Assessment

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Future Events, Early Experience, and Mental Health

Clinical Assessment Using the Anticipated Life History Measure

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*This study's goals were (a) to provide convergent validity for the Anticipated Life History measure (ALH), an instrument prompting participants to describe their future life course from their 21st birthday until their death, and (b) to assess the impact of early experience and early memories on the ALH. The ALH narratives were coded for the presence and/or absence of future life events and for five clinical features (*Narrative Integrity, Depression, Fantasy Distortion, Impulsivity, *and* Malevolence*) using a detailed scoring manual. A sample of 285 young adults completed the ALH and a battery of cognitive, mood, and life events measures. The results confirm the utility of this new instrument: Participants whose ALH scored high on the clinical measures also had higher levels of current depression, lower quality-of-life satisfaction, reported more negative early life experiences, and recounted negative early memories.*

Keywords: narrative assessment; social cognition; projective; early memories

In the past 20 years, researchers have demonstrated that projective tests are useful tools for conducting research and assessing psychopathology. Their efforts to apply statistical rigor to projectives have resulted in established norms for specific variables assessed from the Rorschach, such as Holzman's Thought Disorder Index (Holtzman & Swartz, 1983), in coding measures for the Thematic Apperception Test (TAT) (McAdams, Hoffman, Mans-

field, & Day, 1996; Westen, Lohr, Silk, Gold, & Kerber, 1990; Woike, 1994), coding measures for early and auto-biographical memories (McAdams et al., 1996; Nigg, Lohr, Westen, Gold, & Silk, 1992), as well as stories told to the Picture Arrangement subtest of the Wechsler Adult Intelligence Scale–Revised (WAIS-R) (Segal, Westen, Lohr, & Silk, 1993; Segal, Westen, Lohr, Silk, & Cohen, 1992; Westen, Feit, & Zittel, 1998). Recently, some researchers have begun to explore the differences between projective tests and self-report instruments, arguing that they measure different aspects of personality functioning. One ingenious study showed that early memories, when coded for negative outcome and depressed mood, identified participants with "defensive mental health"—those who scored low on a self-report depression measure yet scored high on physiological measures of stress exhibited by the depressed, "nondefensive" participants (Shedler, Mayman, & Manis, 1993).

These studies have led researchers to reconsider the theoretical premise of projective instruments: What are they actually measuring? Drew Westen (Westen et al., 1998) made an analogy to research in cognition by referring to lexical experiments that showed that participants "primed" with specific verbal categories recognized words from those categories faster; the assumption is that priming activates implicit associational networks in memory (e.g., Tulving, Schacter, & Stark, 1982). Drawing a broad comparison, Westen et al. (1998) wrote that "much research in contemporary cognitive science is predicated on one of the same hypotheses that led to projective methods: That mental contents are represented along associative networks, and that these networks can only be assessed using indirect measures" (p. 225). The authors concluded that projective tests serve two functions. First, because self-reports are vulnerable to demand characteristics and to participants' tendency to present themselves in a positive light, projectives may be more effective at circumventing participant self-censoring or mispresentations. Second, by prompting participants essentially to associate to stimuli or to "use their imagination," projectives evoke wishes, fears, feeling, and thoughts that may be elicited only by having the participant "dream up" an event or interpersonal exchange.

If Westen and others are correct that self-report instruments assess a respondent's conscious self-attributions, whereas projective tests tap into implicit personality processes unavailable to consciousness, why have these two components of personality evolved? Segal (in press) has argued that the personality processes measured by projective tests are dominant in early childhood before complex self-schemas have developed. Researchers who study children's play note the ubiquity and centrality of symbolic

and pretend play from the first year through middle childhood (Corrigan, 1982; Fenson, 1986). Children animate (or "project" onto) stuffed animals and action figures with feelings, thoughts, wishes, and fears—and by doing so, reveal their inner experience that they have difficulty articulating, primarily because they have not yet developed the cognitive capacity to express such complex phenomena in words. Without the self-schemas they will rely on later, and without the anxiety elicited by direct self-disclosure, children freely project a wide range of feelings, "acceptable" and otherwise, onto their toys or imaginary friends.

Once children develop greater cognitive complexity by assembling self-schemas and working models of relating strongly influenced by their family's cultural, social, and moral values, the earlier "projective" mode of consciousness is gradually superseded by self-attribution, objective judgment, and the capacity for abstract thought. But because this new dominant mode of consciousness is powerfully influenced by social and cultural expectations, it necessarily involves censoring some of the wishes, fears, feelings, and thoughts once so spontaneously projected when the child was young. This accounts for the kinds of biases and distortions found in self-judgment by social psychologists (for a recent example, see Kruger & Dunning, 1999).

The projective mode of thinking is not eradicated by cognitive development. When people "suspend" their disbelief while watching a movie or reading a novel, they are, in essence, exhibiting an adaptive return to the projective mode (Harris & Beggan, 1994; Singer, 1998). Similarly, intense emotional states, such as falling in love or feeling intense rage, often compel a return to the projective mode through unavoidable daydreams or fantasies. Finally, severe personality disturbance—such as borderline personality disorder—is often marked by an individual's inability to refrain from falling into the projective mode and ascribing implausible and idiosyncratic interpretations to interpersonal events (e.g., Gunderson, 1984). This may explain why projectives have been found to be sensitive to early trauma (Nigg et al., 1992; Ornduff, Centeno, & Kelsey, 1999) because they draw on the mode of consciousness that predominates in childhood. Indeed, psychotherapy may be reconceived as helping patients to regain an adaptive *balance* between these two modes of consciousness, avoiding the flood of projecting on one hand and overintellectualizing on the other. (The idea that there are separate but intertwined cognitive-affective systems within consciousness has been proposed by other researchers who have found similar differences between self-attributions and spontaneously generated narratives, most notably McClelland, Koestner, and Weinberger, 1989, who found that achievement motivation represented

in vignettes was different from self-reported achievement. See also Epstein's [1994] theory on integrating the psychodynamic and cognitive unconscious.)

The Anticipated Life History

The Anticipated Life History (ALH) is an instrument prompting participants to describe realistically the "future course of their life" in a freely written narrative and a scoring manual to code the responses for future life events and psychological qualities. The ALH is intended to be a hybrid instrument, combining facets of projective tests and self-report measures. It elicits the projective, imaginative qualities of the TAT yet also requires the participant to integrate his or her knowledge of societal norms, professional expectations, as well as self-knowledge to modulate elicited anxiety and affects. It is the central measure of the ALH project, a longitudinal study of the ways several cohorts of young adults imagine their future lives at sequential developmental phases.

This study has two goals. First, we sought to demonstrate the usefulness of the ALH by demonstrating its sensitivity to depressed mood and quality-of-life satisfaction; with validity established, the ALH would be an efficient measure for psychotherapy clinics, particularly those treating older adolescents and young adults, because the ALH directly provides an account of the patient's future plans as well as clinical material that can be easily scored and interpreted. Second, by establishing incremental validity of the ALH, we hoped to establish its utility to researchers seeking to explore implicit personality and cognitive factors that self-report measures cannot provide.

The ALH Scoring System

The participants wrote an ALH narrative describing the course of their future lives from their 21st birthday until their death and provided information about their personal history, family demographics, current level of psychological functioning, and quality-of-life satisfaction through structured interviews and self-report instruments. ALH coding was divided into *objective* and *qualitative* categories. For objective analyses, coders indicated presence and absence of key life events in the ALH narrative, such as career choice or selection of a life partner. For qualitative analyses, coders scored the ALH narratives in two distinct ways. First, the ALH narratives were considered descriptions of participants' future possible selves and were coded for social-cognitive qualities; these findings are discussed elsewhere (see Segal, DeMeis, Wood, & Smith, 2001). Second, the ALH narratives were considered as projective material and were scored for clinical features: *Narrative Integrity*, *Depression*, *Fantasy Distortion*, *Impulsivity*, and *Malevolence*.

Each of these qualitative dimensions is assessed using a detailed scoring manual (Segal, DeMeis, & Wood, 1997) that includes training procedures for establishing scorer reliability and provides coders with detailed rules for scoring on a 4-point scale, from little or no presence of the quality to pervasive presence of the quality.[1] The measures were designed to gauge the integrity and coherence of the participants' thinking (Narrative Integrity); the presence of negative affect and level of self-esteem (Depression); the degree to which they impose fantasies on their future even when asked to write a realistic one (Fantasy Distortion); deficits in self-regulation, which leads to risky behaviors (Impulsivity); and the quality of their inter-personal expectations (Malevolence). These particular dimensions were conceived and developed for two reasons. First, each represents a principal component of self-experience—coherence of cognitive sequence, mood, fantasy, behavior, and interpersonal expectations. Second, all are qualities often found in narrative discourse and thus are easy to measure. Synopses of the scales' coding schemes appear in Table 1. *An example of an ALH with scoring justifications can be found in the appendix.* Each scale is briefly described next.

Narrative Integrity

Organizing events into "story schemas" is an essential task of development (Bartlett, 1932; Johnson & Mandler, 1980; Rumelhart, 1975); difficulties maintaining narrative coherence and causality can indicate a thought disorder, early attachment disruption (Main, Kaplan, & Cassidy, 1985), or borderline personality disorder (Segal et al., 1992). A recent study has established a link between life story coherence and psychological well-being (Baerger & McAdams, 1999). This scale measures the degree to which the narrative holds together as narrative. Low scores describe narratives characterized by disorganization and illogical sequences of events, whereas high scores describe well-integrated and organized narratives.

Depression

Clinical assessment of patients' narrative has long included attention to depressive themes, events, and affective tone (e.g., Crewe, 1997; Hodges, London, & Colwell, 1990). It has also been empirically validated with memories (Moffit, Singer, Nelligan, & Carlson, 1994; Shedler et al., 1993) and TAT stories (O'Connor, 1998). This scale measures the degree to which depression appears to color the ALH. Typical features include general pessimism, re-

TABLE 1
Brief Synopses of ALH Measures

	Narrative Integrity	*Depression*	*Fantasy Distortion*	*Impulsivity*	*Malevolence*
Principle	The degree to which the ALH holds together as narrative. High scores indicate coherence and clear organization.	The degree to which depression colors the ALH. Sadness, low self-esteem, hopelessness, and early death are scored.	The degree to which the ALH resembles fiction, dreams, or movies, rather than a plausible account of one's future.	The degree to which impulsive acts are found in the ALH. These include substance abuse, rage attacks, reckless behavior.	The degree to which the narrator intends, enacts, or expects malevolent acts, physical or psychological.
Level 1	The ALH is disorganized, incoherent, or bizarre.	The ALH is free of any depressive features.	The ALH is free of fantasy distortions.	The ALH is free of impulsive actions or events.	The ALH is free of malevolent actions or expectations.
Level 2	The ALH has incomprehensible sections or is missing sections crucial to an understanding of it as a whole.	The ALH has one or two instances of depressed mood, feelings of failure, disappointment, or loss.	Although much of the ALH remains plausible, it contains several instances of fictional specificity or fantasy distortion.	The ALH contains one or two impulsive events in an otherwise unimpulsive narrative.	The ALH contains aggressive wishes, fantasies, implicit threats, or malevolent intentions, but none are put into action.
Level 3	The ALH is generally well organized but is either very sparse or contains a section that is less clear than the others.	The ALH has prominent examples of depressed mood, misfortunes, physical or mental health crises.	The ALH has prominent examples of fantasy distortion, such as grandiose outcomes (becoming senator or president).	The ALH has prominent examples of impulsivity, such as drug addiction, frequent job loss, and persistent fighting.	Narrator commits, is witness to, or is the target of, malevolent actions.
Level 4	The ALH is characterized by an integrity of form and content.	Depressive features are pervasive and characterize the ALH.	The ALH resembles a short story, movie, or fantasy nearly from start to finish.	Impulsive actions are pervasive and characterize the ALH.	Malevolence is a recurring and dominant theme throughout the ALH.

NOTE: ALH = Anticipated Life History.

current loss of important relationships, expectation of failure and humiliation, persistent rejection by friends, or generalized "existential angst."

Fantasy Distortion

According to recent research, children develop the capacity to distinguish descriptive narrative from fantasy by the age of 5 (Ucelli, Hemphill, Pan, & Snow, 1999). The failure to distinguish these two tasks or to maintain the distinction between them can be a symptom of hypomania or borderline personality disorder (Gunderson, 1984) and is arguably a result of early trauma (Lynn, Pintar, & Rhue, 1997). Scoring the Rorschach for "confabulized" responses has been shown sensitive to psychopathology in general and to borderline inpatients with histories of chronic sexual abuse (Kleiger & Peebles Kleiger, 1993; Saunders, 1991). Because ALH participants are asked explicitly to compose a *realistic* account of their future life, this scale measures the degree to which the participant fails to comply with the instructions and includes details resembling fiction, daydreams, or movies rather than a plausible ALH. Fictional qualities include naming people the participants have yet to meet, byzantine plot twists

(such as accidental death or future marital infidelity), or grandiose outcomes (such as becoming president, U.S. senator, or a world-famous rock musician).

Impulsivity

Impulsive behavior has long been associated with attentional problems, self-punishment (Herpertz, Steinmeyer, Marx, & Oidtmann, 1995) and antisocial behavior (Goma-i-Freizanet, 1995; Luengo, Carrillo de la Pena, Otero, & Romero, 1994). Researchers have used the Rorschach to study impulsivity (Pantle, Ebner, & Hynan, 1994), but a review of the literature did not result in studies using impulsivity to code narrative material. This scale measures the degree to which impulsivity is represented in the ALH. Typical features would include substance use, violent or reckless behavior, promiscuity, difficulty keeping jobs or finishing school due to "lack of discipline," persistent discord between characters, or death due to risk taking. High scores also indicate if the narrative itself reflects impulsivity, that is, if the writer impulsively changes story lines, describes himself or herself as impulsive, or speaks of how hard it is to write the ALH because it requires thinking or planning ahead.

Malevolence

Malevolent wishes and acts have long been associated with antisocial behavior such as spousal abuse (Hyden, 1995), whereas malevolent expectations have been routinely found in projective material elicited from patients suffering from severe personality disorders or traumatic histories (e.g., Kalliopuska, 1992; Liem, O'Toole, & James, 1996; Ornduff et al., 1999; Westen et al., 1990). This scale measures the degree to which the narrator enacts, intends, or expects to be subjected to an act of malevolence. Malevolence is defined as aggressive, malicious, spiteful, or hateful verbal or physical behavior.

HYPOTHESES

Most of the statistical analyses were performed to test the principal hypothesis that the ALH is a hybrid measure combining facets of self-report instruments and projective tests.

Correlations With Self-Report Instruments

To confirm the self-report facets of the ALH, it was predicted that ALH Depression would correlate with self-report depression (CES-D) and quality-of-life satisfaction (QOLI) summary scores. (This prediction was supported by a relevant study where researchers found that depressed participants were more pessimistic when considering future events than nondepressed controls, although they did not use narrative data [Pyszczynski, Holt, & Greenburg, 1987].) It was also predicted that ALH Fantasy Distortion and Malevolence would correlate with Center for Epidemiological Studies Depression Scale (CES-D) and Quality of Life Inventory (QOLI) summary scores because distortions of interpersonal events are often associated with depression and personality disturbance. We did not expect ALH Impulsivity to correlate with the self-report measures because impulsive behavior often serves to distract individuals from feeling depressed.

Correlations With Early Memories and Early Life Events

Projectives have been shown to be sensitive to early, constitutive experiences. For example, TAT stories have distinguished people diagnosed with borderline personality disorder from depressed patients and normal controls (Westen et al., 1990), whereas early memories have distinguished adults who were sexually abused in childhood (Nigg et al., 1992). To confirm the ALH's projective quali-

ties, we predicted that participants with negative early memory scores and with a history of early negative life events would score higher on the ALH clinical scales.

Gender Differences

Even though women often score higher on self-report measures, such as the CES-D and the Beck Depression Inventory, we believe this is due to men's greater reluctance to endorse depressive items or to admit to their severity. For this reason, it was expected that women would score higher on the CES-D but produce depressed ALH narratives at the same rate and severity as the men. Similarly, given that men are socialized to distract themselves from painful feelings through impulsive behavior, such as drinking alcohol or fighting, it was expected that men would score higher on ALH Impulsivity than women.

METHOD

Participants

Two hundred and eighty-five participants age 18 to 19 were recruited from three sources. The first sample consisted of 123 1st-year students from a private, 4-year liberal arts college who participated for extra credit in an introductory psychology lecture or in several 1st-year seminars; the second sample was composed of 100 first-year students from a local community college recruited through posted fliers and paid $20 to participate; the third sample comprised 62 second-semester high school seniors recruited randomly from the high school database and paid $20 to participate. (Human subject use approval was given by the University Committee on Human Use at Cornell University to cover all sites.)

Procedure

Participants in the first sample responded to a battery of self-report measures in groups of 20 or less and spent, on average, 60 minutes to complete it. At the end of the group session, each participant scheduled an individual session to take place within the following 10 days to undergo structured interviews and cognitive tests. Fourteen participants who failed to appear for scheduled interviews and chose not to reschedule were excluded from the study. Participants in the second and third samples were scheduled for individual appointments during which they completed both the self-report battery and the interview session. None of these participants withdrew from the study.

Measures

For the self-report battery, participants began with the ALH, which asks them to imagine their entire future life, beginning with their 21st year and ending with their death. Participants are asked to give a *realistic* account of their entire future life as it is *most likely* to occur and to spend approximately 25 minutes for its composition. They also completed a measure developed for this study: a 45-item Life Events Checklist eliciting significant life events and their impact (Segal, 1996b). To assess participants' current mood and satisfaction with their current lives, they completed the CES-D (Radloff, 1977) and the QOLI (Frisch, Cornell, Villaneueva, & Retzalaff, 1992). The CES-D is a 20-item instrument measuring depressive symptoms in the past week in nonclinical populations. The QOLI is a 34-item instrument that measures the participant's satisfaction with, and the importance of, four life domains: self, personal fulfillment, relationships, and environment.

During the interview session, participants were first administered the Family Demographics & Medical History (FDMH) (Segal, 1996a), a structured interview developed for this project that collects data on family demographics, composition of family of origin, ethnicity, religious preference, individual medical history, and socioeconomic status (Hollingshead & Redlich, 1958). Participants were then administered two subtests of the Wechsler Adult Intelligence Scale–Revised (WAIS-R) (Wechsler, 1981): Vocabulary and Picture Arrangement. Vocabulary subtest scores have been found to correlate with full-scale IQ and thus may be used to control statistically ALH scores for intelligence; standard WAIS-R Picture Arrangement subtest scores measure the degree to which the participant can place narrative elements in a logical order and were used for discriminant validity because this capacity should be unrelated to mood and interpersonal expectations (Wechsler, 1981). They were also administered a modified version of the Early Memory Test (Mayman, 1968), which prompted them for their earliest memory, earliest memory of mother, and earliest memory of father.

Data Coding and Interrater Reliability

Two advanced undergraduates, blind to the study hypotheses and participant identity, coded the ALH narratives for the presence/absence of the life events. Because event coding is a straightforward task, 20% of the ALH narratives were double coded for the presence of each of the following events with reliability calculated by using Pearson's *r*: marriage, 1.0; divorce, 1.0; graduate education, .98; children, 1.0; career, 1.0; job loss, .97; serious accidents (for any character), .98; alcohol/drug abuse (for any character), .94; illness (for any character), .99; death

of spouse, 1.0; death of child, 1.0; death of mother, 1.0; death of father, 1.0; retirement, .96.

ALH narratives were then coded along five dimensions set by the ALH Qualitative Coding Manual, described above. Pairs of coders achieved reliability on one ALH scale and coded the data set independently; the coders then met to resolve protocols where they disagreed. Reliability was computed using Pearson's *r* with Rosenthal correction for multiple judges. Corrected reliabilities for the five scales were as follows: Narrative Integrity, .83; Depression, .84; Fantasy Distortion, .81; Impulsivity, .82; Malevolence, .85.

The early memories were scored using an adaptation of the Adelphi Early Memories Index (AEMI) (Karliner, Westrich, Shedler, & Mayman, 1996). Whereas the AEMI has coders assign a single score for a group of early memories, we had pairs of coders score each memory on a 5-point scale (with 1 = *not applicable*, 3 = *somewhat applicable*, and 5 = *highly applicable*) along the following dimensions with reliability calculated by using Pearson's *r* with Rosenthal correction. (These coders were separate from those who scored the ALH and were unaware of the study hypotheses.) Coders scored the memories for the presence of positive qualities as follows: Affect tone is positive, .82; others are benevolent, .86; participant is confident, .85; and the memory's outcome is positive, .86. Coders scored the memories for the presence of negative qualities as follows: Affect tone is negative, .86; others are malevolent, .84; participant is insecure, .87; the memory's outcome is negative, .84; caregivers are abandoning, .81.

RESULTS—SAMPLE DEMOGRAPHICS

Participants

Participants were 285 young adults drawn from three sources: a private liberal arts college, a rural community college, and a rural high school senior class. Male and female participants did not differ significantly on the WAIS-R subtests, SES, or ethnicity; female participants scored higher on depressive symptomotology as determined by the summary score of the CES-D (see Table 2).

ALH Future Life Events

When comparing specific future life events, Table 3 shows there were some events that men and women expected with the same frequency: job loss, substance abuse, accidents, sickness, retirement, death of parents and children. However, women were more likely to predict getting married or entering a committed relationship, having children, getting a divorce, and being widowed. They were

TABLE 2
Sample Characteristics
and Word Count by Gender

	Women		Men	
N	152		133	
Mean age	18.3	(0.7)	18.5	(0.7)
Socioeconomic status (%)				
Upper middle/upper	54.6		56.6	
Middle	25.7		21.7	
Lower middle/lower	19.7		21.8	
CES-D summary score[a]	36.8	(9.6)	34.4	(9.4)
QOLI summary score	2.63	(1.4)	2.51	(1.3)
NEGLIFE	6.17	(2.85)	5.91	(2.56)
NEGFUTURE	6.41	(0.77)	6.44	(0.69)
ALH Narrative Integrity	3.63	(0.54)	3.65	(0.54)
ALH Depression	1.47	(0.85)	1.50	(0.80)
ALH Fantasy Distortion	2.05	(1.08)	2.19	(1.05)
ALH Impulsivity[b]	1.22	(0.55)	1.52	(0.89)
ALH Malevolence	1.13	(0.46)	1.13	(0.54)

NOTE: CES-D = Center for Epidemiological Studies Depression Scale; QOLI = Quality of Life Inventory; NEGLIFE = negative early life events; NEGFUTURE = negative future events; ALH = Anticipated Life History.
a. $t = 2.13$, $p = .03$, two-tailed.
b. $t = –3.41$, $p = .001$, two-tailed.

TABLE 3
ALH Scores Analyzed
by Gender (in percentages)

ALH Score	Women	Men	t	Probability
Presence of ALH future events				
Marriage/committed relationship	99	91	2.89	.004
Children	94	81	2.97	.003
Divorce	9	2	2.43	.016
Career	99	92	2.46	.015
Job loss	0.7	2	–1.09	ns
College degree	97	91	1.83	.068
Graduate degree	58	45	2.14	.033
Substance abuse	3	7	–1.61	ns
Accident	6	7	–0.51	ns
Sickness (any character)	21	23	–.39	ns
Retirement	59	58	–0.00	ns
Death of children	3	1	0.67	ns
Death of mother	16	9	1.78	.076
Death of father	15	10	1.25	ns
Death of spouse	28	15	2.56	.011

NOTE: All analyses are two-tailed. ALH = Anticipated Life History; ns = not significant.

also more likely to predict finishing college, going to graduate school, and pursuing a career than the male sample. (For a discussion of gender issues and the ALH, see Segal et al., 2001).

Since the sample was skewed toward well-to-do participants, a statistical analysis using the five Hollingshead categories was not possible. To offer a preliminary exploration of SES, we collapsed scores of 1 and 2 into one group (SES1, wealthy and upper middle class, 55%) and scores of 3, 4, and 5 into the second group (SES2, middle, lower, and poor classes, 45%) and compared the means. SES1 participants were more likely to anticipate college (SES1 $M = 2.0$, $SD = .11$ versus SES2 $M = 1.9$, $SD = .30$; $t = 3.00$, $p = .003$, two-tailed) and careers (SES1 $M = 2.0$, $SD = .11$ versus SES2 $M = 1.9$, $SD = .23$; $t = 1.94$, $p = .05$, two-tailed).

To compare negative future expectations with convergent measures, the composite variable *negative future events* (NEGFUTURE) was created by summing divorce, job loss, substance abuse, accident, sickness, and death of children. A second variable, *negative early life events* (NEGLIFE), was created by summing the presence of negative events from the Life Events Checklist: parental strife and divorce; parental job loss, substance use, or criminal activity; deaths of parents, family members, or close friends; participant serious injury or illness; participant trouble with school or police; participant substance abuse; and participant being shot, wounded, or raped. (Principal components analyses were performed on both composite

variables, but no individual variables or factors produced different or stronger results than the composites.) There were no gender differences on these variables (see Table 2).

As Table 4 shows, NEGLIFE correlates with CES-D, QOLI, and NEGFUTURE, demonstrating convergent validity as well as supporting the experimental hypotheses that ALH scores would correlate with measures of early experience.

ALH Clinical Features Scales

The ALH Depression, Impulsivity, Fantasy Distortion, and Malevolence scores were strongly correlated (see Table 4). Narrative Integrity was intended to distinguish participants suffering from an underlying psychotic process or severe personality disorder, so it was not expected to correlate strongly with the other scales because the participants were recruited from nonclinical settings. That it correlated positively with Fantasy Distortion is an artifact of the scale design—those importing fiction into their ALH were likely to write more elaborate, and thus more integrated, narratives. That it correlated negatively with Impulsivity suggests that participants writing narratives with impulsive events also tended to write in an impulsive, and thus less organized, way. For evidence of discriminant validity, scores from the five scales were correlated with WAIS-R Picture Arrangement (PA) and Vocabulary subtest scores. None of the ALH scales correlated with either subtest, eliminating intelligence as a contributing factor for these scores.

TABLE 4
Correlations Among ALH Scores and Convergent Measures

Variable	1	2	3	4	5	6	7	8	9	10
1. ALH Narrative Integrity	—	.01	.12*	−.26****	−.00	.01	−.03	−.03	.01	.02
2. ALH Depression			.31****	.28****	.41****	.14*	.22***	.19***	−.28****	.59****
3. ALH Fantasy Distortion				.13*	.26****	−.05	.11	.02	−.09	.27****
4. ALH Impulsivity					.28****	.18**	.02	−.01	−.16*	.28****
5. ALH Malevolence						.03	.21***	.03	−.13*	.33****
6. NEGLIFE							.10	.18**	−.17*	.16*
7. NEGMOM								.08	.00	.17*
8. CES-Depression									−.47****	.13*
9. Quality of Life Inventory										−.18**
10. NEGFUTURE										—

NOTE: ALH = Anticipated Life History; NEGLIFE = negative early life events; NEGMOM = negative early memory of mother; CES-D = Center for Epidemiological Studies Depression Scale; NEGFUTURE = negative future events.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$. ****$p \leq .0001$.

Gender and SES

As predicted, men scored higher on ALH Impulsivity than the women participants; otherwise, there were no gender differences on the other four scales (see Table 2). There was a similar effect for socioeconomic class, with SES1 participants scoring lower on Impulsivity (SES1 $M = 1.3$, $SD = .62$ versus SES2 $M = 1.5$, $SD = .87$; $t = −2.07$, $p = .04$, two-tailed).

Mood and Life Satisfaction

Table 4 shows that ALH Depression correlates positively with CES-D and negatively with QOLI summary scores (high scores signify greater life quality satisfaction). ALH Impulsivity and Malevolence also correlate negatively with QOLI scores.

Early Experience

Table 4 shows that ALH Depression correlates with NEGLIFE and the sum of the negative scores for the early memory of mother (NEGMOM). ALH Impulsivity correlates with NEGLIFE, whereas ALH Malevolence correlates with NEGMOM. Note that CES-D and QOLI scores correlate with NEGLIFE but not with NEGMOM.

To see if NEGMOM remained a strong predictor after controlling for other variables, the following factors were entered stepwise into a hierarchical regression: ALH word count (the number of words in each ALH), gender, SES, QOLI, CES-D, and NEGLIFE. Table 5 shows that for the ALH Clinical Feature Scales, NEGMOM remains a robust predictor for ALH Depression and Malevolence. This also held true for two negative future events: divorce and accidents.

TABLE 5
Hierarchical Regression of ALH Scores on Negative Maternal Memories

Dependent Variable	Predictor Variables	R	β	β*SE*	R²	*Probability*
ALH future life events						
Divorce	ALH count	.10	.09	.00	.02	*ns*
($F = 1.72$)	Gender	.15	.11	.06	.03	*ns*
	SES	.17	.07	.02	.03	*ns*
	QOLI	.19	−.10	.02	.04	*ns*
	CES-D	.19	.07	.00	.04	*ns*
	NEGLIFE	.20	−.10	.01	.05	*ns*
	NEGMOM	.27	.20	.00	.09	.02
Accidents	ALH count	.14	.13	.00	.01	*ns*
($F = 1.58$)	Gender	.16	−.06	.05	.02	*ns*
	SES	.19	−.10	.02	.03	*ns*
	QOLI	.20	.08	.02	.04	*ns*
	CES-D	.20	−.03	.00	.04	*ns*
	NEGLIFE	.23	.07	.00	.04	*ns*
	NEGMOM	.30	.20	.00	.08	.02
ALH clinical features scores						
Depression	ALH count	.12	.07	.00	.01	*ns*
($F = 2.81$)	Gender	.12	.03	.14	.02	*ns*
	SES	.20	.12	.06	.04	*ns*
	QOLI	.31	−.22	.06	.09	.02
	CES-D	.31	.02	.00	.10	*ns*
	NEGLIFE	.31	−.02	.03	.10	*ns*
	NEGMOM	.38	.23	.02	.15	.007
Malevolence	ALH count	.19	.17	.00	.03	.05
($F = 1.86$)	Gender	.19	.02	.10	.04	*ns*
	SES	.19	−.04	.04	.04	*ns*
	QOLI	.23	−.17	.04	.05	.09
	CES-D	.24	−.08	.00	.06	*ns*
	NEGLIFE	.24	−.03	.02	.06	*ns*
	NEGMOM	.32	.21	.01	.10	.02

NOTE: Beta refers to the final-step beta weights; *r* values are additive. ALH = Anticipated Life History; SES = socioeconomic status; QOLI = Quality of Life Inventory; CES-D = Center for Epidemiological Studies Depression Scale; NEGLIFE = negative early life events; NEGMOM = negative early memory of mother.

DISCUSSION

The data confirm the research goals of this study. First, the results provide new evidence that projectives can be coded to measure implicit personality and cognitive processes that self-report measures cannot. The Anticipated Life History was sensitive to negative early life experiences and negative early memories of maternal caregivers when controlling for other variables, including self-report instruments measuring depression and quality-of-life satisfaction. Second, its correlations with those self-report measures establish the usefulness of the ALH as a clinical instrument.

Because this is the second report from a study in progress, the main limitations to these findings have to do with the diversity of the sample. At this point, the sample is not large enough to compare the five Hollingshead class categories; there is yet a minimal representation of minority participants, and participants seeking psychotherapy at a college or university counseling center have not yet been added. However, data collection for an additional 140 participants is ongoing, and future reports will address issues of diversity and mental health functioning.

The findings confirm our predictions of gender effects. Female participants scored higher on self-report depression but wrote ALH narratives that were not more depressed than those written by the male participants. The findings also confirm the commonly accepted notion that men are more impulsive than women; their narratives contained more impulsive events than the women's and tended to be written in a more impulsive style. That ALH Impulsivity also correlates with negative early life experiences and negatively with quality-of-life satisfaction is empirical evidence that impulsive behavior may be interpreted as inefficient defense against anxiety and depressed mood; alternatively, it may suggest that difficulties in the self-regulation of behavior stem from early childhood (Kremen & Block, 1998).

The findings also confirm the hypothesis that the ALH is sensitive to the same aspects of personality process measured by self-report instruments. Participants acknowledging depression on the CES-D and low quality-of-life satisfaction on the QOLI also scored higher on ALH Depression; moreover, participants scoring low on the QOLI also scored higher on ALH Malevolence and Impulsivity. Fantasy Distortion, however, correlated neither with the measures of early experience nor with CES-D or QOLI scores. This may be due to the sample itself, which was recruited from college and high school classes and had a relatively restricted range of self-report scores. When the clinical sample has been added to the database, the increased range should provide a more accurate estimate of the relationship with Fantasy Distortion with the other

scores. Moreover, the clinical sample should include participants who have greater difficulty stemming their projections, thus providing validity to this particular scale.

In addition, ALH Depression and Malevolence both correlated with negative early life events and negative memories of mother (NEGMOM), which suggests that the ALH is sensitive to the attachment process of early childhood. An alternative explanation of this finding might be that participants' current depression simply imposed a negative affect tone to associations to the future (ALH) and to the past (early memories). This interpretation, however, cannot account for why the two other early memories—the earliest memory and earliest memory of father—had no relationship with ALH scores. To test the strength of this association, NEGMOM was put into a regression model, and after controlling for a range of variables—ALH word length, gender, SES, self-report depression, self-report quality-of-life satisfaction—NEGMOM *still* predicted ALH Depression, ALH Malevolence, as well as future divorce and future accidents. And because for all participants early memories were elicited *after* they wrote their ALH, this suggests that the cognitive act of using one's imagination activates early memories as an implicit process. This confirms findings from another study by our research group. After coding responses to the Narrative Completion Test, a measure prompting respondents to complete seven story stems, negative maternal memories predicted depression, abandonment, and anxiety in the narrative material, whereas positive maternal memories predicted happiness, affiliation, and empathy (Segal, Vizueta, Biuckians, & Pollak, 2003).

These findings provide evidence for the connection between projective measures and early childhood proposed in the introduction to this article. We argued that early childhood consciousness is predominated by fantasy, play, and the projection of wishes onto external objects and that this projective mode of consciousness persists throughout the life span—despite the social cognitive structures developed later in childhood—whenever we daydream, make up stories, or face intense conflict. The results here confirm this model. Even though the ALH required adults to make up a plausible, nonidealized future life, the cognitive act of using the imagination nevertheless evoked memories of caregivers from early childhood when the projective mode is the dominant form of thinking. After considering these findings in light of connectionist theory and research, one might argue that a neural network of interpersonal experience, based on early events, is formed in early childhood that generates the associations of the projective phase; and this network of associations is activated when we use our imagination to make up stories, even "realistic" versions of our future lives.

APPENDIX

To illustrate the use of the clinical scales, two Anticipated Life History (ALH) narratives are presented followed by the scores and their justifications.

ALH: Female Participant

My 21st birthday, it's the year 2000. Wasn't the world supposed to end? I'm a senior in college at ————— and we're out at a bar celebrating. We-hmmm . . . who might that be? Some sorority sisters, my boyfriend of 1 month, my roommate, and some others I've met along the way. It's October 29, 2000. I met my boyfriend on Sept. 26, my grandmother's birthday (she's somewhere around 80). I was eating dinner alone (everyone else was at class). Jeff (perhaps that's his name) joined me. He's a great guy! I know we'll be together for a long time. Or maybe just a few more days for my special day, he bought me roses, red ones. I said, they were beautiful but black are my dream gift. He's not going to last much longer.

A few months pass, and I'm home for X-mas break. Mom's on my case again over the peanut tattoo on my ankle and my redder-than-last-time hair. Christmas eve at my 80-year-old gramma's.

Kathy, a cousin, is missing. She died 1½ years ago. Suicide, couldn't take the pressure. She was only 19, it was me who was supposed to die then. I miss her.

When I get back to school, time flies. Finals are over and graduation was exasperating. I've got a job lined up at ————— Elementary school (3rd grade) in the fall. My apartment overlooks the lake if you squint your eyes, stick your head out the window, and stretch really far, it's home! My husband graduated two years ahead of me and went to —————. He's from the area of ———— originally. He teaches 4th grade at the same school as I. We met at the copier machine, and we both knew what was to follow. A moderate-size wedding with a huge headache. But love made it all fun and we're happy.

I'm 27 now, been married 4 years, and 8½ months pregnant. Happier than ever! The nursery's all set, clothes have been bought. Names are even picked out, Lea Christine if it's a girl; Andrew Caesar if it's a boy. We're both overly excited. Three weeks pass and the contractions begin. It's 2:00 A.M. He calls the doctor, and we rush to the hospital. I dilate fast, and by 3:17 A.M. our baby girl is born and I have died. There were unforeseen complications and nothing to be done in my savior. My husband weeps and holds his daughter dear. I am gone.

Narrative Integrity: This scores a "4" because the narrative is well organized, easy to follow, and has no lapses in clarity.

Depression: This scores a "4" because of three features: the suicide of the cousin, the participant's sense that she should have died instead, and her premature death in childbirth.

Fantasy Distortion: This scores a "4" for Fantasy Distortion because it is filled with idiosyncratic events that the participant cannot have plausibly predicted, such as dying in childbirth.

Impulsivity: This scores a "1" for the absence of impulsive content or writing style.

Malevolence: This scores a "2" because of the sense that the world is a very difficult place, implied by the suicide of Kathy who "couldn't take the pressure."

ALH: Male Participant

21st birthday—I'll be drunk. Soon following, I will end my birthday binge and return to life as normal. I will graduate from ————— in a degree of one of the following: Physics, Natural Resources, or Anthropology. After graduating, I may for awhile attempting to pay off loans. In the United States, our technology is developing rapidly, and if I feel it has put too much power in the hands of the government, I will leave for Canada. If my degree is Anthropology, I would like to spend a large portion of my life with natives in Papua New Guinea or the aborigines of Australia. If I am initiated into a tribe, I may live out the rest of my life in the jungle.

If I stay in the United States, I will marry at a young age, 24 or 25. Children are a venture too taxing on the environment, especially in the U.S. so I would like to have only two or three, depending on my wife's feelings on the matter. I may have a well-paying job and lots of money, but it is an issue that rarely concerns me.

As I get older, I'd like to start writing books, devote much of my time to meditation and physical exercise. If World War III breaks out, I will flee to Canada to avoid the Draft.

From 45—older, I do not see myself particularly interested in working for money. I would be perfectly content aging away with the tribes, but if I remain in the States, I'll most likely be a hermit. Hopefully the Mrs. will join me.

I will most likely die of cancer. It runs in my family, and I'm a smoker so it'll be curtains for me a fairly young age, not much older than 85. I will probably smoke the rest of my life, not a heavy smoker, but I will have never quit entirely.

Narrative Integrity: This scores a "3" because the narrative is elliptical at points (e.g., he skips from age 45 to his death) and does not cohere into a well-organized story.

Depression: This scores a "2" because of the general pessimism about the world's future, and his prediction of becoming a "hermit" if he stays in the United States, a statement likely influenced by depressed mood.

Fantasy Distortion: This scores a "2" because of his certainty of being initiated into an aboriginal tribe. Note that he tends to couch his future narrative in the conditional tense, thus avoiding a higher Fantasy Distortion score.

Impulsivity: This scores a "2" for the "birthday binge" and his predicted difficulty quitting smoking.

Malevolence: This scores a "3" because of the well-developed theme that that world is a dangerous place, from his sense that the government has "too much power" to his explicit fear of World War III.

NOTE

1. Available from the first author on request.

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