Passing the Bar Exam: Psychological, Educational, and Demographic Predictors of Success

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The bar exam is the final obstacle to entering the legal profession. In 2003, more than 75,000 people took a bar exam in the United States and its territories, and approximately 64 percent of them passed.[1] Though this percentage may seem respectable, there is clearly room for improvement, given the consequences for those who fail. Failing the bar exam may lead to unemployment, a sense of professional incompetence, social embarrassment, and financial insecurity. The risk is especially high for those with debt following their expensive legal training.[2] Bar exam passage rates also factor heavily into national reputations—*U.S. News and World Report* uses a school's bar exam passage rate as a major statistical indicator of institutional quality, for example.

Despite the topic's importance to law schools and their graduates, few investigations have asked what factors contribute to success or failure on the bar exam. One preliminary analysis in a predominantly male sample

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1. National Conference of Bar Examiners, Persons Taking and Passing the 2003 Bar Examination (May 2004), available at <http://www.ncbex.org/fileadmin/mediafiles/downloads/Bar_Admissions/2003stats.pdf> (last visited Sept. 20, 2007).

2. Deborah J. Merritt, Lowell L. Hargens, and Barbara F. Reskin, Raising the Bar: A Social Science Critique of Recent Increases to Passing Scores on the Bar Exam, 69 U. Cin. L. Rev. 929 (2001).

found that grades, age of entry to law school, and undergraduate major were significant predictors of bar exam passage.[3] Another early study reported that better academic performance in law school, being married, and taking two or more law seminar courses were related to higher bar exam scores.[4] Some law professors believe that bar examination failure results from inadequate preparation, poor study habits, or test anxiety.[5] Klein and Bolus conclude that law school grade point average (LGPA) is highly predictive of bar exam performance (around a three times more accurate predictor than Law School Admission Test [LSAT] scores), and that lower passing rates of minority applicants are a function of lower LGPA.[6] Similarly, Wightman found that LGPA and LSAT scores were the strongest predictors of bar exam passage for all groups examined.[7] She cautioned, however, that considering these two variables still left a substantial amount of variance in bar exam outcomes unexplained (almost 68 percent), suggesting the need for future studies to identify additional predictive factors.

Educational and demographic variables may influence performance on the bar exam. However, with at least a dozen states raising the score required to pass their exams, and several more evaluating proposed increases,[8] researchers need to analyze further the factors that significantly affect the likelihood of bar exam success. The current study undertook the most comprehensive analysis of bar exam passage predictors to date by evaluating the role of demographic and educational variables and the effects of psychological variables such as worry, test anxiety, personality, and time management.[9]

Worry is a relatively uncontrollable, negative chain of thoughts and images that represents an attempt to engage in mental problem-solving regarding a future demand with uncertain and potentially unfavorable outcome.[10] Worriers

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3.　Clifford E. Lunneborg and Patricia W. Lunneborg, The Prediction of Different Criteria of Law School Performance, 26 Educ. & Psychol. Measurement 935 (1966).

4.　Phillips Cutright, Karen Cutright, and Douglass G. Boshkoff, Course Selection, Student Characteristics and Bar Examination Performance: The Indiana University Law School Experience, 27 J. Legal Educ. 127 (1975).

5.　Edna Wells Handy, The Bar Exam: Why Students Fail, 11 Nat'l Bar Ass'n Mag. 17 (1997).

6.　Stephen P. Klein and Roger Bolus, The Size and Source of Differences in Bar Exam Passing Rates Among Racial and Ethnic Groups. 66 The Bar Examiner 8 (1997).

7.　Linda F. Wightman, LSAC National Longitudinal Bar Passage Study (Newtown, Pa., 1998).

8.　Merritt et al., Raising the Bar, *supra* note 2.

9.　Substantial research indicates that psychological factors can affect academic performance. See, e.g., Menucha Birenbaum and Fadia Nasser, On the Relationship Between Test Anxiety and Test Performance, 27 Measurement & Evaluation in Counseling & Dev. 293 (1994); Tomas Chamorro-Premuzic and Adrian Furnham, Personality Predicts Academic Performance: Evidence from Two Longitudinal University Samples, 27 J. Res. in Personality, 319 (2003).

10.　Thomas D. Borkovec, Elwood Robinson, Thomas Pruzinsky, and James A. DePree, Preliminary Exploration of Worry: Some Characteristics and Processes, 21 Behav. Res.

experience uncontrollable negative thoughts during task performance that may lead to disruptions in concentration."[11] The evidence increasingly suggests that normal worry, as opposed to its pathological counterpart, can serve as a constructive strategy for dealing with stressful life events.[12] Worry is associated with adaptive problem-solving and information-seeking coping strategies, which may facilitate task performance.[13] In a study of first-year law students, after controlling for trait anxiety, worry predicted better exam and oral argument performance.[14] Though previous studies have indicated that worry affects task performance, no research has addressed how this variable relates to performance on major career-related assessments such as the bar exam.

Worry must be differentiated from other apparently similar anxiety constructs. Test anxiety, for example, is characterized by the disposition to react with intrusive thoughts, mental disorganization, tension, and physiological arousal when exposed to evaluative situations.[15] Studies have demonstrated that test anxiety is related to deficits in exam performance at all academic levels, from elementary school to higher education.[16] Test-anxious persons are likely to become self-focused during exams, which can interfere with performance by taking attention away from the task.[17] Additionally, test anxiety may create problems with content acquisition during studying and retrieval of known information during an exam.[18] While Powell has described the impact

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& Therapy 9 (1983).

11. *Id.* See also Thomas Pruzinsky and Thomas D. Borkovec, Cognitive and Personality Characteristics of Worriers, 28 Behav. Res. & Therapy 507 (1990).

12. Graham C.L. Davey, Pathological Worrying as Exacerbated Problem-Solving, *in* Worrying: Perspectives on Theory, Assessment, and Treatment 35 (Graham C.L. Davey and Frank Tallis eds., Chichester, Eng., 1994).

13. Graham C.L. Davey, James Hampton, Jola Farrell, and Sue Davidson, Some Characteristics of Worrying: Evidence for Worrying and Anxiety as Separate Constructs, 13 Personality and Individual Differences 133 (1992).

14. Hoorie I. Siddique, V. Holland LaSalle-Ricci, Carol R. Glass, Diane B. Arnkoff, and Rolando J. Díaz, Worry, Optimism, and Expectations as Predictors of Anxiety and Performance in the First Year of Law School, 30 Cognitive Therapy & Res. 667 (2006).

15. Test Anxiety: Theory, Research, and Applications (Irwin G. Sarason ed., Hillsdale, NJ, 1980); Charles D. Spielberger, Conceptual and Methodological Issues in Anxiety Research, *in* Anxiety 481 (Charles D. Spielberger ed., New York, 1972).

16. See Irwin G. Sarason, Stress, Anxiety, and Cognitive Interference: Reactions to Tests, 46 J. Personality & Soc. Psychol. 929 (1984); Bettina Seipp. Anxiety and Academic Performance: A Meta-Analysis of Findings, 4 Anxiety Res. 27 (1991).

17. Jeri D. Wine, Test Anxiety and Direction of Attention, 76 Psychol. Bull. 92 (1971); Jeri D. Wine, Cognitive-Attentional Theory of Test Anxiety, *in* Test Anxiety: Theory, Research, and Applications 349 (Irwin G. Sarason ed., Hillsdale, N.J., 1980).

18. Birenbaum and Nasser, On the Relationship Between Test Anxiety and Test Performance, *supra* note 9; John H. Mueller, M.J. Elser and D.N. Rollack, Test Anxiety and Implicit Memory, 31 Bull. Psychonomic Soc'y 531 (1993).

of debilitating test anxiety on medical students and physicians who fail professional examinations, the current study is the first attempt to discover how test anxiety specifically relates to performance on the bar exam.[19]

Over the past forty years, there has been an increased interest in studying the relationship between personality traits and academic performance, with at least three studies conducted using law students.[20] The gold standard of personality theory is the Big Five model,[21] which has been used extensively in other academic and job success situations but has never been applied to law school performance or the bar examination. In the Big Five model, personality is comprised of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Neuroticism refers to high degrees of emotional instability, and higher levels of neuroticism are linked with a predisposition to psychological distress.[22] Some research suggests a link between neuroticism and lower academic performance and performance motivation in undergraduates.[23] However, this finding has not been consistent across studies.[24]

Extraversion is the preference for interpersonal interaction, activity, need for stimulation, and ability to experience joy.[25] Extraversion was found to correlate inversely with academic performance in college[26] and with performance in the first pre-clinical year among a sample of medical students.[27] Openness

19.   Douglas H. Powell, Behavioral Treatment of Debilitating Test Anxiety Among Medical Students, 60 J. Clinical Psychol. 853 (2004).

20.   Y. M. Leong, Carol R. Glass, Diane B. Arnkoff, Rolando J. Díaz, and Hoorie I. Siddique, Gender and Sex-Role Identity Predict Law School Performance and Experiences, Poster session presented at the annual meeting of the American Psychological Association (August 1998). See also Paul Van R. Miller, Personality Differences and Student Survival in Law School, 19 J. Legal Educ. 460 (1966); Vernellia R. Randall, The Meyers-Briggs Type Indicator: First Year Law Students and Performance, 26 Cumb. L. Rev. 1 (1995).

21.   Robert R. McCrae and Paul T. Costa, Jr., A Five-Factor Theory of Personality, *in* Handbook of Personality: Theory and Research 139 (Lawrence A. Pervin and Oliver P. John eds., New York, 1999).

22.   Personality Disorders and the Five-Factor Model of Personality (Paul T. Costa, Jr. and Thomas A. Widiger eds., Washington, D.C., 1994).

23.   Chamorro-Premuzic and Furnham, Personality Predicts Academic Performance, *supra* note 9; see also Timothy A. Judge, Relationship of Personality to Performance Motivation: A Meta-Analytic Review, 87 J. Applied Psychol. 797 (2002); Manuel Marin Sánchez, Eduardo Infante Rejano, and Yolanda Troyano Rodriguez, Personality and Academic Productivity in the University Student, 29 Soc. Behav. & Personality 299 (2001).

24.   Stephen J. Dollinger and Lisa A. Orf, Personality and Performance in "Personality": Conscientiousness and Openness, 25 J. Res. in Personality 276 (1991); Elizabeth K. Gray and David Watson, General and Specific Traits of Personality and Their Relation to Sleep and Academic Performance, 70 J. Personality 177 (2002).

25.   Personality Disorders, *supra* note 22.

26.   Tomas Chamorro-Premuzic and Adrian Furnham, Personality Traits and Academic Examination Performance, 17 European J. of Personality 237 (2003).

27.   Filip Lievens, Pol Coetsier, Filip De Fruyt, and Jan De Maeseneer, Medical Students'

to experience is the ability to seek and appreciate experiences, and be curious, imaginative, and willing to consider new ideas and values.[28] Openness has been shown to predict course grades and test performance in college, as well as performance in certain years of medical school, but not performance on essay exams.[29] Agreeableness, or the tendency to be compassionate, has not been consistently linked to academic or job success.[30]

The strongest link between the Big Five personality traits and achievement appears to be between conscientiousness and both academic and job success. Conscientiousness measures the degree to which a person is organized, persistent, and goal-directed.[31] It has been found to predict better undergraduate academic performance,[32] higher medical school grades,[33] success in graduate school,[34] and enhanced job performance and performance motivation.[35]

A final psychological variable that could influence bar exam performance is time management. In general terms, effective time management can be described as developing and following a plan of action, working at an organized and comfortable pace, giving appropriate attention to high-priority tasks, and devoting adequate time to leisure activities.[36] Time-management ability correlates with academic performance and college GPA and may account for more variance in predicting GPA than do SAT scores.[37] Wangerin suggests

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    Personality Characteristics and Academic Performance: A Five-Factor Model Perspective, 36 Med. Educ. 1050 (2002).

28.   Personality Disorders, *supra* note 22.

29.   Dollinger and Orf, Personality and Performance, *supra* note 24; see also Lievens et al., Medical Students' Personality Characteristics, *supra* note 27.

30.   Murray R. Barrick and Michael K. Mount, The Big Five Personality Dimensions and Job Performance: A Meta-Analysis, 44 Personnel Psychol. 1 (1991); Gray and Watson, General and Specific Traits, *supra* note 24.

31.   Costa, Jr. and Widiger, Personality Disorders, *supra* note 22.

32.   Chamorro-Premuzic and Furnham, Personality Predicts Academic Performance, *supra* note 9; Dollinger and Orf, Personality and Performance, *supra* note 24; Gray and Watson, General and Specific Traits of Personality, *supra* note 24.

33.   Eamonn Ferguson, Andrea Sanders, Fiona O'Hehir and David James, Predictive Validity of Personal Statements and the Role of the Five-Factor Model of Personality in Relation to Medical Training, 73 J. Occupational & Organiz. Psychol. 321 (2000); Lievens et al., Medical Students' Personality Characteristics, *supra* note 27.

34.   John M. Digman, Five Robust Trait Dimensions: Development, Stability, and Utility, 57 J. Personality 195 (1989).

35.   Barrick and Mount, The Big Five Personality Dimensions, *supra* note 30; Judge, Relationship of Personality to Performance Motivation, *supra* note 23.

36.   Brandon L. Hall and Daniel E. Hursch, An Evaluation of the Effects of a Time Management Training Program on Work Efficiency, 3 J. Organiz. Behav. Mgmt. 73 (1981).

37.   Amy Gortner Lahmers and Carl R. Zulauf, Factors Associated with Academic Time Use and Academic Performance of College Students: A Recursive Approach, 41 J. College Student Dev. 544 (2000); Therese Hoff Macan, Comila Shahani, Robert L. Dipboye, and Amanda

that law students who schedule their time and conscientiously follow those schedules tend to study more efficiently and receive better grades,[38] although the impact of such time-management skills on bar exam performance has yet to be explored.

With bar exam performance being relatively overlooked in the legal, psychological, and educational fields, the present investigation is likely the most ambitious attempt yet to uncover predictors of success on the bar exam. The results could lead to specific recommendations for law schools on how to provide improved counseling or educational services to their students and alumni as they prepare for the bar exam. We predicted that law school graduates who tend to experience higher levels of pathological worry, test anxiety, neuroticism, and extraversion would be more likely to have failed the bar exam. Conversely, we anticipated that law school graduates with better time-management skills and higher levels of conscientiousness and openness would be more likely to have passed the bar exam. Finally, graduates with higher LSAT scores and better LGPAs would be more likely to have passed the exam. The role of factors such as gender, ethnicity, employment during bar exam preparation, review courses taken, and recall of anxiety experienced prior to and during the test were also assessed.

Method

Questionnaires were mailed to 1,397 alumni representing five consecutive graduating classes (1998 through 2002) from a religiously affiliated, urban law school. Approximately 18 percent of these alumni (204 of the full-time day students and 54 of the part-time evening students) returned completed packets. Of the 258 participants, 121 (46.9 percent) were men, 135 (52.3 percent) were women, and 2 (.8 percent) did not indicate their gender. Their undergraduate grade point average (UGPA) ranged from 1.93 to 4.00 ($M = 3.06$, $SD = 0.40$) on a four-point scale, and LGPA ranged from 2.17 to 4.00 ($M = 3.09$, $SD = 0.33$). The mean LSAT score was 153.86.

The sample was predominantly Caucasian (86.4 percent), but also included African Americans (5.8 percent), Hispanics (3.9 percent), Asians/Pacific Islanders (2.7 percent), and others (1.2 percent). A majority of the participants were Roman Catholic (54.3 percent), although Protestants (25.1 percent), Jews (4.7 percent), "Other" (3.9 percent), and those with no religious preference (11.8 percent) were also represented. Approximately 51.8 percent of the participants were married or living as married, 5.4 percent were divorced or separated, and 42.4 percent had never been married; 11 percent had children at the time of the bar exam. Participants ranged in age from 25 to 70, and the mean age of the sample was 31.9 years ($SD = 6.71$).

Peek Phillips, College Students' Time Management: Correlations with Academic Performance and Stress, 82 J. Educ. Psychol. 760 (1990); Bruce K. Britton and Abraham Tesser, Effects of Time-Management Practices on College Grades, 83 J. Educ. Psychol. 405 (1991).

38.   Paul T. Wangerin, Learning Strategies for Law Students, 52 Alb. L. Rev. 471 (1988).

Our sample represents the population of law students graduating from this institution during the chosen years in terms of demographic variables and LSAT scores. Of the 1,397 alumni who constituted the five classes sampled for this study, 50.64 percent were men and 49.36 percent were women. Approximately 81.92 percent were Caucasian, 10.22 percent were African American, 3.62 percent were Hispanic, and 4.24 percent were Asian. Their mean LSAT score was 153.12.

Procedure

The researchers sent all members of the 1998 through 2002 graduating classes materials for this study: the questionnaire booklet, a letter from the law school's Associate Dean for Academic Affairs encouraging participation, a letter from the researchers explaining the purpose of the study, and two copies of an informed consent sheet. Participants were asked to sign both copies of the consent form and keep one for their records, to complete each measure, and then to return the packets to the Psychology Department in a stamped, pre-addressed envelope, all of which was estimated to take twenty-five to thirty minutes. To alleviate potential concerns, participants were identified only by a code number and they were reminded that the law school would never have access to individual responses. After obtaining needed academic information from the law school, the list matching identification numbers and names was destroyed.

The questionnaire booklet included a measure of relevant background information, a well-known measure of personality factors, and self-report inventories of worry, test anxiety, and time-management behavior. It also contained a measure that was not part of the current investigation, which asked for narrative responses to open-ended questions. Two different sequential orders of questionnaires were used to control for order effects.

Measures

Background questionnaire. Designed by the researchers with input from law school faculty and administrators, this two-page measure requested demographic information such as gender, age, ethnic background, income level, religious affiliation, marital status, number and ages of children, and degrees received since college graduation. Additional questions focused on aspects of the law school experience, including participation in law school programs, selected area of specialization, hours studied each day, graduation year, and student status (day versus evening). Others addressed the perceived level of preparation for the bar exam, including review courses taken and their utility, number of practice exams completed, and hours of employment just prior to the bar exam. A final set of questions used a seven-point Likert rating scale to inquire about bar exam experiences such as confidence in performance and anxiety felt. Participants were asked to record the date of each bar exam attempt, the state(s) in which they had taken the test, the scores received, and whether or not they had passed each administration.

NEO Five-Factor Inventory (NEO-FFI). The NEO-FFI is a shortened version (sixty questions) of the 240-item NEO-Personality Inventory-Revised, developed from the item pool of the NEO-PI-R using factor analytic methods.[39] The NEO measures the five broad domains of personality using the Big Five model. Participants rate how much they agree or disagree with the items on a five-point scale from strongly disagree to strongly agree.

Penn State Worry Questionnaire (PSWQ). The PSWQ[40] is a frequently used, self-report trait measure of pathological worry.[41] It contains sixteen items, each rated on a 1 ("not at all typical of me") to 5 ("very typical of me") Likert-type scale. Numerous studies have demonstrated that the PSWQ possesses very high degrees of internal-consistency and test-retest reliability in both university and anxiety-disordered samples.[42] Regarding convergent validity, the PSWQ has been shown to correlate substantially with other self-report worry measures.[43]

Test Anxiety Inventory-Short Form (TAI-5). The TAI-5[44] is a five-question version of the twenty-item Test Anxiety Inventory,[45] one of the most widely utilized self-report surveys of test anxiety as a situation-specific trait. Studies of test-retest reliability, internal consistency, concurrent validity, and construct validity support the use of the TAI, and scores on the short form correlate highly ($r = .94$) with the full-length TAI.[46] Participants indicate how frequently they experience particular symptoms of test anxiety on a scale ranging from 1 ("almost never") to 4 ("almost always"). Preliminary analyses suggest that the TAI-5

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39. Paul T. Costa, Jr. and Robert R. McCrae, NEO Personality Inventory–Revised (NEO-PI-R) Professional Manual (Lutz, Fla., 2000), and NEO Five-Factor Inventory (NEO-FFI) (Lutz, Fla., 2003).

40. T.J. Meyer, M.L. Miller, R.L. Metzger, and Thomas D. Borkovec, Development and Validation of the Penn State Worry Questionnaire, 28 Behav. Res. & Therapy 487 (1990).

41. Silvia Molina and Thomas D. Borkovec, The Penn State Worry Questionnaire: Psychometric Properties and Associated Characteristics, *in* Worrying, *supra* note 12.

42. See, e.g., Timothy A. Brown, Martin M. Antony, and David H. Barlow, Psychometric Properties of the Penn State Worry Questionnaire in a Clinical Anxiety Disorders Sample, 30 Behav. Res. & Therapy 33 (1992); Meyer et al., Development and Validation of the Penn State Worry Questionnaire, *supra* note 40.

43. Joachim Stöber, Reliability and Validity of Two Widely-Used Worry Questionnaires: Self-Report and Self-Peer Convergence, 24 Personality & Individual Differences 887 (1998).

44. Joanne Taylor and Frank P. Deane, Development of a Short Form of the Test Anxiety Inventory (TAI), 129 J. Gen. Psychol. 127 (2002).

45. Charles D. Spielberger, H.P. Gonzalez, C.J. Taylor, B. Algaze, and W.D. Anton, Examination Stress and Test Anxiety, *in* Stress and Anxiety 167 (Charles D. Spielberger and Irwin G. Sarason eds., New York, 1978).

46. Taylor and Deane, Development of a Short Form of the Test Anxiety Inventory, *supra* note 44.

has high internal consistency and correlates with other anxiety measures in a manner similar to the full-length version.[47]

Time Management Behavior Scale (TMB). The TMB[48] is a self-report instrument that measures individuals' use of time-management strategies in their work environments and perceptions of control over their time.[49] Each of the thirty-four items is rated on a five-point, Likert-type scale ranging from A ("seldom true") to E ("very often true"). Negatively worded statements are reverse-scored so that higher scores represent more frequent use of time management behaviors. Four meaningful sub-scales emerged from a factor analysis of responses on the TMB: setting goals and priorities, mechanics of time management, preference for organization, and perceived control of time.[50] Individuals scoring high on the TMB also tend to have higher scores on measures of Type-A personality, life/job satisfaction, and academic performance, as well as lower scores on measures of stress.[51]

Educational variables. With the participants' consent, the law school provided academic data for each former student, including UGPA, LGPA, LSAT score, and class rank.

Results

Bar Exam Passage Rates

Of the 258 law school graduates who returned completed questionnaire packets, 203 (78.7 percent) passed the bar exam on their first attempt, 51 (19.8 percent) failed, and 4 (1.6 percent) did not indicate whether they had passed or failed. Among those who failed their first exam, 26 (51.0 percent) passed on their second bar exam attempt, 16 (31.4 percent) failed again, and 9 (17.6 percent) did not indicate whether they had passed or failed.

Psychological Variables

First bar exam attempt. To determine the relationships between the psychological variables and performance on the first bar exam taken, independent samples t-tests were used (see Table 1). The level of dispositional test anxiety reported by those who passed the bar exam on their first attempt was significantly lower than that reported by those who failed. When LGPA was entered on the first step of a logistic regression and test anxiety was entered on the second step, even after controlling for LGPA, test anxiety continued to relate significantly

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47. *Id.*

48. Macan et al., College Students' Time Management, *supra* note 37.

49. Therese Hoff Macan, Time Management: Test of a Process Model, 79 J. Applied Psychol. 381 (1994).

50. Macan et al., College Students' Time Management, *supra* note 37.

51. William E. Kelly, No Time to Worry: The Relationship Between Worry, Time Structure, and Time Management, 35 Personality & Individual Differences 1119 (2003).

to first-time bar exam failure. Additionally, how confident graduates said they felt immediately after completing the first bar exam was significantly higher for those who passed the test than it was for those who failed.

Dispositional worry did not differ significantly between graduates who passed and failed. There was also no significant difference between those who passed and those who failed their first bar exam in the amount of time management practiced, the level of confidence and anxiety experienced the night before the first bar exam, or the level of anxiety felt during the test, although means were in the expected direction. There was no significant difference between those passing and those failing their first bar exam on their setting of goals and priorities, mechanics of time management, preference for organization, or perceived control of time.

Finally, as predicted, those who passed the bar exam had significantly lower scores on the personality factor of neuroticism compared to those who failed. Contrary to prediction, openness to experience, extraversion, and conscientiousness were not significantly related to bar exam passage (although conscientiousness showed a near-significant trend to correlate significantly with LGPA, $r(230) = .12$, $p = .059$). When LGPA was entered on the first step of a logistic regression and neuroticism on the second, neuroticism continued to contribute significantly to the prediction of bar exam passage.

Second bar exam attempt following a first-time failure. As with the first bar exam attempt, the level of test anxiety of graduates who failed on both occasions was significantly higher than that of individuals who passed the bar exam on their second try (see Table 1). When LGPA was entered on the first step of a logistic regression and test anxiety was entered on the second step, LGPA was not a significant predictor, while test anxiety was still associated significantly with second-time bar exam failure, $p = .011$. However, none of the other psychological variables was related significantly to the passage of a second bar exam following an initial failure.

Educational Variables

First bar exam attempt. T-tests were used to assess the relationships between educational variables and performance on a first bar exam (see Table 2). Not surprisingly, the LGPA and LSAT scores of takers who passed the bar exam on their initial attempt were significantly higher than the scores of those who failed their first bar exam, though UGPA did not differ significantly between these groups. Also, the law school class rank of graduates who passed the bar exam on their first try was significantly better than that of graduates who failed on their first effort. The number of hours studied per day during the third year of law school (and also the fourth year for evening students), but not study time during the first two years, was significantly lower for those graduates who passed their first bar exam than for those who failed initially.

Graduates who took a bar review course and passed the exam on their first try rated their review course as significantly more helpful than did those who

took a course and failed the exam. Also, the number of practice tests taken prior to the first bar exam was significantly higher for first-time passers than it was for graduates who failed. The number of hours employed per week during the two months prior to the bar exam, although higher for those who failed, did not differ significantly between graduates who passed and those who failed their first bar exam.

Second bar exam attempt following a first-time failure. As with the first bar exam attempt, law school graduates who passed after their second attempt rated their bar exam review course as significantly more helpful than did graduates who failed both their first and second bar exam tries (see Table 2). None of the other educational variables related significantly to second-time bar exam performance following a first-time failure in this much smaller sample.

Demographic Variables

First bar exam attempt. Chi-square analyses were conducted to determine the relationship between demographic variables and performance on the first bar exam taken (see Table 3). A significantly greater percentage of Caucasians passed the bar exam on their initial attempt than did those from other ethnic groups. However, when LGPA score was entered on the first step of a logistic regression and ethnicity was entered on the second step, ethnicity ceased to associate significantly with first-time bar exam failure after controlling for LGPA, $p = .20$. There were no significant differences between the passage rates of day and evening students or between men and women. Similarly, age, marital status, and the presence of children in the house at the time of the first bar exam were not significantly associated with bar exam passage. The year in which the participants graduated from law school also failed to relate significantly to bar exam passage.

Second bar exam attempt following a first-time failure. Chi-square analyses were performed to elucidate the relationship between the demographic variables and performance on a second bar exam attempt following an initial failure (see Table 3). A significantly greater percentage of women passed the second time compared to men. Unlike the findings for first bar exam attempts, ethnicity did not significantly relate to bar exam performance. Additionally, there were no significant differences between the passage rates of day and evening students, and year of graduation, marital status, age, and the presence of children in the household were also not significantly related to second-time bar exam passage after an initial failure.

Discussion

The current study addresses whether certain psychological, educational, and demographic variables relate to bar exam performance and is the first to explore how psychological variables may affect the likelihood of bar exam passage. The findings indicate that, even after taking LGPA into account, having greater dispositional test anxiety was debilitating to bar exam performance. The highest levels of test anxiety were experienced by

graduates who had failed on both occasions. In fact, test anxiety, but not LGPA, was predictive of failing on a second attempt at the bar exam after an initial failure. The present study also found a moderate association between higher test anxiety and lower LGPA. Powell reports case studies and clinical experiences demonstrating the debilitating effects of test anxiety on medical licensing examination performance.[52] He suggests that anxiety could affect both preparation and performance on this exam, which, like the bar, has enormous implications for the taker's future.

Although graduates who passed the bar exam could feel relieved and, therefore, later report having less test anxiety compared to those who failed, the TAI-5 was designed to measure dispositional tendencies across exam situations and includes nothing specific to the bar exam experience. The possible influence of test anxiety on bar exam performance is important for law schools to note, especially because there are several effective interventions. Sarason found that social support was a helpful strategy, while Becker claimed that over-learning, or studying material to the point of mastery, could quell test anxiety.[53] Over-learning may not be practical, though, given the amount of material one must study during bar exam preparation.

Cognitive-behavioral therapies are the most frequently used treatments for test anxiety.[54] Books on test anxiety by Sapp, Spielberger and Vagg, and Zeidner describe empirically supported procedures and suggest that systematic desensitization, cognitive restructuring, stress inoculation training, relaxation therapy, cognitive-behavior modification, and cognitive-behavioral hypnosis can successfully combat test anxiety.[55] In his work with medical school students, Powell utilized progressive relaxation, systematic desensitization, the self-control triad (thought stopping and covert reinforcement), behavioral rehearsal, and psychoeducational techniques to alleviate test anxiety and help improve licensing exam performance.[56] Perhaps staff from university counseling centers could help design and conduct short-term cognitive-behavioral workshops for law students who experience high dispositional test anxiety, which could be cost-effective and affect bar exam passage rates.

52.   Powell, Behavioral Treatment, *supra* note 19.

53.   Irwin G. Sarason, Test Anxiety, Stress, and Social Support, 41 J. Personality 101 (1981); Peter Becker, Fear Reactions and Achievement Behavior of Students Approaching an Examination, *in* Achievement, Stress and Anxiety 275 (Heinz W. Krohne and Lothar Laux eds., Washington, D.C., 1982).

54.   See Georgiana Schick Tryon, The Measurement and Treatment of Test Anxiety, 50 Rev. Educ. Res. 343 (1980).

55.   Marty Sapp, Test Anxiety: Applied Research, Assessment, and Treatment Interventions (2nd ed., Lanham, Md., 1999); Charles D. Spielberger and Peter R. Vagg, Test Anxiety: Theory, Assessment, and Treatment (Washington, D.C., 1995); Moshe Zeidner, Test Anxiety: The State of the Art (New York, 1998).

56.   Powell, Behavioral Treatment, *supra* note 19.

Contrary to our hypotheses, pathological worry was not significantly related to performance on the bar exam, and time-management ability and its components also failed to predict bar exam passage, although dispositional worry was related to ratings of anxiety the night before and during the bar exam. Previous work suggested that these psychological variables impact undergraduate academic and test performance.[57] However, the bar exam is different in that it is a professional licensing exam administered only to those who have already successfully completed law school. Better time management and less worry were significantly related to higher ratings of confidence the night before the bar exam, and, as would be expected, graduates who rated themselves as more confident immediately after taking their first bar exam were more likely to have passed. This question was retrospective, so it is possible that graduates who passed their initial bar exam may remember feeling more confident than they really were at the time.

Results also suggest a small but significant negative relationship between neuroticism and first-time bar exam passage, even after taking LGPA into account, which is consistent with some extant literature on the relationship between neuroticism and other measures of academic performance.[58] Neuroticism also correlated significantly and inversely with LSAT scores. The greater likelihood of bar examination failure among those with higher neuroticism scores may be related to the link between neuroticism and difficulties in performance motivation[59] and goal-setting motivation.[60] Neuroticism is typically correlated with being anxious, sad, angry, emotional, and worried,[61] although these specific features were not measured in the present study. As with test anxiety, law students preparing for the bar examination who are struggling with these negative emotions possibly could benefit from counseling services geared at reducing such mood and anxiety symptoms.[62] Additional research is needed to determine whether this correlational relationship between bar examination failure and neuroticism is mediated by depression and anxiety, and whether this is a causal relationship.

Analyses of the educational variables indicate that those who passed the bar exam on their initial attempt had significantly better LGPAs, class ranks, and LSAT scores than did those who failed, with regression analyses showing

57. Gortner Lahmers and Zulauf, Factors Associated With Academic Time Use, *supra* note 37.

58. Chamorro-Premuzic and Furnham, Personality Predicts Academic Performance, *supra* note 9; Marin Sánchez et al., Personality and Academic Productivity, *supra* note 23.

59. Judge, Relationship of Personality to Perormance Motivation, *supra* note 23.

60. John Malouff, Nicola Schulle, Melissa Bauer, and Devona Mantelli, Development and Evaluation of a Measure of the Tendency to be Goal Oriented, 11 Personality & Individual Differences 1191 (1990).

61. Barrick and Mount, The Big Five Personality Dimensions, *supra* note 30.

62. Sheehy and Horan gave stress inoculation training to first-year law students and saw significant decreases in anxiety and stress. Richard Sheehy and John J. Horan, Effects of Stress Inoculation Training for 1st-Year Law Students, 11 Int'l J. Stress Mgmt. 41 (2004).

LGPA to be a stronger predictor of bar exam performance than LSAT. These findings are similar to those of Wightman, who found that LSAT score and especially LGPA were highly predictive of bar exam passage.[63] Klein and Bolus state that LGPA explains around 50 percent of the variance in bar exam scores compared to 15 percent for the LSAT.[64] Thus, law students who have performed poorly on the LSAT and/or in law school may benefit from additional services such as bar exam review classes[65] and other interventions to increase their mastery of the law. Somewhat surprisingly, there was virtually no association between UGPA and either first- or second-time bar exam performance in the present study, and additional analyses revealed that UGPA was also not significantly related to LGPA. Additional research is necessary because other work has found that UGPA can predict law school performance,[66] and Klein and Bolus say that UGPA explains about 4 percent of the variance in LGPA.[67] Future studies should also address why, for graduates who failed initially, LGPA, class rank, and LSAT score did not significantly predict second-time bar exam passage. It is possible that psychological variables play a greater role at this time than do these educational variables.

The number of practice tests taken prior to their first bar exam related significantly to first-time performance, but, as would be expected, not to second-time performance following an initial failure. In fact, on average, graduates who passed the bar exam on their first try took almost twice as many practice tests as did those who failed. Although based on correlational results, this suggests that completing practice exams could be an effective method of bar exam preparation that law schools should promote. Law schools may also want to continue encouraging their students to enroll in bar exam review courses because the rated helpfulness of a review class was significantly related to performance on a first bar exam, as well as to passage on a second attempt after a failure. However, because this study was retrospective, passing the bar exam may lead graduates to remember their review courses as more helpful than they thought at the time of their completion.

Hours of employment per week in the two months prior to taking a first bar exam did not relate significantly to first-time passage or to second-time passage following a failure, although the mean number of hours worked per week by

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63. Linda F. Wightman, LSAC National Longitudinal Bar Passage Study, *supra* note 7.

64. Klein and Bolus, The Size and Source of Differences in Bar Exam Passing Rates, *supra* note 6.

65. Richard Cabrera, Working to Improve: A Plan of Action for Improving the Bar Exam Pass Rate, 27 Wm. Mitchell L. Rev. 1169 (2000).

66. Rolando J. Díaz, Carol R. Glass, Diane B. Arnkoff, and Marian Tanofsky-Kraff, Cognition, Anxiety, and Prediction of Performance in 1st-Year Law Students, 93 J. Educ. Psych. 420 (2001); Donald E. Powers, Long-term Predictive and Construct Validity of Two Traditional Predictors of Law School Performance, 74 J. Educ. Psych. 568 (1982).

67. Klein and Bolus, The Size and Source of Differences in Bar Exam Passing Rates, *supra* note 6.

those graduates who failed their initial bar exam was approximately 19 percent higher than the mean number of hours worked by those who passed. Furthermore, the mean number of hours worked per week by graduates who failed both their first and second bar exam attempts was approximately 78 percent higher than the mean number of hours worked by those who passed on their initial try, and 54 percent greater than those who passed the second time. The number of participants who failed twice was small, however. Future research should explore this finding with a larger sample that includes more individuals who have failed the bar exam.

The results indicated a significant relationship between ethnicity and first-time passage, with the Caucasian pass rate being higher than that of other ethnic groups. This finding should be interpreted with caution, since controlling for LGPA (or LSAT score) made this relationship no longer significant; the difference in law school performance between these groups, and not ethnicity itself, was the important predictor. Similarly, Klein and Bolus have emphasized that data show similar probabilities of passing the bar exam for white and minority applicants with similar LGPAs, suggesting that law school performance is the crucial variable.[68] Among those graduates who failed the bar exam on their first attempt, there was no significant relationship between ethnicity and second-time performance, even without controlling for LGPA. The passage rates of minority groups increased the second time, replicating the finding by Wightman that the differences in eventual passage rates of minorities compared to whites is smaller than when first-time outcomes are considered.[69]

Unlike the Wightman study, which uncovered no differences of "practical significance" in bar exam passage rates of men and women (although there was a statistically significant difference favoring men), our data revealed that, among those graduates who failed the exam initially, women passed on their second attempt with significantly greater frequency than did men. This pattern occurred with first-time bar exam performance as well, but the difference was not statistically significant. Earlier research on the law school experience has suggested that women tend to score lower on the LSAT[70] and frequently encounter biases that can negatively affect their psychological and academic status.[71] In our study, there were no significant gender differences in LSAT performance, and after taking LSAT scores into account, the relationship between gender and second-time bar exam passage showed only a trend toward significance. On average, women in our sample had significantly higher LGPAs than did men, and after

68. *Id.*

69. Wightman, LSAC National Longitudinal Bar Passage Study, *supra* note 7.

70. Linda F. Wightman, An Examination of Sex Differences in LSAT Scores from the Perspective of Social Consequences, 11 Applied Measurement in Educ. 255 (1998).

71. Lani Guinier, Michelle Fine, Jane Balin, Ann Bartow, and Deborah Lee Stachel, Becoming Gentlemen: Women's Experiences at One Ivy League Law School, 143 U. Pa. L. Rev. 1 (1994); Daniel N. McIntosh, Julie Keywell, Alan Reifman, and Phoebe C. Ellsworth, Stress and Health in First-Year Law Students: Women Fare Worse, 24 J. Applied Soc. Psychol. 1474 (1994).

controlling for LGPA, the significant relationship between gender and second-time bar exam performance remained intact. These results suggest that gender differences in second-time bar exam performance after an initial failure may be, in part, a function of LSAT scores, but future work needs to clarify this issue since our findings regarding gender differences in LSAT performance do not concur with previous research.

This study yielded results that may help law schools and aspiring lawyers understand the psychological, educational, and demographic factors that affect bar exam performance. It should be noted, however, that the study was entirely retrospective, meaning that graduates who, in some cases, had taken the exam several years ago had to remember what their experiences were like. Recall accuracy could have been influenced by the outcome of the test, as could simple forgetting over time. Future research should begin while students are still in law school and follow them as they graduate and begin the process of preparing for and taking the bar exam. This approach would also provide a larger group of graduates who have failed the bar exam on one or more occasions, so that greater focus could be placed on their psychological characteristics.

The present study was the first to use a range of psychological variables to predict bar exam passage. Of greatest importance is the finding that test anxiety and neuroticism, which are treatable, had a significant relationship with performance on the exam. Thus, this study can serve as a foundation for future investigations of how psychological factors influence bar exam performance and how counseling programs for law students could improve bar exam passage rates.[72]

72.   We do hope that the success of our collaboration between a psychology department and a law school will encourage future partnerships between these professions.

Table 1

Means and t-tests for Psychological Variables According to Bar Passage and Failure

	First Bar Attempt			Second Bar Attempt		
	Pass (*M*)	Fail (*M*)	*t*-test	Pass (*M*)	Fail (*M*)	*t*-test
Worry	46.38	48.59	-.86	44.96	48.75	-.83
Test Anxiety	33.95	43.52	-3.93***	34.72	50.50	-3.83***
Neuroticism	17.65	21.24	2.49*	18.83	22.08	.95
Extraversion	30.77	30.71	-.08	31.58	30.92	-.43
Openness	30.43	31.36	.96	30.58	33.15	1.34
Agreeableness	31.73	32.96	1.22	34.12	31.77	-1.27
Conscientiousness	32.64	32.33	-.33	33.04	32.46	-1.21
Time Management	117.71	114.58	1.06	115.40	111.94	.68
Goals/Priorities	3.35	3.18	1.35	3.17	3.14	.10
Mechanics	3.19	3.15	.37	3.10	3.20	-.44
Organization	4.01	3.92	.86	4.02	3.68	1.52
Time Control	3.41	3.42	-.04	3.58	3.08	1.95
Confidence Prior	4.41	4.03	1.74	3.96	4.16	-.43
Confidence After	4.32	3.58	2.90**	3.38	3.80	-.81
Anxiety Prior	4.77	5.06	-1.58	5.12	5.44	-.81
Anxiety During	4.06	4.32	-1.03	4.08	4.44	-.85

Note. First bar attempt *n* = 254 (203 passed and 51 failed) and second bar attempt after initial failure *n* = 42 (26 passed and 16 failed). Goals/Priorities = setting goals and priorities; Mechanics = mechanics of time management; Organization = preference for organization; Time Control = perceived control of time; Confidence Prior = recalled confidence night before first exam rated on 7-point Likert scale, where "7" indicates totally confident; Confidence After = recalled confidence immediately following first bar exam rated on 7-point Likert scale, where "7" indicates totally confident; Anxiety Prior = recalled anxiety night before first bar exam rated on 7-point Likert scale, where "7" indicates totally anxious; Anxiety During = recalled anxiety during first bar exam rated on 7-point Likert scale, where "7" indicates totally anxious.

$*p < .05.$ $**p < .01.$ $***p < .001.$

Table 2

Means and *t*-tests for Educational Variables According to Bar Passage and Failure

	First Bar Attempt			Second Bar Attempt		
	Pass (*M*)	Fail (*M*)	*t*-test	Pass (*M*)	Fail (*M*)	*t*-test
LGPA	3.15	2.83	6.56***	2.90	2.75	1.64
Class Rank	68.14	120.04	-6.08***	114.76	128.67	-.77
UGPA	3.07	3.02	.69	3.04	3.00	.34
LSAT[a]	154.58	151.13	4.50***	151.64	150.60	.60
Study Hrs 1st Yr	4.92	4.93	-.04	5.28	4.15	1.30
Study Hrs 2nd Yr	4.23	4.57	-.81	5.00	3.54	1.60
Study Hrs 3rd Yr	3.48	4.24	-1.98*	4.64	3.00	1.75
Study Hrs 4th Yr[b]	2.76	5.00	-2.54**	7.75	2.33	1.56
Job Hours	9.30	11.06	-.63	10.77	16.60	-.95
Review Class	6.15	4.61	7.15***	4.92	3.80	2.42*
Practice Tests	5.24	2.80	3.57***	2.50	2.38	.19

Note. First bar attempt $n = 254$ and second bar attempt after initial failure $n = 42$.

LGPA = Law School Grade Point Average; UGPA = Undergraduate Grade Point Average; LSAT = Law School Admission Test; Study Hrs = hours studied per day; Yr = year of law school; Job Hours = hours employed per week 2 months prior to first bar exam; Review Class = helpfulness of first bar review course rated on a 7-point Likert scale, where "7" indicates extremely helpful; Practice Tests = number of practice tests taken before first bar exam.

[a]Mean LSAT score used if test taken more than once.

[b]Only includes evening law students.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

Relationships Between Demographic Variables and Bar Passage

	First Bar Attempt			Second Bar Attempt		
	% Pass	% Fail	χ^2	% Pass	% Fail	χ^2
Student Type			.06			1.29
Day	79.60	20.40		65.70	34.30	
Evening	81.10	18.90		42.90	57.10	
Gender			2.37			5.30*
Male	75.80	24.20		45.50	54.50	
Female	83.60	16.40		80.00	20.00	
Ethnicity			6.27**			.37
Caucasian	82.40	17.60		59.40	40.60	
Other	63.60	36.40		70.00	30.00	
Marital Status[a]			.70			.96
Single	80.40	19.60		57.70	42.30	
Married	78.30	21.70		66.70	33.30	
Divorced	83.30	16.70		100.00	0.00	
Widowed	100.00	0.00		—	—	
Children[b]			1.85			.07
No	80.60	19.40		61.10	38.90	
Yes	69.20	30.80		66.70	33.30	

Note. First bar attempt n = 254 and second bar attempt after initial failure n = 42.

[a]At time of first bar exam.

[b]Living in same household at time of first bar exam.

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