Identifying Resilience Through Narratives of Self-Reflection: Improving the Method and Establishing Reliability

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1. INTRODUCTION

- The human capacity for "self-reflective consciousness," considered "the most precious achievement of our species" (1), is linked to the evolution of human brain structure (1,2). Little is known about developmental antecedents facilitating the growth of this uniquely human attribute.
- Psychoanalytic theory regards self-reflection as involving the capacity for advanced symbolic representation, achieved in an interpersonal matrix imbued with empathic understanding.
- Participation in a psychoanalysis requires a basic aptitude for self-reflection, the enhancement of which, realized in an interpersonal developmental context, is a goal of psychoanalysis.
- **Self-reflection (SR)** is defined conceptually as those metacognitive processes (3) employed in the service of exploring the self, for the purpose of attaining greater self-understanding, motivated by self-curiosity (4). SR is widely regarded as marking an unfolding developmental competence emerging in adolescence (5). Increased self-awareness in adolescence (6,7), resulting, in part, from developing cognitive capacities (8), makes SR possible.
- SR may be conceived of as one aspect of Ego Development (9, 10), and is a narrative theme in preliminary findings from our longitudinal study of resilience (11)
- Resilience, defined as relatively positive adaptive outcome despite significant adversity (12), has rarely been studied by systematically examining possible influences of prospective narrative accounts on subsequent resilient outcomes.
- The contribution of SR to resilience, while acknowledged (13), has rarely, save for one known exception (14), been empirically studied.

2. STUDY AIMS

1. To assess construct validity of operationalized SR, we will examine whether higher ego development (psychosocial maturation) scores (15) at year one (early adolescence, mean age = 14 years), in a sub-sample of high risk adolescents, are associated with higher adolescent self-reflection at year one in adolescent semi-structured research interview data.
2. To examine whether higher levels of adolescent SR, as assessed using our newly-refined coding instrument, predict resilience indices in the same sample. Our prior coding system accounted for instances of SR regardless of complexity or intensity of self-reflection in self-references assessed. Our new coding system, described subsequently, evaluates SR in a more fine-tuned and detailed manner, accounting for levels of SR in the interviews.
3. To assess interrater reliability of our newly-refined coding instrument for assessing SR in semi-structured research interviews.

3. METHODS

A. Participants

- 16 participants, all former psychiatric inpatients, were drawn from a longitudinal study of 70 psychiatrically hospitalized non-psotic teens, and 76 demographically-matched volunteers from a local public high school.
- 9 of the 16 former patients met resilience criteria by showing *positive functioning* scores above the 50th percentile, and *problematic functioning* scores below the 50th percentile for the entire sample (patients plus students), identified during young adulthood (ages 25-26 years).
- A contrast (average outcome) group consisted of 7 of the former high risk adolescents showing—relative to all previously hospitalized patients—young adult outcome scores between the 40th and 60th percentile of this high risk sample.

B. Measurements

1. Measures Defining Resilience (at young adulthood, ages 25-26):
Positive Functioning Measures above the 50th percentile for the entire sample:
- Ego Development Item Sum Score (10)
- Coherence of Attachment Representations (16)
- Peer Q-Sort Ego Resilience (17)
- Closeness Inventory (18)

Problematic Functioning Measures below the 50th percentile for the entire sample:
- Hopkins Symptom Checklist (SCL-90; 19)
- Delinquency/Crime Questionnaire (20)
- Substance Abuse Questionnaire (20)

Positive Functioning and Problematic Functioning Indices Composite Z-Scores:
Using the entire (N = 142) sample at age 25-26 , z-scores were separately computed for the positive functioning and problematic functioning measures above. The individual z-scores were then averaged to obtain a mean z-score for each participant for both positive and problematic functioning indices.

Overall (Positive & Problematic Functioning Indices) Resilience Composite Z-Scores:
An **overall** z-score, reflecting a composite measure of both positive and problematic functioning measures, were computed for each participant by averaging the positive and problematic z-scores for each participant

B. Measurements - Continued

2. Self-Reflection Coding Scheme Summary (a draft is available upon request)
a. Operational Definition of Self-Reflection in the Narrative of Adolescents:
Self-reflection is operationally defined for the purpose of narrative identification as *self references* bearing at least one of the following qualities:
1. Imparting self-knowledge judged to be unique to the individual.
2. Evidencing the speaker's regard for their own internal experiences and states as objects of inquiry; they exhibit self-observational capacity.
-For any *self-reference* to be considered *self-reflective,* it must at least meet one of criteria one and two above. *Self-reflections* become increasingly complex as they take on one or more of the following qualities. These qualities are not necessarily in ascending hierarchical order, in terms of increasing degree of self-reflection.
3. Encompassing some acknowledgment or evidence of the self as a complex entity, for example as reflected in verbal expression of ambivalent feelings.
4. Involving the capacity to perceive relations among thoughts, feelings and actions.
5. Are elaborated and abstract.
6. Recognize the self as changing in time, either from the past to the present or from the present to the future, or both.
7. Recognize the impact of others on the self, and/or the impact of oneself on others.
b. Levels of Self-Reflection:
In order to account for the differences between individual adolescent's aptitudes for self-reflection, a system for measuring levels of SR has been constructed. All self-references meeting at least criteria 1 and 2 for SR are coded for the level of SR, on a graded scale from 1 to 3. Level 1, 2 and 3 SRs reflect increasing abstractness, complexity, and elaboration of SR.

c. SR continuous variable weighted scores were derived by multiplying SRs in each category by a factor equal to the category number and adding these to arrive at a weighted SR score.

4. Results

- **At year 1,** Self-reflection (SR) scores were significantly correlated with ego development item sum scores (ISS) (r=.75, p=.001, N=16).
- Highly significant interrater reliability was yielded between total weighted SR scores as measured by two different coders blind to resilience status (r = .877, p < .0001, N=16).
- A significant positive correlation, moderate in strength (r = .61, p = .012, N=16) was observed between SR at year 1, and the mean of the 4 positive functioning resilience-components z-scores for the whole group (For the resilient group, r = .80, p =.01, N=9; for the average outcome group r = .78, p = 0.37, N = 7) (Figure 1)
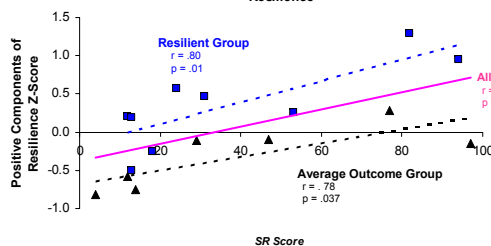- A significant positive correlation (r = .82, p = .006, N = 9) was found between SR at year 1 and overall resilience z-scores for the resilient outcome group (Figure 2).
- A significant positive correlation (r = .50, p = .05, N = 16) was found between SR at year 1 and overall resilience z-scores for the whole group (Figure 2).
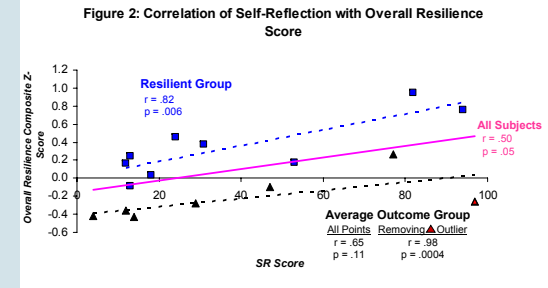- While no statistically significant correlation was found between SR at year 1 and overall resilience z-scores in the average outcome group, when one outlying average outcome high SR scorer was removed, a significant correlation (r= .98, p=.0004, N=15) was then found between SR at year 1 and overall resilience scores for the average outcome group. (Figure 2).
- When the resilience construct is re-conceptualized from a categorical variable (R = resilient and A = average outcome), to a continuous variable (overall resilience z-score) it is notable (evident in Figure 2) that one average outcome subject surpassed some resilient outcome subjects in overall resilient outcome z-scores.

Figure 1: Correlation of Self-Reflection with Positive Components of Resilience
Resilient Group r = .80 p = .01
All Subjects r = .61 p = .012
Average Outcome Group r = .78 p = .037
SR Score

4. Results- continued

Figure 2: Correlation of Self-Reflection with Overall Resilience Score
Resilient Group r = .82 p = .006
All Subjects r = .50 p = .05
Average Outcome Group
All Points r = .65 p = .11
Removing Outlier r = .98 p = .0004
SR Score

5. Conclusions & Discussion

- Consistent with the hypothesis of the first study aim, SR at year one was significantly correlated with ego development at year one, an indication of construct validity of our operationalized definition of SR.
- SR was significantly correlated with the mean of four positive functioning resilience component z-scores, partially consistent with the hypothesis that SR is predictive of resilient outcome. This was expected since SR is a theoretically adaptive construct more closely allied conceptually with the positive functioning components of our definition of resilience. Furthermore, this is evidence for the predictive validity of our operationalization of SR.
- That SR correlates to the overall resilience composite z-scores in the resilient group and the whole (resilience + average outcome) group, but not the average outcome group alone is explained by one average outcome subject's very high self-reflection score (Figure 2). This subject's very disparate SR score as compared to their overall resilience score deviates from the otherwise linear distribution. The level of psychopathology at young adulthood in this subject was sufficiently incapacitating to dwarf any positive effect SR might have otherwise imparted.
- That SR correlates with overall resilience scores in the resilient subjects and in the whole group is in keeping with the notion that psychopathology adversely effects the capacity for self-reflection, and that the absence of self-reflection may render increased vulnerability to psychopathology.
- That the correlation of SR with positive functioning indices for the whole group was stronger than correlation of SR with overall resilience z-scores for the same group indicates that SR's effect on outcome changes when psychopathology is taken into account. Further studies are needed to elucidate how SR impacts the expression of psychopathology and conversely, how psychopathology adversely effects SR.
- The finding that SR was correlated with the mean of four positive functioning resilience component z-scores was more robust with our more finely-tuned coding system, accounting for levels of self reflection (using our previous coding instrument, r = .53, p = .036, N=16; using our refined coding instrument, r = .61, p = .012, N=16), indicating that the refined coding instrument improved the sensitivity of our method for assessing SR.
- The finding that resilience measured categorically is not directly comparable with resilience measured using the continuous variable method is likely a consequence of the very different ways that these variables were derived. These analyses indicate that the overall resilience z-scores may be best understood as a measure of competence and that a future direction to pursue would be to reconsider how to derive a continuous resilience variable which corresponds to the original definition of resilience used in previous studies.
- This data indicate that while SR is not the key to positive outcome or resilience, it makes a substantial contribution. This is theorized to occur via its effect on the development of interpersonal awareness, empathy, personal agency, narrative identity and self-efficacy.
- An additional future direction to pursue would be to define a low-functioning outcome group among the formerly hospitalized subjects in order to further demonstrate and clarify the relations between SR in adolescence and adaptive and psychopathological functioning at young adulthood.
- Yet another future direction to pursue would be to extend these competence/resilience analyses to our whole sample to better understand the meaning of these relations by increasing the sample size and thus further elucidating the association between SR in adolescence and resilient outcomes in young adulthood and beyond.