

# Test Reactivity: Does the Measurement of Identity Serve as an Impetus for Identity Exploration?

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The purpose of the current study was to determine if test reactivity is a concern in empirical studies of identity. That is, the goal was to establish if the process of measuring identity provokes identity exploration. Should measuring an individual's identity lead him or her to begin considering identity-relevant issues, the experimenter has unintentionally altered the degree to which one is engaged in identity exploration. This potential threat to the validity of a study has implications for longitudinal studies of identity, particularly those that attempt to establish what the precursors are to changes in identity. The results revealed no differences in identity scores between the various experimental groups. The results are discussed in terms of future studies of identity.

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According to Kroger (2000), identity is "a subjective feeling of self-sameness and continuity over time" (p. 8). Erikson's (1963) lifespan theory of psychosocial development proposes that the normative crisis to occur in adolescence is that of an identity crisis. Marcia (1966) elaborated on Erikson's proposal by suggesting that this stage consists not of either identity resolution or identity confusion as Erikson claimed, but the extent to which one both has explored and committed to an identity in a variety of life domains including politics, occupation, religion, romantic relationships, friendships, and sex roles.

Previous research has established a variety of factors that may contribute to identity development during both adolescence and adulthood. Kroger and Green (1996) found that during retrospective interviews, mid-life adults identified prior life events that were associated with major changes in one's identity. Factors responsible for identity changes included 'age-graded events' (e.g., turning 50 years old), 'history-graded events' (e.g., the Vietnam war), 'critical life events' (e.g., the sudden death of a loved one), 'stage of family life cycle events' (e.g., birth of a child), 'exposure to different cultural/social milieus/sources of knowledge (e.g., travel), 'the direct influence of a significant other' (e.g., pressure from one's spouse), 'internal changes' (e.g., new awareness via introspection), and 'no opportunity to pursue desired goals' (e.g., reaching a dead end). In addition, Anthis (2002a, 2002b) has found similar results (i.e., relationships between the occurrence of stressful life events and changes in identity over time) when examining these relationships using a longitudinal design.

As a result of these studies, future investigations of identity have an inventory of life-events to which compare other participants' explanations for change. Yet the issue of test reactivity in identity measurement has failed to be addressed in the work on precursors to identity development. That is, does the act of measuring identity status encourage identity exploration in participants? Rubin and Mitchell (1976) reported that in a study of dating relationships, almost half the participants said that their participation in the experiment had affected their relationships, particularly in that it led them to think about issues they had not previously thought about. In the case of research conducted on identity, test reactivity is an issue worthy of serious consideration.

If asking an individual about identity-related concerns (either through verbal or written questioning) leads him or her to begin exploring issues he or she has never questioned, and identity is again later assessed, the extent to which a participant has explored his or her identity is now altered, albeit unintentionally by the experimenter. Additionally, being asked questions regarding one's identity, and having those questions increase one's degree of identity exploration (or decreases in one's level of identity commitment) is a special cause for concern in longitudinal studies of identity that attempt to identify the precursors to identity changes over time.

Therefore, the purpose of the current study was to determine if test reactivity is a relevant concern in the measurement of identity. Specifically, the current study compared identity (exploration and commitment) scores between individuals administered a paper-and pencil measure of identity status, individuals administered an identity status interview, and individuals who were also administered a pre-test of the aforementioned identity measure and individuals who simply completed this same identity measure.

Hypothesis 1 predicted that identity exploration scores would not significantly differ as a function of how identity was measured (either via an interview or a paper-and-pencil method), nor would identity commitment scores vary as a function of how identity was measured (Hypothesis 2). Although the proposed hypotheses of no effect may run contrary to traditional scientific inquiry, Cortina and Folger (1998) convincingly remind researchers of the importance of such by stating:

Disdain for null effects has even generated the following joke. A person falls into a deep hole. Repeated attempts to escape fail miserably. Collapsing with exhaustion, the person mutters, "It must be impossible to get out of here." A nearby voice answers out of the darkness, "You're right. I tried every one of those methods. None of them works." Startled, the first person cries out bitterly, "Why didn't you tell me before now?" The reply: "So who publishes null results?" (p. 335)

## **Method**

### *Participants*

Eighty-nine university students (66 females, 23 males) volunteered to participate in the study in exchange for extra credit. 63 of the participants were Caucasian, 14 were African-American, 7 were Latina/o, and 5 were Asian. Participants ranged in age from 17 to 46 years, with a mean age of 19.82 years ( $SD = 3.78$ ).

### *Materials*

The instrument used to measure identity exploration and identity commitment was the Ego Identity Process Questionnaire, or the EIPQ (Balistreri, Busch-Rossnagel, & Geisinger, 1995), and the instruments used to assess identity status were the Extended Objective Measure of Identity Status, or the EOMEIS-2 (Adams, Bennion, & Huh, 1989) and the Identity Status Interview, or the ISI (Waterman, Besold, Crook, & Manzini, 1987).

*EIPQ*. Balistreri, Busch-Rossnagel, and Geisinger's (1995) Ego Identity Process Questionnaire (EIPQ) is a 32-item scale that measures the dimensions of exploration and commitment in eight different areas: Occupation, Religion, Politics, Values, Family, Friendships, Dating, and Sex Roles. The EIPQ is unique in its utilizing separate exploration and commitment scores, rather than confounding the two, as in more traditional measures of identity. The EIPQ provides continuous scores on each of these two dimensions, which allows for more powerful statistical analyses to be conducted with the measure. Sixteen of the items measure identity exploration, and 16 items measure identity commitment, all on a 6-point scale.

Balistreri et al. (1995) report internal consistency estimates of .80 and .86 for the commitment and exploration scores, respectively, as well as one week test-retest reliabilities of .90 for commitment and .76 for exploration. Reliabilities for the current study included internal consistencies of (i.e., coefficient alphas) .72 and .71 for the Time 1 commitment and exploration scores, respectively. In addition, the mean Time 2 commitment score was 65.60 (SD = 8.90), with a range of 43 to 88. The mean Time 2 exploration score was 61.18 (SD = 10.09), with a range of 39 - 90.

*EOMEIS-2*. The Extended Objective Measure of Ego Identity Status, Revised Edition (EOMEIS-2), is a 64-item inventory that measures identity status based on Marcia's (1966) paradigm. The EOMEIS-2 has a common set of stems used across all respondents, and a Likert-scale response format. The scale measures identity in terms of both Ideological identity domains (including Politics, Religion, Occupation, and Philosophical Life-Style issues), as well as Interpersonal identity domains (including Friendship, Family, Sex Roles, and Recreational issues). According to Adams, Bennion, and Huh, (1989), the EOMEIS-2 demonstrates adequate reliability, and estimates of internal consistency range from .62 to .75 on the Ideological sub-scales, and from .58 to .80 on the Interpersonal sub-scales.

*ISI*. The ISI, or the Identity Status Interview (Waterman, Besold, Crook, & Manzini, 1987), is a frequently utilized measure of identity status (see Goossens, 2001, for a review), due to its extensive list of questions regarding the extent to which one has explored and committed to an identity. The interview questions address domain-specific identity concerns, including Family Issues, Personal Relationships, Recreation/Leisure, Occupation, Politics and Religion. The entire interview session requires approximately one hour to administer.

At Time 1, participants were randomly assigned to one of four groups. Participants in the 'Demographics' group were told to return to the study one week later after completing only the consent and demographic forms, while participants in the 'Pre-test' group completed the consent and demographic forms along with the pre-test (the EIPQ at Time 1) to then be told to return one week later. Participants in the 'Interview' group completed the consent form, demographics sheet, the pre-test, were administered the Identity Status Interview, and were told to return one week later, and participants in the 'Eomeis' group were told to return one week later after completing the consent form, demographics sheet, pre-test and the EOMEIS-2. Exactly one week after Time 1, all participants returned to complete the EIPQ a second time (i.e., Time 2). A time interval of one week was chosen because it was assumed it would ultimately be the shortest period of time that a meaningful longitudinal examination of identity would be of interest.

## Results

### *Sample Size*

Eighty-nine students participated in the study, with 21 participants in the Interview group, 26 participants in the EOMEIS-2 group, 21 participants in the pre-test and post-test groups, and 21 participants in the post-test comparison group. Assuming a large effect size (i.e.,  $d = .40$ ) and a  $1-\beta$  of .87, a power analysis (Cohen, 1988) revealed that 21 participants per condition were necessary. A large effect size was assumed so in that in the event of statistically significant results, data collection would then be continue without being unwarranted. Additionally, a large effect was assumed given the extremely brief interval between the pre-test and the post-test.

### *Data Analysis*

Although random assignment to four conditions was employed, differences between the groups on the EIPQ may have existed at Time 1. Therefore, in order to adjust for these differences, analyses of covariance (ANCOVAs) were considered ideal, using condition (Demographics, Pre-Test, EOMEIS-2, or Interview) as the independent variable, Time 1 EIPQ scores as the covariate and Time 2 EIPQ scores as the dependent variable. Yet conducting such an analyses was precluded by the lack of a pre-test on the EIPQ at Time 1 by the 'Demographics' group. Therefore, in order to identify any initial differences between the four groups, a one-way analysis of variance (ANOVA) was conducted, using condition as the independent variable and Time 2 EIPQ scores as the dependent variable. Were differences to be found between the 'Demographics' group and any or all of the three other groups in this ANOVA, an ANCOVA was planned to subsequently be conducted on the three different pre-test groups.

### *Identity Exploration*

A one-way between subjects ANOVA was performed on EIPQ identity exploration scores. The independent variable was condition, and the dependent variable was Time 2 identity exploration scores. Levene's test of homogeneity of error variances (see Tabachnick & Fidell, 2001) was not significant. Condition was not found to be significantly related to Time 2 identity exploration scores,  $F(3, 85) = .70, ns$ . Therefore, Hypothesis 1 was supported. See Table 1 for Time 2 identity exploration means.

### *Identity Commitment*

A one-way between subjects ANOVA was performed on EIPQ identity commitment scores. The independent variable was condition, and the dependent variable was Time 2 identity commitment scores. Levene's test of homogeneity of error variances (see Tabachnick & Fidell, 2001) was not significant. Condition was not found to be significant,  $F(3, 85) = .55, ns$ . Therefore, Hypothesis 2 was supported. See Table 2 for identity commitment means.

## **Discussion**

The current study examined differences in identity exploration and commitment scores as a function of how identity status was assessed. Four conditions were employed, i.e., two of the groups were administered an intervening measure of identity after the initial assessment, whereas a third group received no intervening measure and only the pre-test and the post-test, with the fourth group only completing the post-test. The results indicated that the hypotheses were supported. Specifically, it was found that the mean identity exploration and commitment scores at Time 2 did not significantly differ between the four conditions.

**Table 1****Time 2 Identity Exploration Scores as a Function of Condition**

Condition	<i>n</i>	Mean	Standard Deviation
'Demographics'	21	63.33	12.36
'Pre-test'	21	62.19	10.26
'Interview'	21	60.10	8.71
'Eomeis'	26	59.50	9.07

**Table 2****Time 2 Identity Commitment Scores as a Function of Condition**

Condition	<i>n</i>	Mean	Standard Deviation
'Demographics'	21	65.33	8.47
'Pre-test'	21	67.33	7.70
'Interview'	21	63.81	7.13
'Eomeis'	26	65.85	11.31

Suggestions for short-term longitudinal studies of identity can be found in the literature (Kroger, 1993), yet examining changes in identity scores over time intervals of less than one week would render the results meaningless. The possibility that the measures employed in the current study were not sensitive to identity changes must also be considered, yet the measures chosen were some of those most frequently employed in identity research (and were of adequate reliability), so that the external validity of significant findings using alternative scales may be question. In addition, it is suggested that future research investigate the possibility that the measuring of identity status does indeed increase identity exploration and/or identity commitment, but only after extended periods of time, especially given the possibility that a one week interval could reflect measurement error more so than true developmental change.

In conclusion, it appears that the potential threat of test reactivity in the measurement of identity may not be cause for concern.

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