

Adult life stage and crisis as predictors of curiosity and authenticity: Testing inferences from Erikson's lifespan theory

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Abstract

During periods of developmental crisis, individuals experience uncomfortable internal incongruence and are motivated to reduce this through forms of exploration of self, other and world. Based on this, we inferred that being in a crisis would relate positively to curiosity and negatively to a felt sense of authenticity. A quasi-experimental design using self-report data from a nationally representative UK sample ($N = 963$) of adults in early life (20–39 years), midlife (40–59 years) and later-life (60+) showed a pattern of findings supportive of the hypotheses. Three forms of curiosity (intrapersonal, perceptual and epistemic D-type) were significantly higher, while authenticity was lower, among those currently in crisis than those of the same age group not in crisis. Crisis was also related to curiosity about particular book genres; early adult crisis to self-help and spirituality, midlife to self-help and biography, and later life to food and eating.

Keywords

adult development, authenticity, crisis, curiosity, Erikson, life stage

In the book *Curious* by Leslie (2014), several cases are depicted of individuals who experience a major personal crisis, which stimulates their curiosity about themselves and the world as they seek solutions to their crisis and explore new ways of living. These anecdotal depictions of curiosity-inducing crisis reflect an idea proposed by Erikson; that developmental crisis creates uncertainty and questions, which in turn stimulates heightened curiosity, and this drives learning and development forward (Erikson, 1980; Stevens, 2008). The current study aims to explore whether curiosity does indeed increase during crisis, and whether sensed authenticity declines during crisis as the person becomes curious about themselves and asks “who am I really?”

Erikson's theory depicts psychosocial development as a lifelong progression towards higher levels of integration and wholeness, via stable periods punctuated with unstable periods (Erikson, 1950; Erikson, 1968; Torges, Stewart, & Duncan, 2009). An unstable period of development can become a crisis when the person feels temporarily unable to cope, and seeks changes to their relationships, career or lifestyle as they seek new ways of coping (Levinson, 1996). Crises typically bring an intensive questioning of one's current lifestyle, beliefs and understandings (Robinson, Wright, & Smith, 2013). Work on crisis narratives based on Erikson's framework, has found that developmental crises tend to last over a year and involve a clear set of phases through which individuals pass from one life structure, through a period of volatility and exploration, to a new and resolved life structure (Robinson et al., 2013; Robinson & Stell, 2015).

Central to Erikson's conception of crisis is that the self (“ego” in Erikson's terminology) becomes unstable and fragmented (Erikson, 1968). During crisis, a person may feel that they lack a fixed centre of their experience, and may feel incongruity within their understandings of self (Kidwell, Dunham, Bacho, Pastorino & Portes, 1995). This can bring a sense of inauthenticity during adult crisis, a finding that has been supported using qualitative work on

adult crisis narratives (Robinson & Smith, 2010). From this work, it was found that adults in crisis often feel inauthentic because prior to the crisis their outer self has been constructed excessively in line with external demands or social expectations rather than personal desires and preferences, and during crisis they try to resolve this and re-assert more autonomy.

The questioning that occurs during periods of crisis may be conceptualized in terms of curiosity. Piaget conceived of curiosity as an affectively charged response to cognitive disequilibrium, which motivated seeking new information to resolve incongruities within schemata (Lowenstein, 1994). Contemporary research suggests that curiosity is expressed in two ways: (1) as a desire to reduce unpleasant feelings of being deprived of new knowledge needed to solve problems, akin to Piaget's view (termed D-type), and also (2) as a positively motivated desire for new information anticipated to increase pleasurable feelings of situational interest (termed I-type) (Litman, 2005, 2008). All forms of curiosity lead to exploratory and information-seeking behaviours, for example the reading of books relevant to the topic towards which curiosity is directed (Vidler & Rawan, 1975).

Integrating these two broad types of curiosity, Litman (2008) developed a model of epistemic curiosity (the desire to gather new knowledge) that has factors of *interest induction* curiosity (I-type) and *deprivation elimination* curiosity (D-type). Other expressions of trait curiosity have also been identified. *Perceptual* curiosity

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refers to dispositional tendencies to seek out completely new visual, auditory, or tactile experiences (Collins, Litman & Spielberger, 2004), *interpersonal* curiosity involves inquisitiveness about others (Litman & Pezzo, 2007), and *intrapersonal* curiosity involves seeking new information about the self, via introspecting about one's own past, emotions, and identity.

Hypotheses

We tested hypotheses about the relationship of curiosity and authenticity to life stage and crisis, based on Erikson's original theoretical work as well as recent developments on his theories (e.g. Robinson, 2015). Firstly, we predicted that curiosity would be higher for individuals during times of crisis, relative to adults of the same age who were not in crisis. We also predicted lower authenticity would be reported by those in crisis than those not in crisis, and that authenticity would be negatively related to intrapersonal curiosity. Additionally, given that development was postulated by Erikson to proceed over the lifespan towards integration and congruity, we also hypothesized that older adults would overall report feeling more authentic but less curious than younger adults. Finally, we also explored how preference for certain genres of books might be related to crisis, as an expression of information-seeking behaviour that illuminates the "what" of curiosity at different life stages.

Method

Participants

Participants were recruited from the UK via a research recruitment company. The final sample comprised 963 individuals aged 20 and over (425 male, 498 female). The sample was evenly stratified by gender, age and UK region. The ethnic composition of the sample was 87.5% White British, 5.7% White non-British, 3.0% Asian/Asian British, 2% Black, and 1.8% other.¹

Measures

The *Intrapersonal Curiosity (INC) Scale* (Litman, Robinson, & Demetre, 2016) is a 12-item measure of the extent to which a person is curious about the self. Example items include "I try to understand the source of my emotions" (UEM), "I wonder about what life would be like now if I had made different decisions in the past" (ROP), and "I question whether I really know who I am" (EIP). For each item, participants rate themselves on a 4-point scale ranging from "Almost never" to "Almost always". Cronbach alpha for the total scale in the present sample was $\alpha = .92$.

The *Interpersonal Curiosity (IPC) scale* (Litman & Pezzo, 2007) is a 17-item measure of the extent to which a person desires to find out information about other people. Example items include "I try to figure out what other people are feeling just by looking at them", and "I like to know what other people do". Participants rate themselves on a 4-point scale ranging from "Almost Never" to "Almost Always". Litman and Pezzo (2007) report an alpha of $\alpha > .70$ for the scale.

The *I/D Epistemic Curiosity (EC) scales* (Litman, 2008) include five items selected to measure experiences of curiosity aimed at stimulating one's intellectual *interest* (I-type EC, e.g. "I enjoy exploring new ideas"), and five items to assess feeling uncomfortably *deprived* of knowledge needed to reduce intellectual uncertainty (D-type EC, e.g. "I can spend hours on a single problem because I just can't rest without knowing the answer"). Participants rate

themselves on a 4-point scale ranging from "Almost never" to "Almost always". Alphas for both scales are $\alpha = .78$ (Litman, 2008).

The *Perceptual Curiosity (PC) Scale* (Collins, Litman, & Spielberger, 2004) is a 10-item scale that assesses the extent of interest in novel perceptual stimuli. Example items are "I like to discover new places to go" and "When I hear a strange sound, I usually try to find out what caused it". Participants rate themselves on a 4-point scale ranging from "Almost never" to "Almost always". Reported alphas for the 10-item version were: total = .75, and the subscales were PC-Div = .63 and PC-Spec = .64 (Litman & Silvia, 2006).

Book genre curiosity: Participants were asked what kinds of books they were currently interested in reading. In collaboration with a book publisher, the following list of book genres were selected: *Science Fiction, Biography, History, Self-help, Spirituality and Religion, Science and Nature, Current Affairs and Politics, Food and Eating, Art and Architecture, Other*. Participants could select as many of these genres as were appropriate to their current interests.

The *Authenticity Scale* (Wood, Linley, Maltby, Baliousis, & Joseph, 2008) is a 12-item measure of dispositional authenticity. Example items include "I think it is better to be yourself, than to be popular", "I always feel I need to do what others expect me to do" (reversed) and "I feel out of touch with the 'real me'" (reversed). Responses are given on a 7-point Likert scale ranging from "Does not describe me at all" to "Describes me very well". In the current study, negative indicator subscale scores were reverse scored so that all scores could be combined to create a single total. Cronbach alpha for the total scale was $\alpha = .88$.

Crisis self-appraisal definition and question: Participants self-appraised whether they were currently experiencing a major life crisis, by responding to the following definition and question: "A crisis episode is a period in adult life that is noticeably more difficult, stressful and unstable than normal, during which you sometimes struggle to cope. A crisis is also an important turning point in your life due to challenging changes that occur during it. Crisis episodes typically last for a year or two, but may be shorter or longer." Would you say that you are currently experiencing a crisis episode in your life? Yes definitely/Maybe/No.

Adult life stage. Adult life stages were defined by chronological age, as per Robinson and Wright (2013), and in line with other research that defines life stage this way for the purposes of statistical analysis (e.g. Lachman, 2004). Early adulthood was defined as the age range 20–39, midlife was 40–59 and later life was 60+.

Procedure

Participants were offered a small reward for completion of the questionnaires (approx. £2). They were sent a link to the online survey and completed the questionnaire confidentially, without personal details being disclosed to the researchers. Prior to the questionnaires participants were shown an information form about the study and asked for their consent. At the end of the questionnaire, they were shown a debrief form that contained further information and suggestions for further reading on the topic.

Results

Frequencies of response to the crisis self-appraisal question for each life stage are presented in Table 1. It total, 22.1% of early adults appraise themselves as being in a period of crisis, compared with

Table 1. Frequency of yes/maybe/no responses to the crisis question by age group.

	Early adulthood (20–39)	Midlife (40–59)	Later life (60+)
Yes (%)	68 (22.1)	90 (23.8)	39 (14.0)
Maybe (%)	110 (35.8)	137 (36.2)	151 (39.9)
No (%)	129 (42.0)	151 (39.9)	154 (55.4)
Total N	307	378	278

23.8% of midlifers and 14.0% of those in later life. Between 35% and 40% of respondents in each age group responded maybe, showing they are unsure about whether they are in a crisis or not. This leaves a minority of respondents in each age group, that is, under 50%, who are sure that they are not in a crisis.

The study employed a quasi-experimental design in which two independent groups—(a) crisis present and (b) crisis absent—were compared on their level of curiosity and authenticity, both by life stage and across the total sample. To facilitate the analysis of comparator groups, participants who were unsure about the presence of crisis (those who responded “maybe” to the crisis self-appraisal question) were excluded from analysis. This permitted a direct comparison between those who were sure of being in crisis at the time of the study, and those who were sure they were not. This in turn permitted a more direct test of the hypotheses. To correct for the possibility of Type 1 error that comes with five hypotheses being tested within the analysis, the required p value was corrected to $p < .01$, using a standard Bonferroni correction.

Crisis, age and curiosity

It was predicted that curiosity would be elevated in the crisis group, relative to the non-crisis group, in all three life stages. Figure 1 shows mean curiosity level for the crisis/no crisis group, with the three life stages shown on the x axis.

To test for significance and effect size, a Two-Way MANOVA was conducted, with crisis and adult life stage entered as fixed factors. Assumptions for conducting a MANOVA were met, including homogeneity of variance-covariance matrices, absence of multicollinearity, and linear relationships between DVs. Outliers were removed prior to analysis.² Crisis was entered as an IV with two levels: presence/absence. Adult life stage was entered as an IV with three levels; early adulthood (ages 20–39), midlife (40–59) and later life (60+). Total scores for the five curiosity scales—IPC, INC, PC and I- and D-type EC—were entered as DVs. Partial η^2 effect sizes are presented.

A significant main effect of crisis was found for the overall multivariate model (Wilks' Lambda = .86, $F(5, 616) = 6.05$, $p < .001$, $\eta^2 = .105$). For the individual DVs, crisis was shown to exert an effect on INC, $F(1, 620) = 72.9$, $p < .001$, $\eta^2 = .11$, IPC, $F(1, 620) = 8.3$, $p < .005$, $\eta^2 = .01$, PC, $F(1, 620) = 21.5$, $p < .001$, $\eta^2 = .03$, and D-type EC, $F(1, 620) = 13.3$, $p < .001$, $\eta^2 = .02$. I-type EC was not significantly associated with crisis, $F(1, 620) = 3.7$, $p = 0.05$, $\eta^2 = .006$. In summary, the findings supported our predictions that crisis would relate to elevated curiosity, but I-type EC did not conform to this pattern.

We predicted that curiosity would be negatively associated with life stage, such that there would be a higher level in early adulthood than in midlife, which in turn would be higher than later-life. The main effect of life stage in the MANOVA acted as a test of this

prediction. A significant main effect of life stage was found for the overall multivariate model (Wilks' Lambda = .91, $F(10, 1232) = 19.26$, $p < .001$, $\eta^2 = .05$). There was an effect of life stage on INC, $F(1, 620) = 15.3$, $p < .001$, $\eta^2 = .05$, IPC, $F(2, 620) = 6.8$, $p < .001$, $\eta^2 = .02$, I-type EC, $F(2, 620) = 15.1$, $p < .001$, $\eta^2 = .05$, and D-type EC, $F(2, 620) = 8.1$, $p < .001$, $\eta^2 = .03$, but not for PC, which remained stable across all three age ranges. Figure 1 shows this age effect visually; with the exception of PC, all means decline with age in both crisis and non-crisis conditions.

To determine the source of the ANOVA effects, t tests were performed on paired life groups, (a) early adulthood and midlife, (b) midlife and later life, and (c) early adulthood and later life. The differences between early adult and midlife groups were significant at $p < .01$ for all curiosity scales except PC. The same was found for the differences between early adult and later life groups; all significant at $p < .01$ except for PC. Differences between midlife and later life were found for INC and EC D-Type, but not for PC, EC I-Type or IPC.

In summary, our prediction pertaining to the negative relation of life stage to curiosity was partially supported. When comparing early adults with the midlife and later-life adults, all curiosity types showing as significantly higher in the younger age group except for PC. When the midlife and later-life groups were compared, only INC and D-Type EC were relatively higher in the midlife group.

There was no interaction effect between crisis and life stage at the level of multivariate effect, or for any of the curiosity types individually. However, visual analysis of Figure 1 shows one discrepancy in the association between crisis and elevated curiosity; for older adults, there is no mean difference in I-type EC between crisis and non-crisis groups, and very little for D-type compared with other age groups.

We ran the above MANOVA again as a MANCOVA, while controlling for gender, to ascertain if any relationships were in part a function of crisis being more prevalent in women (24%) than men (15%). The significant findings of crisis remained significant at the same level of $p < .001$ for the multivariate test (Wilks' Lambda = .87, $F(5, 616) = 18.6$, $p < .001$, $\eta^2 = .13$). At the level of individual DVs, all remained significant at level of $p < .001$ with the exception of the relationship of interpersonal curiosity to crisis, which became non-significant, $F(1, 620) = 4.5$, $p = 0.03$, $\eta^2 = .01$.

Crisis and book preference by life stage

As an indicator of how the focus topic of curiosity relates to crisis, we compared the prevalence of book genre interest across the “crisis present” and “crisis absent” groups, using an exploratory non-directional analysis. For those in early adulthood, it was found that interest in two genres of books was associated with being in crisis: Self-help books (39% in crisis, compared with 19% of those not in crisis; $\chi^2(1) = 8.6$, $p < .005$), and spirituality/religion books (67% in crisis, compared with just 32% of those not in crisis, $\chi^2(1) = 20.5$, $p < .001$). For those in midlife, Self-help reading was also associated with crisis (27% in crisis interested, compared with 10% of those not in crisis, $\chi^2(1) = 10.5$, $p < .001$), and also reading biography (62% in crisis, compared with 48% of those not in crisis; $\chi^2(1) = 4.3$, $p < .01$). For older adults, reading books on food and eating was associated with being in crisis (49% in crisis interested, 25% not in crisis interested; $\chi^2(1) = 8.1$, $p < .005$). No other associations were found in the later life group.

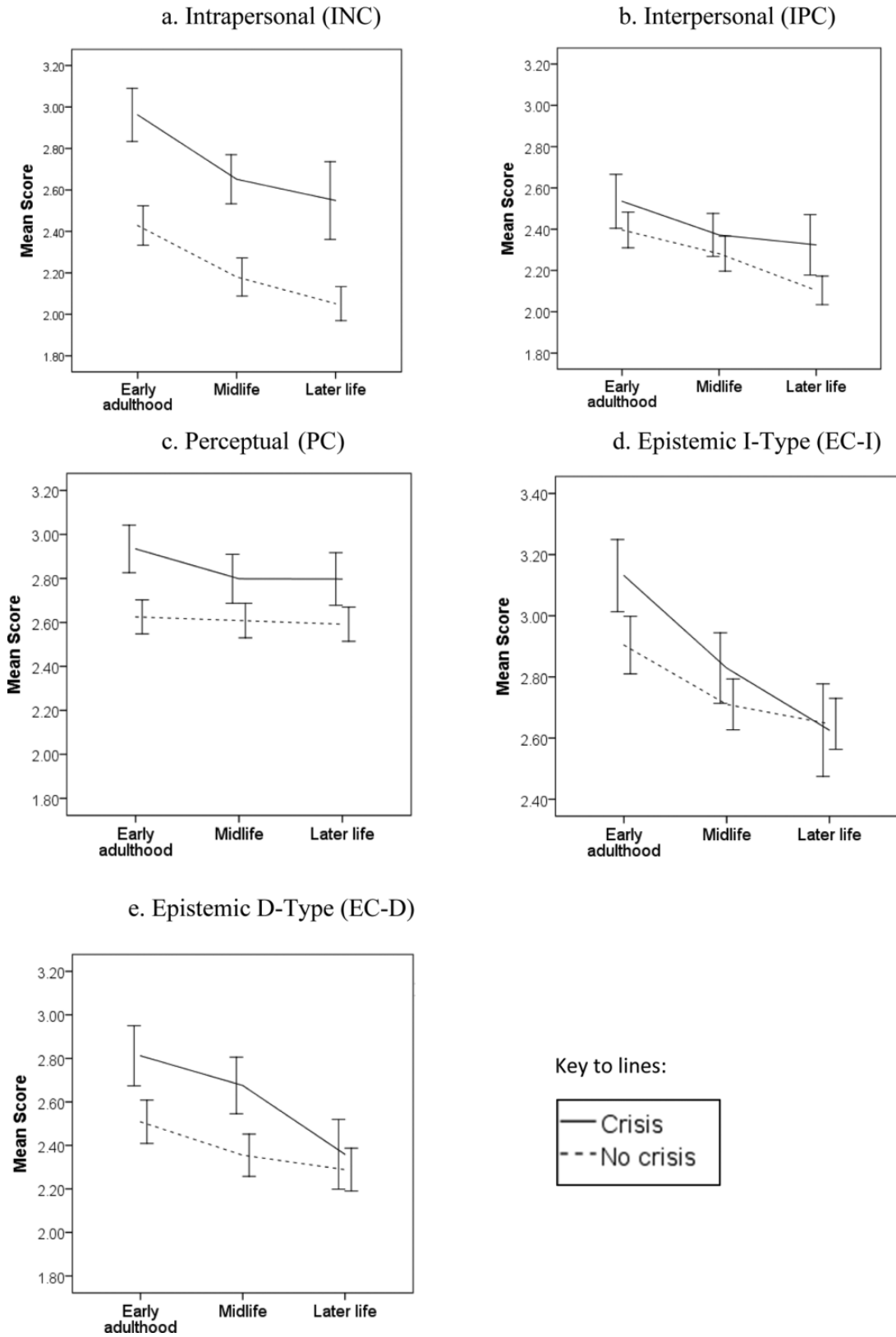


Figure 1. Five kinds of curiosity (intrapersonal, interpersonal, perceptual epistemic I-type and epistemic D-type), in crisis/no crisis groups (lines) and life stages (Error bars: CIs at 95%).

a. Intrapersonal (INC), b. Interpersonal (IPC), c. Perceptual (PC), d. Epistemic I-Type (EC-I), e. Epistemic D-Type (EC-D).

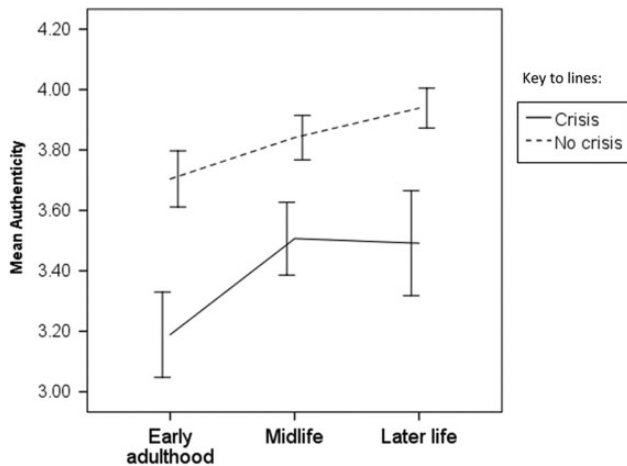


Figure 2. Authenticity mean across crisis/no crisis groups and adult life stages (Error bars: CIs at 95%).

Authenticity by crisis and life stage

In order to test the hypotheses that authenticity would be (a) lower in the crisis group than the non-crisis group, and (b) positively associated with life stage, a Two-Way ANOVA was conducted with the fixed factors of crisis (present/absent) and life stage (early adulthood/ midlife/ later life). Authenticity was entered as the DV. Main effects of crisis, $F(1, 621) = 64.8, p < .001, \eta^2 = .10$, and life stage, $F(2, 620) = 9.8, p < .001, \eta^2 = .03$, were found, with no interaction effect. Figure 2 illustrates the nature of these effects; authenticity was, as predicted, lower in the crisis group at all three life stages, and there was an increasing mean level of authenticity across age groups. Post-hoc Tukey tests showed that the difference between all three age groups was significant and contributing to the main effect. In sum, predictions pertaining to authenticity, crisis and age were supported. The ANOVA was re-run as an ANCOVA with gender as a co-variate. The findings did not reduce in significance and effect size when controlling for gender. No main effect of gender was found on authenticity.

Finally, it was predicted that intrapersonal curiosity would correlate negatively with authenticity. This prediction was supported ($r = -.32, p < .001$).

Discussion

As predicted, individuals in crisis were more curious than those of the same life stage who were not in crisis, and also felt less authentic than those not in crisis. This is consistent with Erikson's conception of crisis as a time of heightened questioning and self-related incongruity (Erikson, 1968, 1980). Furthermore, the association between feelings of inauthenticity and intrapersonal curiosity suggests that feeling curious about oneself may well be driven by, and temporarily exacerbate, the feeling of being out of touch with one's true self.

We also found that it is not just curiosity about the self that relates to crisis, but also curiosity in the external world: Perceptual curiosity was higher in the crisis group than the non-crisis group across all three life stages, which shows an outward-focused curiosity is elevated during crisis.

D-type epistemic curiosity was related to crisis but I-type was not. This corroborates D-type curiosity as a response to incongruity,

uncertainty and gaps in perceived knowledge (Litman, 2005; Litman, 2010), and the incongruity and uncertainty that Erikson saw as central to crisis.

There were some interactions between age, crisis and curiosity. D-type EC was significantly higher in crisis for young adults and those in midlife, but not for older adults, as portrayed in Figure 1. A similar pattern was observed for I-type EC, but the differences were not significant. Overall, it appears that crisis in older adults is not associated with enhanced epistemic curiosity. This fits with qualitative research on later-life crisis, which found it to centre on coping with loss, challenges to ego integrity, engagement with productive roles and relationships, and feelings of personal mortality, but not on deliberations over knowledge and worldview (Robinson & Stell, 2015).

The findings on book interest presented a further lens on curiosity and its relation to crisis. For young adults and those in midlife, self-help books are of disproportionate interest to those in crisis. Added to this, young adults in crisis turn towards books on spirituality and religion, which reflects research on the relationship of spiritual searching to the period of young adulthood (Barry, Nelson, Davarya & Urry, 2010). Early adulthood brings a search for meaning and purpose (Reece & Robinson, 2015), and the literature on spirituality and religion, being rich in deliberations over such matters, seems to be a popular place to turn. For those in midlife, reading biography is associated with crisis. This suggests that the personal stories recounted in biography may act as stories of inspiration to help those struggling in midlife deal with their own problems. With regards to the association of reading about food and eating with later-life crisis—it may be that older adults in the difficult times of crisis seek to explore the simple comforts of life and find solace in the enjoyments of food and cooking.

The design of this study presents limitations that make further research with other research designs and samples an important next step. The study is a between-subjects design based on two groups (crisis / no crisis) that could not be randomly allocated. This leaves the possibility of a confound variable that differentiates the curiosity level of the two groups, for example some pre-existing personality variable that makes both crisis and curiosity more likely. An ideal design for the future that would circumvent this possibility is a within-persons longitudinal design that measures curiosity at an initial baseline level, then during crisis and finally in the post-crisis state.

Our sample was a satisfactory size but for future studies could be improved. After removing the “maybe” responses to crisis and outliers for the MANOVA analysis, and after divided into three life stages, the “in crisis” group contained 67 (early adult), 90 (midlife) and 39 (older adult). A larger sample would be preferable in future studies to keep all cell sizes in this analysis over 100. Other limitations relate to the cultural specificity of the sample. Our study employed a socio-economically diverse British sample, however it was mostly White, and the generalization of the effects to other cultures and ethnic minorities would be best supported by replications or extensions in other countries and demographic groups.

Further developments for research could also involve using implicit measures of curiosity, for example in measuring the amount of time a person puts into exploring a novel stimulus (Lowenstein, 1994), rather than (or as well as) self-report psychometric measures.

In summary, while crisis episodes bring distress and feelings of inauthenticity, they bring an openness to new ideas and stimuli that can bring insight and creative solutions within and without.

Enhanced curiosity may be the “silver lining” of crisis, as Erikson implied in his lifespan theory. Armed with this knowledge, people may find the crises of adult life easier to bear.

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Notes

1. According to 2011 Census data, the UK is 87% White, 5.0% Asian, 3% Black, so overall the sample is slightly over-represented by White participants.
2. One outlier was found in the later-life group for INC, three in the later-life group for IPC, and one for PC in the early adult group. No outliers found for the EC scales. These outliers were removed prior to conducting the MANOVA.

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