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Not All Seniors Are Equal: Interpreting Trait Scores of the College Graduate

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Abstract

Costa and McCrae, in their work with the Baltimore Longitudinal Study of Aging, have established a developmental trend for the Big Five traits. According to their findings, as individuals age from about 18 to about 30, their scores on the traits of Neuroticism, Extraversion, and Openness tend to decrease, while scores on Agreeableness and Conscientiousness tend to increase. As a result, they recommend the use of college-age norms for interpreting the scores of persons under 30 years of age. However, in our work with the Big Five and full-time working adults, we have discovered a major exception to this trend. Students who work full time during their college years do not show this trend--in fact, their scores from age 18 remain flat with neither increase nor decrease. We attribute this phenomenon to the tendency of full-time employment to accelerate the process of personality development, such that full-time employed college students arrive at an optimum level of the Big Five traits substantially earlier than their cohorts who live off of their parents or scholarships.

Not All Seniors Are Equal: Interpreting Trait Scores of the College Graduate

The test of any new theory is its power to provide new insights into the domain from which it arises. As the primary new theory in the field of personality, the Five-Factor Model is clearly ascendant among efforts to describe the structure of personality. And, to demonstrate its power, U.S. researchers Costa and McCrae (1990, 1992) announced a new insight into the development of personality in adulthood. Namely, that Need for Stability (N), Extraversion (E), and Openness (O) tend to decrease from late adolescence into young adulthood, while Agreeableness (A) and Conscientious (C) tend to increase during the same period of, roughly, from 18 to 30. This, they announced, was the developmental task of “growing up”--becoming more emotionally stable, less excitement seeking, more practical, more of a team player, and more focused on career and disciplined in the pursuit of goals. McCrae et al (2000) report evidence of this pattern in other diverse cultures, including Germany, Portugal, South Korea, Japan, and Turkey.

In a larger context, discussion of this developmental pattern belongs under the heading of “stability and change in human characteristics,” or, more popularly, the “plaster/plastic debate.” Some say traits are (primarily genetically) set in plaster by a certain age and remain unchanged for the remainder of one’s life. Others say traits are more plastic, subject to change from the effects of education, job expectations, relationships, other environmental forces, and physiological changes. Still others say traits are both plaster and plastic, with genetics setting a kind of minimum/maximum, and the environment affecting trait levels within the range. That third point of view is shared by this researcher. Accordingly, much research effort is currently underway to determine population trends--changes in trait levels that appear to follow a pattern, just as Costa and McCrae found a pattern of N, E, and O falling, with A and C rising from about

age 20 to age 30.

One such piece of research is the recently publicized work of Srivastava, John, Gosling, and Potter (2003), in which they found several changes that, while not destructive of Costa and McCrae's pattern, certainly give reason to consider modifying it. For example, Srivastava and associates found that, indeed, N, did decrease, but mostly on the part of females, with males appearing to remain stable in N over the same time period. Sex differences in N have existed for some time, with the suspicion that lower male levels of N might be attributable to socially desirable responding that is not reflective of real inner processes. In addition, they found that E in fact decreased, but mostly for females, with males showing a slight increase over time. For O, they found a slight decrease for both sexes. The A results were most intriguing, in that they found, in agreement with Costa and McCrae, that A increased moderately during the 20's, but that a spurt occurred in the late 20's and continuing to around age 40, and then continuing to increase only slightly. This trend, found in both males and females, they associate with the demands placed on late 20-somethings to nurture children, and, later, to nurture grandchildren. Consistent with Costa and McCrae, they found a significant increase in C from 20 to 30, but also a continuing slight increase in C beyond age 30. Of these five findings, the sharp, continuing increase in A during child-rearing years is the most significant contribution to our knowledge of adult development. It would certainly be of interest to know if Costa and McCrae have analyzed their data to determine whether or not different patterns in A scores might be obtained for childless versus child-rearing individuals.

In another study, Sherry, Henson, and Lewis (2003) investigated whether the NEO PI-R College Norms (recommended for use with ages 17-20, and for less mature persons of ages 21-30) might be used with high school/adolescent students. Their findings suggest that the NEO PI-

R College Norms do not reflect adolescent levels of the Big Five traits. Adolescents scored significantly different on 28 of the 35 measures (5 domains and 30 facets). Specifically, adolescents tend to score higher on N2: Anger, N6: Vulnerability, E5: Excitement-Seeking, and O1: Fantasy than do college students, but lower on E6: Positive Emotions, O3: Feelings, A3: Altruism, A4: Compliance, A5: Modesty, C1: Competence, C3: Dutifulness, C4: Achievement Striving, and C5: Self-Discipline. Interestingly, these trends are consistent with the Costa and McCrae pattern, with the exception of E6: Positive Emotions and O3: Feelings, suggesting that the descent of N, E, and O (and parallel rise of A and C) begins earlier than the period of ages 20 to 30. The exceptions were that adolescents tend to be less exuberant/optimistic than older students, and somewhat less acceptant of a wide range of feelings.

These three development studies provide the backdrop for the data presented in this article. For a variety of reasons, the Center for Applied Cognitive Studies developed a Five-Factor Model-based instrument for use exclusively in the workplace with full-time employed workers. The resulting instrument was called the WorkPlace Big Five ProFile (WB5P) (Howard & Howard, 2001). The test was normed on 500 full-time employed men and women (the Y2K Norm Group) representing a cross section of industries and job roles, and balanced race, sex, and age spread, with workers ranging in age from 18 to 70. The researcher was fully expecting the Y2K age norms for the WB5P to parallel the development trends discovered by Costa and McCrae. They didn't. In fact, the means for all facets (24) and factors (5) of the WB5P were flat across all age groups, with no increases or decreases from age 18 to age 70.

Our explanation for this unexpected difference was based on the critical difference between the two norm groups: Costa and McCrae used subjects representing many different kinds of work status, while the Y2K Norm Group used only subjects who were employed full

time. Thus, we hypothesized, it appeared that working full time while going to college or university accelerated the development process. Not relying on mom and pop's pocket book or on scholarship money must cause students to grow up faster. In addition, these fully employed, full-time students, were probably mostly married with children, entailing even more demands to grow up faster.

In an effort to begin to support this hypothesis, we worked with a research intern from a local university to collect and analyze some data. This effort turned into a master's thesis (Mulligan, 2001).

Method

The researcher administered the Short Form of the WB5P (48 items, 5-point Likert-type scale) to 141 students enrolled in three different community college courses. In addition, each subject completed a "Responsibility and Independence Profile" with questions aimed at determining the degree to which the student was Financially Independent (FI). Based on the results, 35 students were identified as FI (full-time employed and not carried as a dependent on the parents' income tax), 57 were identified as FD (Financially Dependent on their parents or on scholarship), and 49 were discarded as "in-between," neither fully dependent nor fully independent. Both the FI and the FD groups were compared to a randomly selected Comparison Group (CG) of 46 (this number based on the mean of the size of the FD and FI groups) subjects pulled from the 218 Y2K Norm Group subjects in the age range 30-49.

Results

Although the numbers are small, the results show some support for our hypothesis. In reviewing Table 1, we see that the FI's were lower on N and higher on C than the FD's. In addition, the FI's did not differ from the CG on four out of the five factors. The one factor on

which the FI's differed, O, also was true for the FD's. In other words, both groups were lower on O. This suggests that the community college population in general is lower on O than the population at large, or, more specifically, lower on O than the Y2K Norm Group. The 500 subjects in the Y2K Norm Group were, by and large, either college and university educated or enrolled in colleges and universities.

Both the FD and FI groups were slightly lower (not statistically significant) on E than the CG, which is counter to what we would expect. We attribute this to the likelihood that the community college draws a generally somewhat more introverted student (less of a party environment?!) than the traditional university. On the other hand, both the FD's and FI's score lower on A than do the CG, and that is consistent, if not statistically significant, with the Costa and McCrae pattern, as well as the Srivastava et al pattern.

Discussion

Community college students who are taking a full load of courses and working full-time tend to develop stronger nerves (lower N) and more disciplined ambition (higher C) than their financially dependent classmates. As a result, using college norms for these late adolescents could be misleading. While further study is necessary to confirm and clarify these results using larger samples, the message seems clear. When interpreting the trait scores of a college senior, one needs to know the employment status of that student over their college career. In fact, to the degree that a new college graduate worked full-time and paid his/her way through school, and possibly also began a family, we should use adult norms of tests such as the NEO PI-R. For students who were financially dependent and socially independent during the college years, college norms appear to be appropriate. For those in between, we must simply make an assessment of their probable maturity level through the use of interview questions. The less

mature, the more likely we will see them decrease significantly in N, E, and O, and increase in A and C, over the next ten years. The more mature, the more likely we will see stable trait levels, with some slight increases in A and C over time, and possibly slight decreases in N, E, and O.

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Table 1

ANOVA Comparisons of Financially Independent (FI) Students and Financially Dependent (FD) Students

| Factor | SS | df | FI Mean (SD) | FD Mean (SD) | F |
|--------------------|-----------|-----------|---------------------|---------------------|----------|
| Need for Stability | 205.20 | 1 | 21.26 (4.49) | 24.33 (4.86) | 9.19** |
| Extraversion | 14.60 | 1 | 43.17 (5.52) | 42.35 (6.90) | 0.36 |
| Originality | 19.42 | 1 | 26.54 (2.82) | 25.60 (3.06) | 2.20 |
| Accommodation | 3.13 | 1 | 27.26 (5.34) | 26.88 (6.23) | 0.90 |
| Consolidation | 461.76 | 1 | 36.23 (5.17) | 31.61 (6.84) | 11.76** |

*p<.05, **p<.01

Table 2

ANOVA Comparisons of Financially Independent (FI) Students and the Middle Adulthood Comparison Group (CG)

| Factor | SS | df | FI Mean (SD) | CG Mean (SD) | F |
|--------------------|-----------|-----------|---------------------|---------------------|----------|
| Need for Stability | 2.46 | 1 | 21.26 (4.49) | 21.61 (3.78) | 0.15 |
| Extraversion | 18.28 | 1 | 43.17 (5.52) | 44.13 (6.69) | 0.47 |
| Originality | 176.38 | 1 | 26.54 (2.82) | 29.52 (4.95) | 10.16** |
| Accommodation | 68.14 | 1 | 27.26 (5.34) | 29.11 (5.61) | 2.26 |
| Consolidation | 34.40 | 1 | 36.23 (5.17) | 34.91 (6.04) | 1.07 |

*p<.05, **p<.01

Table 3

ANOVA Comparisons of Financially Dependent (FD) Students and the Middle Adulthood Comparison Group (CG)

| Factor | SS | df | FD Mean (SD) | CG Mean (SD) | F |
|--------------------|-----------|-----------|---------------------|---------------------|----------|
| Need for Stability | 188.98 | 1 | 24.33 (4.86) | 21.61 (3.78) | 9.71** |
| Extraversion | 80.62 | 1 | 42.35 (6.90) | 44.13 (6.69) | 1.74 |
| Originality | 392.22 | 1 | 25.60 (3.06) | 29.52 (4.95) | 24.36** |
| Accommodation | 126.76 | 1 | 26.88 (6.23) | 29.11 (5.61) | 3.57 |
| Consolidation | 277.05 | 1 | 31.61 (6.84) | 34.91 (6.04) | 6.56* |

*p<.05, **p<.01