habermas, 2011), or as actual life narratives. It is important to differentiate self-sameness from self-continuity. Self-sameness requires not having changed, while self-continuity requires actively bridging personal change so as to render personal identity continuous (Ricoeur, 1990). Thus at the level of self-reflection, an individual may both judge the self to have changed and to be still basically the identical person, which shows at the pre-reflective level in a sense of self-continuity despite personal change.

Prebble and colleagues (2013) called for empirical studies of compensatory mechanisms that stabilize the sense of self-continuity. We chose the case of biographical disruptions to test compensatory mechanisms. We tested the hypothesis that in cases of biographical ruptures and discontinuities, the pre-reflective sense of self-continuity can be buffered by autobiographical reasoning, i.e. the use of arguments that bridge change by embedding it in a larger life story context. We defined biographical ruptures as major external changes in life. Mechanisms for the case of a decreasing ability for autobiographical recollecting, discussed by Prebble and colleagues, remain to be tested.

Method

Participants

This study includes all participants from the third wave of a longitudinal study of life narratives with four young adult age groups, a middle aged and an older adult group (cf. Köber & Habermas, 2014). Both genders were about equally distributed across six age groups, with mean ages of 17.03 years (*SD* = .48; 13 women, 10 men), 20.58 years (*SD* = .39; 15 women, 12 men), 24.61 years (*SD* =.41; 11 women, 15 men), 28.90 years (*SD* = .67; 13 women, 10 men), 45,08 years (*SD* = 3,02; 11 women, 11 men), and 68.73 years (*SD* = 2.65; 15 women, 14 men). To stay true to the original age distances, we term the age groups ages 16, 20, 24, 28, 44 and 69.

Eight years before the present investigation, the youngest group had been sampled from the higher achieving half of third graders from an elementary school, while cohorts 2, 3, and 4 had been present or former students of a Gymnasium, i.e., a German secondary school leading to the qualification for university entrance ('Abitur'). Its mixed social composition, mainly middle class with a substantial proportion of lower class backgrounds, was comparable to that of the elementary school population. The two older age groups were recruited four years before the present investigation in the university's neighborhood via flyers and among continuing education university students. The drop out for the four younger groups across eight years was 15.4%, and for the older two cohorts across four years 12.4%. The sample is well-educated: the vast majority has achieved 'Abitur' after 12 or 13 years of schooling. The study was approved by the local institutional review board, termed ethics committee in Germany. Parental consent was obtained for minors. Participants were fluent in German and received 40 Euros for participating.

Material

Autobiographical arguments in life narratives. Participants wrote their seven most important specific memories on index cards and put them in chronological order. This served to make sure that life narratives also contained specific events. Participants were then asked to narrate their life for about 15 min without being interrupted, including the seven most important memories. They were asked to tell their life such as to explain how they had become the person they were at present. Interviewers only encouraged to continue, but asked no questions (for more detail cf. Habermas & de Silveira, 2008). Life narratives were transcribed verbatim and divided into propositions, i.e., into comprehensible main or subordinate clauses. Two coders independently divided 40 life narratives into propositions and agreed on 98.6% of propositions. Each of the two coders divided half of the remaining life narratives into propositions.

Life narratives collected in the present study were coded together with those collected in the preceding waves. Reliabilities were calculated on the independent coding of 32 life narratives, balanced for age, gender, and measurement time. Agreement was measured at the level of propositions. Thus if the same code was coded in the same proposition, this counted as an agreement, but if the coding of the proposition differed, as a disagreement. Once a good agreement was achieved, one coder coded all the remaining life narratives. As an extra safeguard, an additional Cohen's Kappa was calculated from 16 random life narratives taken from the ones coded only by one coder.

In total, we coded eight change-related autobiographical arguments (Habermas, 2011; Table 1) on the basis of detailed manuals (English translations are available from the first author), five of which had been already used for the first wave (developmental status, biographical background, lesson learned, generalized insights, formative experience; cf. Habermas & de Silveira, 2008). In addition, we also coded *turning points*, indicating a time of transition with enduring changes in life (K =.933, additional K =.915 for these six autobiographical arguments). Furthermore, we coded whenever a change in personality was explained by a specific event (Habermas & Paha, 2011) with a new manual, complemented by explanations of revelations about one's personality by specific events (Pasupathi et al., 2007; K =.742, additional K =.590).

Objective change in life. We constructed a scale to measure how much objective life

circumstances had changed in the past four years. This scale asks for absolute frequencies of typical disruptive life events: loss of or separation from partner, beginning of new love relationship, loss or gain of friends, severe illness or death in close persons, moving to another apartment, moving to a different town, change of occupation. The scale ranged from 1 (*not once*) and 2 (*once*) to 5 (*four times*) and 6 (*more than four times*). Because events differed in severity and frequency, we z-standardized each item before averaging them. Due to the expectable heterogeneity of items, Internal consistency was relatively low, α = .57.

Sense of self-discontinuity. We measured the negative of the sense of self-continuity, that of self-discontinuity, to parallel it to change in life. We constructed a four item-scale of sense of self-discontinuity, aiming at the pre-reflective feeling of familiarity with oneself in the past. The items were "I can still pretty well put myself in my own shoes from how I was ten years ago" (inverted), "When I think back to how I was four years ago, it feels a little unfamiliar" [German 'fremd', literally meaning strange as in estrangement], "When I look at pictures of myself four years back, it feels a little unfamiliar", and "I have the feeling that at the core I am the same person I was four years ago" (inverted). Internal consistency was good (α = .71; responses were scaled from 1 "not true at all" to 6 "absolutely true").

Procedure

Participants came to the lab to be interviewed and then fill in questionnaires. A few participants were interviewed at their homes, if they had moved to a different city**.** We only report the measures relevant to this study.

Results

Autobiographical reasoning was computed as the percentage of all propositions coded with an autobiographical argument. Outliers were corrected for all continuous variables by reducing them to the whiskers of boxplots. We first report mean age differences and correlations among variables, before testing the hypothesis. The three variables (objective change in life circumstances, pre-reflective sense of discontinuity, autobiographical reasoning) did not differ significantly between women and men. Therefore gender was not included in the analyses. Pearson product-moment correlations were used.

For descriptive purposes, we plotted z-standardized values of *objective change in life* and *sense of self- discontinuity* by age (Figure 1). Objective *change in life* in the past four years peaked in the 24 year-olds, with a clear cross-sectional decrease over the older age groups. The older the participants were, the lower were their values in *sense of self-discontinuity* except for the oldest group. Absolute means for *objective change in life* ranged from 1.53 (69 year-olds) to 2.31 times (24 year-olds), and for *sense of self-discontinuity* from 2.27 (44 year-olds) to 3.38 (16 year-olds; across age groups M = 2.04, SD = .57 and M = 2.85, SD = .84, respectively).

Objective change in life correlated little with subjective sense of self-discontinuity, r = .26, p < .001 (Figure 2). The proportion of autobiographical arguments in life narratives did not correlate substantially with either measures of change: with objective change in life by r = .11, *ns*, and with subjective sense of self-discontinuity by r = -.11, *ns*.

To test the hypothesis that after biographical ruptures, autobiographical reasoning compensates for a decrease in a sense of self-continuity, we calculated correlations separately depending on the degree of change in life. Because biographical rupture is a strong change in life, we expected that only those in the uppermost range of change in life would show the expected correlation. Therefore we split the participants into four equal groups by the degree

of change in life and calculated separate correlations (Figure 3). As expected, after considerable objective change in life (upper quartile) autobiographical reasoning correlated negatively with a sense of self-discontinuity, r = -.43, p = .008; if little had objectively changed in life (lower three quartiles) autobiographical reasoning did not correlate with sense of discontinuity (r = .03, -.11, -.01, all *ns*, for first to third quartile). These correlations translate into a prediction of variance, from the lowest to the highest quartile in change in life, of 0.1%, 1.5%, 0%, and 18.5%.

As could be expected from Figure 1, the quartiles of change in life were quite unequally distributed across the six age groups, χ^2 = 49.7, df = 15, p = .00, Cramer's V = .33. Whereas the two middle quartiles were more or less evenly distributed across the age groups, the lowest quartile was constituted mainly by the oldest group (in ascending age order N = 3, 2, 2, 4, 6, 20), whereas in the highest quartile the second and third-youngest groups dominated (N = 5, 11, 11, 5, 3, 2). There were too few participants to rerun hypothesis tests within each age group. To indirectly control for (linear) age effects we reran the correlations between autobiographical arguments and sense of self-discontinuity in the four quartiles of objective change in life with age partialled out (r_p = .04, -.08, .09, all *ns*, and -.36, p = .030). The predicted variance decreased in the highest quartile somewhat from R^2 = .19 to R^2 = .13. However the pattern between quartiles remained stable and the prediction in the highest quartile was still sizable.

Discussion

Summary

This first attempt to measure the effects of autobiographical reasoning on a pre-reflective sense of self-continuity demonstrated that in situations of changing life circumstances such as intimate relationships, dwelling, occupation, and health, the use of autobiographical arguments in life narratives compensates for effects on the sense of self-continuity. Results demonstrated that in the participants with the highest rate of change in life circumstances, and only in those, the rate of autobiographical reasoning correlates negatively with a sense of personal discontinuity, or positively with a sense of self-continuity. The subjective sense of self-continuity is central to philosophical notions of personhood and identity and is a clinically relevant phenomenon. Also, it prominently figures in discussions of the functions of memory for identity. Within the present study, it was tested as a function of contingencies of life and conscious efforts to create continuity in life in the context of the life story, linking events to changes in life circumstances and the self. This study confirms findings that successful coping with various life disruptions may involve biographical meaning making to integrate the event into one's identity (Park, 2010).

Limitations

Although the lifespan sample is, on the one hand, an asset of the study, on the other hand the unequal distribution of change in life circumstances across the age groups made it impossible to test the hypothesis in each age group separately. Because most biographical disruptions occurred in the young adults, the correlation between autobiographical reasoning in life narratives and the sense of self-continuity in conditions of biographical change is valid only for young adulthood.

Short young and long old lives were narrated in the same amount of time (15 minutes), requiring much more compression by the older participants. It would have been more natural to offer more time the longer the narrated lives were. However, the instruction to narrate

seven most important specific events should have counteracted the pressure on the older participants to summarize their lives. Also, the equal length of life narratives provided more standardization for the proportion of autobiographical reasoning possible across age groups.

The items used to measure sense of self-continuity were taken at face value. In the future, they might be validated in a sample of individuals with depersonalization. Also, biographical disruptions did not include internal changes such as gradual physical and cognitive change as is typical of adolescence and old age, which might have contributed to the relatively small size of objective change in life measured in the youngest and oldest groups.

Finally it might be argued that answering questions regarding the change of life circumstances and sense of self-continuity after narrating one's life might have increased the negative correlation between autobiographical reasoning and sense of self-continuity, reflecting an *in actu* increase of sense of self-continuity by the actual narrating and reasoning. However this would in no way limit the validity of the findings, but actually strengthen them due to their quasi-experimental character. If the sense of self-continuity was strengthened by the narrating and reasoning in the experimental situation, this would only imply that it could not be inferred that participants had used autobiographical reasoning to increase their sense of self-continuity before they entered the lab.

Implications

The findings confirm the usefulness of taking a biographical perspective onto remembering by studying the significance of autobiographical reasoning for the self in times of transition and possible crisis. More specifically, the study provided an empirical answer to the central question of how the self may succeed in maintaining self-continuity even in times of change. The findings provide evidence for Ricoeur's (1990) philosophical argument that when individuals change, diachronic identity can best be provided by narrative identity. This implies that the re-experiencing component of remembering (autonoetic consciousness) is not sufficient to provide a pre-reflective sense of self-continuity in times of change, refuting Locke's (1634) argument that memory sufficiently supports personal identity over time. Rather the findings provide evidence for models of personhood that involve interpretation and narration (e.g., McAdams, 2013).

The findings do not contradict the important role of mere autobiographical recollecting in times of personal stability. Also it is possible that the quality and vividness of autobiographical recollecting enhances the effectiveness of autobiographical reasoning in times of transition or may even be a prerequisite for the compensatory effectiveness of autobiographical reasoning. The findings only imply that in times of biographical change, neither mere autobiographical remembering nor autobiographical knowledge alone is sufficient to ensure a sense of self-continuity, but that this requires, in addition, an effort for autobiographical reasoning.

In the literature on functions of autobiographical remembering, three broad areas have been identified: instrumental for solving problems, social for maintaining relationships, and identity-directed for maintaining the self (Bluck, 2003). The psycho-gerontological literature has provided descriptions of more detailed self-related functions such as indulging in bitterness, fleeing boredom, and identity integration (Webster, 2003). Straight reminiscing, immerging in memories of the personal past, may strengthen the sense of being related to the personal past merely by re-calling it into the present. Looking at old pictures, reading letters and diaries, watching old home videos serves this function. These practices may have a nostalgic quality,

and do indeed strengthen a sense of self-continuity (Sedikides, Wildschut, Gaertner, Routledge, & Arndt, 2008). Similarly the biographical disruption of moving to another town to start university motivates to increasingly use artefacts as souvenirs of distant others and past self (Habermas & Paha, 2002). In the context of the functions of autobiographical remembering for maintaining a sense of self-continuity, the present study points to the need to distinguish between these forms of mere reminiscing and the more active and complex form of autobiographical reasoning that, in addition to remembering, actively creates bridges across personal change. Although some items of self-related scales in questionnaires of functions of autobiographical remembering such as the RFS (Webster, 1993) and the TALE (Bluck, Alea, Habermas, & Rubin, 2005) address attempts at autobiographical reasoning, they are mixed with other items tapping mere reminiscing. Furthermore, self-report measures are indirect measures of autobiographical reasoning. This study shows that in situations of biographical disruption, it is important to differentiate basic reminiscing from autobiographical reasoning, as the latter provides an independent contribution to buffering a sense of self-continuity. In addition, we suggest measuring autobiographical reasoning directly as done in this study.

Future directions

We point out three ways in which the present initial study could be followed up. Here we only measured autobiographical arguments that create continuity across change by motivating transformations, contributing to global causal-motivational life narrative coherence (narrativist arguments in Chandler's terms), but not autobiographical arguments that create a more abstract self-sameness across more superficial change, contributing to global thematic life narrative coherence (essentialist arguments in Chandler's terms). We focused on arguments that accept and motivate change, because this appears to be more adequate for dealing with recent sizable change in life. However, it could be that once biographical ruptures can be viewed from a certain distance, their effect on the sense of self-continuity might also be buffered by arguments that create a more abstract sameness across change, for instance by the use of metaphors. This would require developing adequate measures for coding this kind of reasoning in life narratives.

Furthermore, we only studied one of three situations that have been identified to pose a threat to the sense of self-continuity. Decrease and loss of episodic memory and psychopathological states of depersonalization should also be studied for the compensatory role of autobiographical reasoning. In old age, the sense of self-continuity may increase, as to some degree already indicated by the (relatively young) old adults in this study, due to a decline in autobiographical remembering and other areas of functioning. Reminiscing groups are widely used in care of the elderly and demented, to alleviate social isolation, but also to foster memory processes and diachronic personality integration (Birren & Svensson, 2013). It would be interesting to test specifically which mnemonic, argumentative, and narrative processes possibly buffer a decrease of recollective capacities and its effects on the sense of self-continuity (Westerhoff & Bohlmeijer, 2012). In the field of psychopathology, schizophrenia, for example, shows both a loss of the sense of continuity and an impairment in episodic memory (e.g., Danion, Huron, Vidailhet, & Berna, 2007), and might be studied for possible compensatory mechanisms. Depression, on the other hand, is characterized by a sense of standing still and not developing, involving a slowing of the subjective experience of time and a decrease of the linearity of life narratives (Habermas, Ott, Schubert, Schneider & Pate, 2008). It might therefore

profit from increasing contrasts between past and present self, again linking them by autobiographical reasoning and narrating. Also in a more general vein, the significance of a sense of self-continuity, or the lack of it, for psychopathology and especially for well-being in non-clinical samples warrants empirical study.

Finally, this study measured autobiographical reasoning in life narratives, confounding the influence of autobiographical arguments, which according to Chandler and colleagues (2003) suffice to establish a sense of self-continuity, and the influence of embedding biographical ruptures in the narrative of a life. Future studies might try to separate the possible compensatory effects of autobiographical knowledge, autobiographical reasoning, and life narration.

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Table 1 *Autobiographical arguments: Examples (Slashes indicate propositions)*

Developmental status:

"At the time I wasn't aware of any of that, /after all I was still too young for that."

Biographical background:

"I really had problems with my teacher, /she was my Physics teacher / and today, out of defiance, I'm studying Physics."

Formative experience:

"My burn-out has led me / to no longer attach so much importance to money today"

Lessons learned:

"After that I told myself, /when I fall in love the next time, /I must take care /that school doesn't suffer."

Generalized insight:

"I was missing him for many months. /Probably it's always like that, /when it's the first kiss."

Turning points:

"all of a sudden the child was; /that turned my life upside down"

Event explains change in personality:

"That journey changed many things for me; /at that moment I understood /what is meant by the meaning of life, /and since then I am a little more self-confident."

Event reveals unknown personality aspects:

"When I came back to Vietnam, /I realized /that in the meantime I had estranged myself from my own Vietnamese culture"

Figure 1. Means (z-standardized) and confidence intervals (95%) for change in life and sense of self-discontinuity by age groups

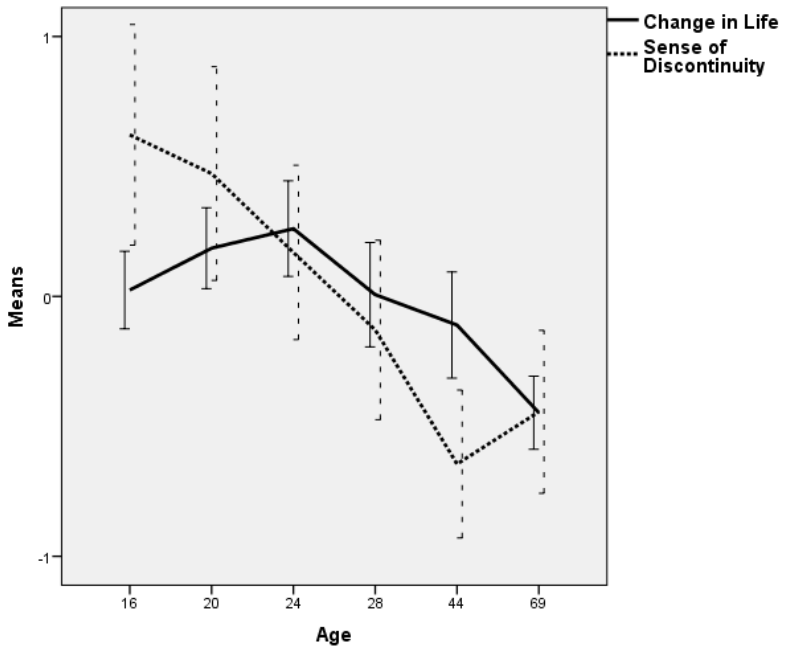

Figure 2. Scatterplot of change in life with sense of self-discontinuity.

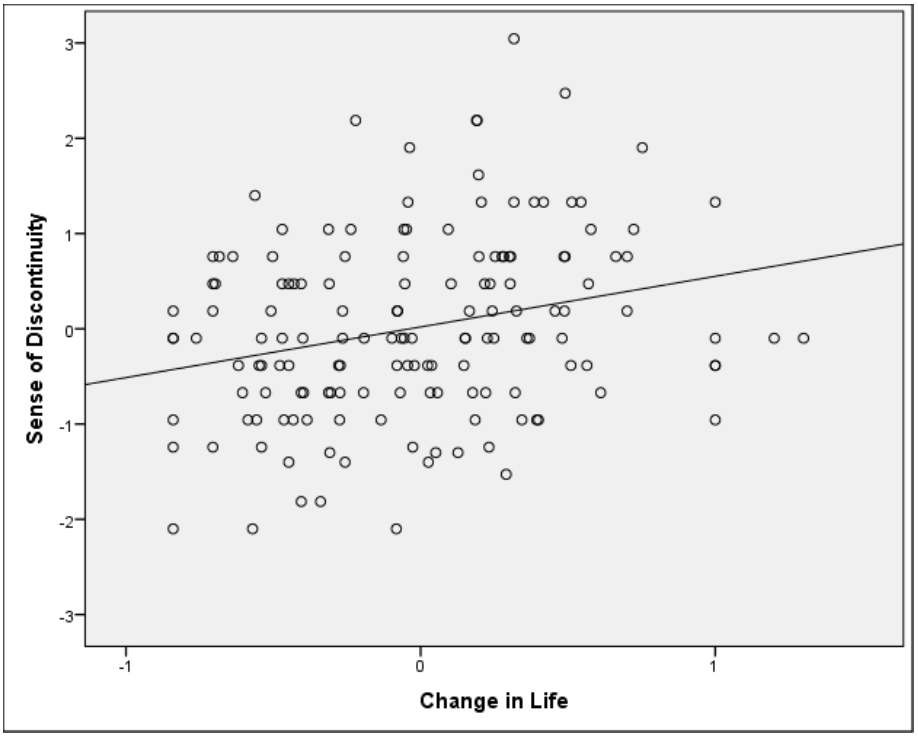

Figure 3. Scatterplot of proportion of autobiographical arguments in life narratives with sense of self-discontinuity by quartiles of change in life.