

Legal and Logical Limitations in Applying Social Science to Business

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ABSTRACT

Management theories such as Maslow's Hierarchy of needs and concepts such as age, race, sex, and unconscious stereotypes, emotional intelligence, practical intelligence, competencies, and stereotype threat are reviewed. They are identified as folk theories which have been widely accepted but have limited or no scientific foundation. Regrettably, these politically correct ideas have influenced both business and legal areas. It is widely believed that concepts such as emotional intelligence and stereotypes are related to actual behavior in the workplace. In fact, these popular constructs have never been operationally measured and related to actual performance at work. Most of the studies reviewed involved college students making judgments about paper-people performing artificial tasks far removed from the workplace. Most of the folk theories have a façade of social science, but have not been subjected to the rigor of peer-reviewed scientific practice.

JEL Classification: J71, K41

Keywords: Stereotype; Discrimination; Folk theories

I. INTRODUCTION

The development of modern society and its political, legal, and social institutions has been unsteady over the past 2,500 years with which we are most familiar. In his *Open Society and Its Enemies* (1945/2003), scientist, methodologist, and social historian Sir Karl Popper describes an open society that seems to suit our liberal and democratic aspirations (Athens at its best) *versus* a closed society that does not (Sparta and its Athenian promoters, maybe Socrates and probably the mature Plato)--which in recent lifetimes has been represented by Stalin's Soviet Union, Hitler's Germany, by some of our current adversaries whom we term "Islamofascists," and in earlier centuries even by advocates of particular Christian closed societies, especially from the Crusades to the Thirty Years War (see Stone, 1988; Popper, 1945/2003; Wright, 2006; Johnson, 1976: parts 4 and 5; and Brecht, 1955/1991). Even in our modern times, even among educated people in democratic and stable nations such as the United States, there are tendencies to close off information that is uncomfortable, dissonant, or just complex. Unfortunately for those of us who teach, consult, and research in order to improve the practice of business, in any society there arise social and legal obstacles to using the theories of modern science, which are scientific and practicable only by virtue of being expressed in "falsifiable" terms and then being tested for validity and applicability (see Popper, 1935/2002; Barrett, 1972).

First among the obstacles is misidentification of what is scientifically grounded. A second obstacle is popular preference for easy, commonsense, or comfortable (politically correct) concepts, especially if they support the viewpoints of attractive or powerful clients (as encountered in work of a business or political consultant). A third obstacle is unwillingness to engage in the hard work of science and to read and digest complex information that does not have a preconceived simple thrust. Some examples follow.

Over more than two hundred years, the word "science" has been invoked to lend credibility to many psychological concepts, constructs, ideas, and speculations which in fact have no scientific basis. Despite almost total lack of empirical support for various doctrines, some have had major impact on public and private organizations, the legal system, public policy, and business (Barrett, 1972; Barrett et al., 2004). Media have helped some scientifically unsupported doctrines become "folk theories" which are believed by the general public. Unfortunately, some of these folk theories have become foundations for corporate policies, training programs, and court decisions--bearing substantial economic and emotional costs.

Establishment of folk doctrines occurred through advocates' failures to follow principles that are well understood in the sciences. For example, phrenology (evaluation of the scalp surface) was an early 1800s doctrine based on theory, but without scientific validation. Ironically, doctrine proponents including consultants and other advocates of "business innovations" often wrap themselves in the mantle of science, while ignoring all principles of the sciences: Constructs often are not reliably measured and, even if there are measurements, there usually are no analyses of validity (Barrett, 1992). Even if there is empirical research, it often uses extremely small samples, and there never is adequate replication. Such "studies" directed to the general public and to businesspersons generally did not surface in peer-reviewed scientific journals. Instead, they appeared in technical reports or trade books that are not professionally edited and

critiqued. If one requests that an advocate provide supporting evidence for reanalysis, data turn out almost always to be “unavailable.” Models proposed by advocates are *asserted* to be valid, but there is no empirical evidence to support theory validity or efficacy beyond the “creativity” of the advocate.

In Table 1, clusters of widely accepted doctrines are presented which have had substantial adverse impacts on businesses, law, and/or public policy. They are organized into: Section I. Doctrines Regarding Ability, which have to do with beliefs that indices of an individual’s cognitive ability such as IQ tests or grades are less important than common-sense concepts such as emotional or practical intelligence. Section II. Doctrines Regarding Unfair Discrimination, contesting as stereotyping the validity of tests in general and particularly for Blacks, females, and seniors. Section III. Doctrines Regarding Personality and Motivation that are unsubstantiated, ranging from phrenology to Myers-Briggs typology. Finally, Section IV. Doctrines Regarding Management, from scientific to emotional management.

Table 1
Doctrines with impacts on business, law, and public policy

I. Regarding Ability

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>I.A. Academic Tests Like the SAT, LSAT, and GRE Only Predict First Year Grades Not Success in Life</u></p> <p>McClelland DC (1973).</p> <p>Sternberg RJ (1996).</p>	<p>Cognitive ability tests don't predict important life outcomes, but competencies do predict success in life.</p>	<p>Bowen WG, Bok D (1998): ". . . the SAT score is a statistically significant predictor of rank in class for black students as well as for all students . . ." (p. 74).</p> <p>". . . the academic skills measured by the SAT scores continue to play a substantial role in predicting which undergraduates go on to attain higher degrees even after we take account of interrelationships with high school grades, socioeconomic status, and school selectivity" (p. 107).</p> <p>"In general, higher SAT scores were quite consistently associated with higher average earnings in both men and women matriculants in the '76 C&B cohort" (p. 133).</p> <p>Barrett GV, Depinet RL (1991): Review shows prediction of long-term career success. Based on test scores.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p data-bbox="337 443 589 520">I.B. <u>Grades in High School and College Don't Predict Success in Life</u></p> <p data-bbox="337 552 589 579">McClelland DC (1973).</p> <p data-bbox="337 604 589 632">Sternberg RJ (1996).</p>	<p data-bbox="589 443 911 548">Grades little value in predicting success in life. Other attributes besides academic intelligence are much more important.</p>	<p data-bbox="911 443 1279 659">Bowen WG, Bok D (1998): "There is much folk wisdom to the effect that students who receive the highest grades end up in cerebral but modestly compensated jobs, while classmates with less impressive academic records earn much higher incomes" (p.140).</p> <p data-bbox="911 688 1279 848">". . . grades . . . (measured here by rank in class) . . . correlate quite strongly and positively with levels of compensation . . . for both black and white graduates . . . and for women as well as men" (p. 140).</p> <p data-bbox="911 877 1279 1016">"On the "other things equal" basis, the typical male . . . who ranked in the top third of his class earned \$21,000 more than a man in the bottom third . . ." (p. 142).</p> <p data-bbox="911 1045 1279 1121">Barrett GV, Depinet RL (1991): Grades have a weak but positive relationship with career success.</p>
<p data-bbox="337 1157 589 1184">I.C. <u>Competencies</u></p> <p data-bbox="337 1209 589 1236">McClelland DC (1973).</p> <p data-bbox="337 1262 589 1289">Boyatzis RE (1982).</p> <p data-bbox="337 1314 589 1373">Spencer LM, Spencer SM (1993).</p> <p data-bbox="337 1398 589 1425">Peterson DR (2003).</p>	<p data-bbox="589 1157 911 1373">Belief that tests of cognitive ability are accorded too much weight, and that there are more valid competency measures with less adverse impact. Competencies are seen as more important than cognitive abilities.</p>	<p data-bbox="911 1157 1279 1316">Bingham WVD (1937): Defining competency: ". . . an individual's capacity to acquire the knowledge and skill necessary for successful achievement in a specific industrial employment or job" (p. 120).</p> <p data-bbox="911 1346 1279 1421">Barrett GV, Depinet RL (1991): No evidence competencies are valid predictors of performance.</p> <p data-bbox="911 1451 1279 1703">Barrett GV (1994): "Competency" Relevant Experience Test (cf. McClelland and Dailey, 1973) -- for evaluating qualities needed by Foreign Service Officers: "Participation in high school student government <i>plus</i> college academic record <i>minus</i> musical activities in high school and college" (p. 70).</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>I.D. IQ is not unitary. It is Multiple. At Least Seven Other Equally Important Intelligences</u></p> <p>Gardner H (1983).</p>	<p>"If there is one campaign that I'm on it's to knock out the popular notion that there is a single 'g' factor of intelligence . . . I posit the existence of seven relatively autonomous intelligences-- linguistic, logical-mathematical, spatial, musical, body-kinesthetics, intrapersonal, each with its own particular problem solving and product-making characteristics" (Gardner, 1993, p. 6).</p>	<p>Bates TC, Rock A (2004) and Barrett GV, Lueke SB (2004): There is no empirical support for Gardner's theory after over 20 years.</p> <p>Visser BA, Ashton MC, Vernon PA (2006): "... contradict Gardner's assertion that there are at least eight independent intelligence domains" (p. 501).</p>
<p><u>I.E. Practical Intelligence Provides Better Prediction of Success in Life than Cognitive Ability, with no Adverse Impact</u></p> <p>Sternberg RJ (1996).</p> <p>Sternberg RJ, Kaufman JC (1998).</p>	<p>"Major revelations: Practical intelligence predicts on-the-job performance better than does IQ for business managers, salespeople, and even college teachers"</p> <p>"Members of various ethnic groups, such as blacks and Hispanics, who typically do not do as well as whites on tests of academic intelligence, compete quite successfully in tests of creative and practical intelligence."</p> <p>"The order-filling performance of the assemblers was unrelated to measures of school performance, including intelligence-test scores, arithmetic-test scores, and grades" (Sternberg, 1996, p. 234).</p> <p>Sternberg RJ, Grigorenko EL, Kidd KK (2005): Chides those who have folk beliefs about intelligence. Claim that the construct of intelligence is ill defined. Advocate more modern theories of intelligence such as Gardner's (1983) and his concept of practical intelligence.</p>	<p>Barrett GV, Kramen AJ, Lueke SB (2003): Practical intelligence has no value.</p> <p>Scribner S (1984): Study involved five assemblers in milk plant and no measure of practical intelligence, intelligence, contra Sternberg (1996).</p> <p>McDaniel MA, Nguyen NT (2001): Just a measurement method</p> <p>Peeters H, Lievens F (2005): Situational judgment tests can be faked.</p> <p>Schmidt FL, Hunter JE (1993): Practical intelligence is just job knowledge.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>I.F. To account for "true score" and testing error put obtained test scores in a "scientifically" derived band.</u></p> <p>Dr. James Outtz's testimony in <i>Bridgeport Guardians, Inc., v. City of Bridgeport</i>, (1990; 1991).</p> <p>Azar B (1994).</p>	<p>Court accepted banding of test scores, which involves statistical procedures to declare scores in a band as equal.</p>	<p><i>Allen v. Prince George's County</i> (1982): "This court will not credit the testimony of Dr. James Outtz . . . had been hired by the county to review and improve its system for selecting employees. While continuing to do some work for the county, Dr. Outtz accepted employment by plaintiffs to assist them in this case."</p> <p>Barrett GV, Lueke SB (2004): Banding misleading the courts, because there is no evidence it reduces adverse impact.</p>
<p><u>I.G. Emotional Intelligence</u></p> <p>Goleman D (1995).</p> <p>Goleman D (1998).</p> <p>Spencer LM (2001).</p> <p>Druskat VU, Wolff SB (2001a; b).</p> <p>Goleman D, Boyatzis R, McKee, A (2002).</p>	<p>Goleman (1995): "At best, IQ contributes about 20 percent to the factors that determine life successes . . ." (p. 34).</p> <p>Goleman (1998): "By now, most executives have accepted that emotional intelligence is as critical as IQ to an individual's effectiveness" (Druskat & Wolff, 2001, p. 81).</p>	<p>Ciarrochi JV, Chan AYC, Caputi P (2000).</p> <p>Barrett, GV (2000, April).</p> <p>Barrett GV, Miguel RF, Tan JA, Hurd JM (2001).</p> <p>Barrett GV, Illingworth AJ, Rosen CC (2004).</p> <p>No evidence Emotional Intelligence relates to work behavior.</p> <p>Amelang M, Steinmayr R (2006).</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p data-bbox="337 443 589 548"><u>I.H. SES causes differences between groups, not ability, effort.</u></p> <p data-bbox="337 579 589 606">Kagan J (1998).</p> <p data-bbox="337 638 589 665">Crosby FJ (2004).</p>	<p data-bbox="589 443 911 606">Kagan (1998): "... child's IQ accounts for only 10 percent of variation in vocational success in the United States. A child's social class is more critical in America and Europe" (p. 67).</p> <p data-bbox="589 638 911 802">Crosby (2004): "When social class is considered . . . mean difference in intellectual performance between Whites and minorities is reduced and in some cases negligible" (p. 57).</p>	<p data-bbox="911 443 1279 688">Bowen WG, Bok D (1998): "Moreover, controlling for SES had an imperceptible effect on the predicted black-white difference in class rank. The predicted black-white gap in class rank is reduced by only about 1 percentile point (or 5 percent) when the SES variables are added to the regression" (p. 80).</p> <p data-bbox="911 720 1279 877">Firkowska A, Osrtowska A, Sokolowska, M, Stein Z, Susser M, Wald I (1978): Poland--0.23 SES with intellectual ability where schools, environment, etc. were controlled.</p> <p data-bbox="911 909 1279 1073">Jencks C, Smith M, Acland H, Bane MJ, Cohen D, Gintis H, Heynes B, Michelson (1972): "... parental income had virtually no independent effect on a child's cognitive skills . . ." (p. 214).</p> <p data-bbox="911 1104 1279 1184">Valencia RR, Suzuki LA (2001): "SES is only weakly associated with measured intelligence . . ." (p. 80).</p> <p data-bbox="911 1215 1279 1316">"... measures of the home environment (e.g., HOME) are more accurate predictors of children's intelligence than is SES" (p. 109).</p> <p data-bbox="911 1348 1279 1482">White KR (1982): The relation between socioeconomic status and academic achievement: 0.22 correlation of SES with intellectual abilities.</p>

II. Regarding Unfair Discrimination

A. Stereotyping and unfair discrimination in general

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p>II.A.1. <u>Unconscious Stereotypes Cause Discrimination</u></p> <p><i>Watson v. Fort Worth Bank & Trust</i> (1988).</p> <p>Banaji MR, Hardin C, Rothman AJ (1993).</p> <p>Dovidio JF, Hebl MR (2005).</p>	<p>"... the operation of unconscious processes in social judgment and reveal how insidious forms of discrimination are perpetrated" (Banaji et al., 1993, p. 280).</p> <p>"... social psychological research suggests that relatively automatic and unexamined cognitive processes, of which the holder (and sometimes the target) may not be fully aware, can lead to discrimination" (p. 16 in Blank RM, Dabady M, Citro CF, NRC, 2004).</p> <p>"Actual discriminatory behavior can follow from subliminal exposure to racial and other demographic stimuli (p. 97 in Blank RM, et al., 2004).</p>	<p>Oppenheimer DB (1993).</p> <p>Allen BP (1995).</p> <p>Barrett GV (2005).</p> <p>There has never been a study measuring individual unconscious stereotypes and relating it to discrimination in any organization.</p> <p>There is no evidence that 'unconscious' stereotypes cause discrimination at work.</p>
<p>II.A.2. <u>Expectations Cause Discrimination</u></p> <p>Rosenthal R., Jacobson L (1968a; b).</p> <p>Eden D (1984).</p> <p>Eden D (1990).</p>	<p>Teachers' and managers' negative expectations about others can lower their school and work performance.</p>	<p>Meta-analysis and review found little support for the concept (Spitz H, 1999a; b).</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p>II.A.3. <u>Affirmative Action Conforms to American Ideal of Fairness and is a Necessary Policy</u></p> <p>American Psychological Association (1996).</p> <p>American Psychological Association (2003): ". . . measures of implicit prejudice are significant predictors of the level of discriminatory behavior and judgments" (p. 9).</p> <p>Crosby FJ (2004).</p>	<p>Affirmative action is a concept, which has varying definitions from giving everyone a fair opportunity to preference for certain groups.</p>	<p>Sowell T (2004): Describes negative effects of adverse impact.</p> <p>There have been many who disagree with Affirmative Action and have won court cases (e.g. <i>Albright v. City of New Orleans</i>, (2004).</p>
<p>II.A.4. <u>Institutional Discrimination Involves Test Bias, Which May Involve a One-Item Test</u></p> <p>Crosby FJ, Iyer A, Clayton S, Downing RA (2003).</p> <p>Crosby FJ (2004).</p>	<p>Famous finding, "that a response to the single item, 'Did you ever build a model airplane that flew?' . . . predicted pilot success in flight training as well as did an extensive battery of tests (Henry, 1965)" Sackett and Wilk (1994, p. 939).</p> <p>Conscientiousness: Ask "if they had saved money earned from babysitting" (Crosby et al., 2003, p. 102).</p>	<p>Barrett GV, Illingworth AJ, Rosen CC (2004).</p> <p>This is not a famous finding. There is no basis for the assertion.</p> <p>Henry ER (1965): There was a discussion among participants in a conference where one casually said he had "a vague recollection . . ." (p. 13).</p>
<p>II.A.5. <u>All Groups Should Be Proportionally Represented In All Personnel Decisions</u></p> <p>Testimony of Dr. R. L. Paetzold in <i>Phillips v. Cohen</i>, (2005).</p>	<p>The concept is that if, for example, the same proportion of Blacks who are promoted doesn't match census data, then they are under-represented and this is evidence of discrimination. Any difference between groups is Disparate Impact and evidence of discrimination.</p>	<p>The court in <i>Phillips v. Cohen</i> (2005) found that Paetzold had not taken into account either the interest or qualifications of those promoted. More generally, this is an example of Simpson's Paradox (Barrett, 1990).</p> <p><i>Robertson v. Sikorsky Aircraft Corp.</i>, (2001): No scientific basis for the assumption that any time one racial group does not fare as well as another, the explanation must be discrimination. Qualifications and interests have to be factored into personnel decisions.</p>

B. Discrimination against blacks

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>II.B.1. Negative Black Stereotypes Cause Discrimination</u></p> <p>Testimony of Dr. J. Dovidio on racial stereotyping in <i>Comfort v. Lynn School Committee</i>, 2003).</p> <p>Dovidio JF, Hebl, MR (2005).</p>	<p>Race stereotypes concerning Blacks are uniformly negative and cause discrimination.</p>	<p>Bayton JA, McAlister LB, Hamer JR (1956) and Smedley JW, Bayton JA (1978): Class, not race, results in Black versus White differences.</p> <p>Dovidio JF, Brigham JC, Johnson BT, Gaertner SL (1996): ". . . our review of the literature raises questions about the usefulness of individual differences in stereotyping as a predictor of interracial behaviors" (p. 307).</p>
<p><u>II.B.2. Tests are culturally biased against Blacks</u></p> <p>Testimony of Dr. Williams in <i>PASE v. Hannon</i>, (1980).</p>	<p>"The IQ Myth" (1975)--CBS Documentary Fight question was culturally biased from IQ test. The item was: "What is the thing to do if a boy/girl much smaller than yourself starts to fight with you?"</p>	<p>Koh T-H, Abbatiello A, McLoughlin CS (1984): Table 3--Percentage of Children</p> <p>Passing Item: White (N=180) Black (N=180) Fight: 71% 73%</p> <p>No support for Dr. Williams' arm chair speculation.</p>
<p><u>II.B.3. Blacks True Test Scores & Other Minority Groups' Scores Are Lowered Because of Stereotype Threat</u></p> <p>Steele CM, Aronson J (1995).</p> <p>Steele CM (1997)</p>	<p>Stereotype threat causes Black v. White test score gap and lowers scores of women v. men. If but for stereotype threat, mean scores would be equal.</p>	<p><i>Grutter v. Bollinger</i>, (2001): Court didn't accept stereotype threat concept as presented by Steele.</p> <p>Sackett PR, Hardison CM, Cullen MJ (2004a; b): No evidence that stereotype threat reduces any group's test scores in employment situations.</p>
<p><u>II.B.4. Statistically significant differences between the means of Black and White test scores is evidence of test bias and discrimination</u></p> <p><i>Coleman v. The Quaker Oats Company</i>, (2000).</p>	<p>Rejection of null hypothesis of no mean differences between groups results in acceptance of alternative hypotheses of discrimination based on race, national origin, and age. Experts often term this statistically significant evidence of (race, sex, age, etc.) discrimination.</p> <p>The plaintiffs' expert in <i>Coleman v. The Quaker Oats Company</i></p>	<p>Woodworth RS (1910): Mean no value in comparing different groups.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
	(2000) stated that the likelihood that this disparity would occur by chance were 3 in 100 billion.	

C. Discrimination against females

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.						
<p>II.C.1. <u>Sex Stereotypes Exist in Organizations and Cause Discrimination</u></p> <p>Kanter RM (1977).</p> <p>Dr. S. T. Fiske's testimony in <i>Hopkins v. Price Waterhouse</i>, 618 F. Supp. 1109 (D. C. 1985).</p> <p>Bielby WT (2/03/03).</p>	<p>Case study of organization who had hired 20 female sales personnel in early 1970's</p> <p>Interviews with 16 of 20 newly hired females in the sales department: Talent, intelligence, and knowledge are nice, but confidence is essential.</p> <p>(a) Mother - Madonna or (b) Seductress - whores (c) Pet - kid sister (d) Iron Maiden - virgin aunt (Kanter, 1977).</p> <p>A: "I am confident that stereotyping played a role in the decision about Ann Hopkins"</p> <p>A: "Well in lay language I would say it played a major determining role"</p> <p>Fiske ST, Bersoff DN, Borgida E, Deaux K., Heilman ME (1991).</p> <p>American Psychological Association (1991): "The methods used by Dr. Fiske, respondent's expert, to analyze the evidence of adverse stereotypic judgments made by petitioner's partners are standard in the field" (p. 1069).</p>	<p>Barrett GV, Morris SB (1993a; b): No evidence stereotyping caused discrimination. Research does not support sex stereotypes causing discrimination.</p> <p>Wrightman LS (1999): "But when the APA brief concluded that gender stereotyping was 'transformed into discriminatory behavior' (APA brief, p.12), it was clearly stepping outside of its educator role and into the role of advocate. Was it not presumptuous of the APA to offer a legal argument? What qualifies as 'discriminatory behavior' to the courts is a legal question, determined by referring to statutes, precedents, and burden of proof. The APA, as a presenter of social science data, has no expertise with regard to legal arguments. When it starts calling the shots on legal issues, the APA jeopardizes its science-translation role's credibility" (pp. 164, 165).</p> <p><i>Ray v. Miller Meester Advertising, Inc.</i> (2003): Court rejected social framework testimony by Dr. Borgida on sex stereotypes and discrimination.</p> <p>Barrett GV, Illingworth AJ, Rosen CC (2004): Case study--iron maiden--one person, maybe. No support for the four types.</p>						
<p>II.C.2. <u>Stereotypes cause sexual harassment</u></p> <p>Fiske ST, Glick P</p>	<p>Theory of ambivalent sexism.</p> <p>Glick--career women are perceived as manipulative.</p>	<p>Barrett et al. (1998): 161 adults.</p> <table border="1"> <thead> <tr> <th>Career Women</th> <th>Career Men</th> </tr> </thead> <tbody> <tr> <td>(1) Competent</td> <td>(1) Competent</td> </tr> <tr> <td>(2) Authoritative</td> <td>(2) Authoritative</td> </tr> </tbody> </table>	Career Women	Career Men	(1) Competent	(1) Competent	(2) Authoritative	(2) Authoritative
Career Women	Career Men							
(1) Competent	(1) Competent							
(2) Authoritative	(2) Authoritative							

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
(1999).	"... whereas even relatively sexist men viewed career women as competent at accomplishing work tasks, but they also viewed them as quite nasty-aggressive, selfish, and cold" (Glick and Fiske, 1999, p. 216).	(3) Intelligent (3) Intelligent (4) Manipulative No support for negative view of career women.

D. Discrimination against seniors

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>II.D. Age Stereotypes Cause Terminations and Other Adverse Employment Decisions Affecting Older Workers</u></p> <p>Rosen B, Jerdee TH (1976a, b).</p> <p>Campion testimony in <i>Richter v. Revco</i>, (1997), affirmed (1998).</p>	<p>Low energy level, versatility and resistance to change are code words for age stereotypes, read depositions, performance appraisals, etc. The method is to determine if decision makers are stereotyping older employees.</p>	<p>Barrett GV, Lueke SB, Kramen AJ (2002, April): Age stereotypes not related to discrimination.</p> <p><i>Camp v. Lockheed Martin Corporation</i> (1998), discussing Rosen's expert testimony: "Testimony that unconscious age stereotyping 'potentially influenced' Lockheed Martin's decisions and that those decisions are 'potential indicators of age bias', while perhaps of considerable interest to psychologists and sociologists, is not relevant to the issue whether Lockheed Martin intentionally discriminated against Camp because of his age" (p. 10).</p>

III. Regarding Personality and Motivation

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>III.A. Phrenology</u></p> <p>Gall FJ (1835): Marsh, Capen, and Lyon isolated 27 innate human traits corresponding to size of cerebral area and surface of skull.</p>	<p>The phrenologist felt the lumps on the individuals' head to determine their personality and other attributes.</p>	<p>Phrenology was criticized early in the 19th century (e.g., Lambert EF, artist, and Hunt FC, engraver, 1830).</p> <p>Bakan D (1966): A classic example of early junk science.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p>III.B. <u>Innate Needs in a Hierarchy, Which Motivate Behavior as Each Level of Need is Met</u></p> <p>Maslow AH (1943; 1962; 1965; 1970).</p>	<p>Reaction against Freudian and other theories of personality, which left out humanistic psychology.</p>	<p>Barrett GV, Illingworth AJ, Rosen CC (2004).</p> <p>Little evidence theory has any validity, since not tested. However, one set of positive findings (Franke, 1983a) showed cross-nationally that hierarchically low needs (dissatisfactions) of managers were strongly related to subsequent economic growth rates of developed nations.</p>
<p>III.C. <u>Intrinsic/Extrinsic Motivation</u></p> <p>Herzberg F, Mausner B, Peterson RO, Capwell DF (1957).</p> <p>Herzberg FI, Mausner B, Snyderman B (1959).</p> <p>Herzberg F (1966; 1968; 1974).</p> <p>Ford RN (1969).</p>	<p>Intrinsic factors of the job more important to work and satisfaction than extrinsic factors such as money.</p> <p>Intrinsic factors provide productivity and job satisfaction. Job enrichment will bring about organizational change.</p> <p>"The findings of these studies, along with the corroboration from many other investigations using different procedures, suggest that factors involved in producing job satisfaction (and motivation) are separate and distinct from the factors that lead to job dissatisfaction . . . it follows that these two feelings are not opposite to each other. The opposite of job satisfaction is not job dissatisfaction but no job satisfaction; and similarly the opposite of job dissatisfaction is not job satisfaction but no job dissatisfaction" (Herzberg, 1968).</p>	<p>Frank LL, Hackman JR (1975; 1977).</p> <p>Barrett GV, Illingworth A, Rosen C (2004).</p> <p>Limited empirical support for Herzberg's theory.</p>
<p>III.D. <u>16 Personality Types Which Explain All Behavior</u></p> <p>Myers IB (1962).</p> <p>Myers IB, Myers PB (1995).</p>	<p>The Myers-Briggs Type Indicator is a paper-and-pencil test based supposedly on Jung's typology; testees are sorted into 16 types.</p>	<p>Druckman D, Bjork RA (1991): as many as three-quarters of test takers achieve different personality type when test is retaken.</p> <p>There is no scientific basis for the 16 personality types, nor evidence that personality types are related to job</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
		performance or career success.
<p>III.E. <u>Confidence is Essential to Success.</u></p> <p>Kanter RM (2004).</p>	<p>The secret of success is confidence, which is essential. Other attributes like talent, intelligence, and knowledge are nice, but aren't essential (Kanter, 2004).</p>	<p>This concept and book was solely on armchair speculation and "case studies".</p> <p>No empirical research and no attempt to generate counterfactuals to infer causation.</p>

IV. Regarding Management

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p>IV.A. <u>Scientific Management</u></p> <p>Taylor FW (1903; 1911).</p> <p>[See Wren DA (2005).]</p>	<p>The scientific analysis of work on the job can result in large gains in production. Used time study to determine the best way to perform work tasks. Used example of Schmidt in loading pigiron.</p>	<p>As early as 1899 it was determined the case study was not accurate</p> <p>Münsterberg H (1913): Said truth somewhere in middle concerning scientific management (p. 49).</p>
<p>IV.B. <u>Human Relations In Industry</u></p> <p>Mayo E (1933; 1945).</p> <p>Roethlisberger FJ, Dickson WJ (1939).</p>	<p>Supposed reaction against scientific management.</p> <p>Human relations more important than time and motion studies.</p>	<p>Franke RH, Kaul JD (1978).</p> <p>Franke (1980).</p> <p>Hawthorne experiments (1924-1933) do not support human relations leading to increased productivity. Manipulative and anti-democratic aspects of Mayo's concept (cf. Bendix and Fisher, 1949; O'Connor, 1999) may mitigate against effective responsibility-sharing in industrial democracy.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p>IV.C. <u>Sensitivity Training (T-Groups) Can Benefit Employees and Make Organizations More Effective</u></p> <p>Lewin K (1947a; b).</p> <p>Bradford L, Gibb J, Benne K (1964).</p> <p>Marrow (1964).</p>	<p>Lewin, along with Bradford, Benne, & Lippitt, created National Training Laboratories (NTL) in 1947. Training influenced by social psychology; conducted in small groups to examine personal behavior and interpersonal relations.</p> <p>Seen as a main instrument for organizational change, eventually without the psychological and career protection offered to individuals by "stranger" groups.</p>	<p>Campbell JP, Dunnette MD (1968): Review questioning effectiveness of T-Groups.</p> <p>Bennis WG (1977): Describes failure of sensitivity training in one organization.</p> <p>Lieberman MA, Yalom ID, Miles MB (1973): Describe hazards of psychiatric damage to participants.</p> <p>Highhouse (2002): Reviews history of T-groups, including lack of demonstrated effectiveness and damages to participants in part due to irresponsible practitioners-- resulting in demise of the movement.</p>
<p>IV.D. <u>Group Think</u></p> <p>Janis IL (1972; 1982).</p>	<p>Based on five case studies of what were termed major fiascoes, by five American presidents (Roosevelt – Pearl Harbor; Truman – North Korea; Kennedy – Bay of Pigs; Johnson – Vietnam; Nixon – Watergate) involving group decision making. Groupthink results in poor decision making where the pressure for conformity overrides realistic appraisal of alternatives.</p>	<p>Aldag RJ, Fuller SR (1993).</p> <p>Fuller SR, Aldag RJ (1998).</p> <p>Rosander M, Stiwne D, Granstrom K (1998).</p> <p>Ahlfinger NR, Esser JK (2001).</p> <p>There is little empirical support for this concept.</p>
<p>IV.E. <u>Diversity Training</u></p> <p>Thomas RR Jr. (1990).</p>	<p>Diversity training removes stereotypes and promotes a productive, diverse workplace.</p> <p><i>San Antonio Hispanic Police Officers Organization, Inc. v. City of San Antonio</i> (1999)-- diversity training mandatory for police officers.</p> <p><i>Fitzgerald v. The Mountain States Telephone & Telegraph Co.</i> (1995): Alleged fee to diversity trainer plaintiffs was a 'racial/gender stereotype' (p. 1261). Plaintiffs awarded \$2,000,000 by a jury.</p>	<p>Hemphill H, Haines R (1997): Backlash against ineffective diversity training programs.</p> <p>No evidence for their effectiveness.</p>

Concept & Advocate	Features of the Concept	Observations/Critique of the Concept.
<p><u>IV.F. Resourceful, Evaluative, Maximizing Model of Man</u></p> <p>Jensen MC, Meckling WH (1994).</p>	<p>A reaction to sociological and psychological models of man.</p> <p>Armchair essay with little citation of scientific literature.</p>	<p>Mintzberg H (2004): No empirical evidence for their types.</p>
<p><u>IV.G. Characteristics of Great Companies</u></p> <p>Peters TJ, Waterman RH (1982)</p>	<p>Eleven companies were identified which were 'great' and compared with ordinary companies.</p> <p>Differentiating characteristics were identified, such as a culture of discipline.</p>	<p>Some "great" companies such as Delta have had problems (p. 24).</p> <p>Have to question the reliability of the findings.</p>
<p><u>IV.H. Primal Leadership & Resonance</u></p> <p>Goleman D, Boyatzis R, McKee A. (2002).</p>	<p>The primal job of leadership is emotional, and the primal leadership model builds on neurology (Goleman et al., 2002, p. ix)--"Their rule of thumb holds that EI contributes 80 to 90 percent of competence that distinguishes . . . leadership" (p. 251).</p>	<p>While asserting they confirmed their personal observations with data on thousands of leaders, strangely, they didn't cite even one peer-reviewed scientific article to support their claim (Barrett GV, Miguel RF, Tan JA, Hurd JM (2001).</p> <p>Barrett GV, Kramen AJ, Lueke SB (2003).</p> <p>Barrett GV (2005).</p> <p>No evidence for resonance and effective leadership in organizations.</p>

Frederick Taylor of Scientific Management fame was a great storyteller, as are pop stars of businesses who currently receive \$150,000 at business conventions or \$800 per hour as expert witnesses, in effect for telling their stories and casting their images (Barrett, 2005). A major influence on Taylor's career as scientist/engineer was that in the final years of his life, from 1901 to 1915, he had become highly successful and influential as a consultant. As described by Nelson (1980: 154, 171), Taylor, to suit the immediate interests of his corporate clients, shifted from the technical and managerial innovations he had found most important to improving performance, concentrating instead on "labour interventions [which] could not be very effective in the absence of underlying organizational changes" such as systemizing accounting, processes, and product, establishing planning departments, and professionalizing supervision (Franke, 1983b: 481). In effect, Taylor's earlier scientific management contributions were subverted by his eventual promotional successes.

Occasionally, unsupportable contentions are introduced in scientific journals. For example, Marston (1917) published his research on lie detection in a peer-reviewed

journal, and then testified in court that--using his technique--he could determine the guilt or innocence of an alleged murderer. However, the court rejected his expert testimony, using as a determining factor whether or not there was general acceptance of the device in the scientific community (*Frye v. U.S.*, 1923). This remained good law until the Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals* (1993). The Supreme Court made the district courts judges gatekeepers of expert testimony. The old standard of general acceptance for admitting expert scientific testimony was supplemented by other considerations consistent with the Federal Rule of Evidence. While Marston's research may have met scientific standards, its extension from the laboratory to the courtroom would now be considered junk science. As a further problem in utilizing scientific evidence in law, it is interesting to note former Chief Justice Rehnquist's comment in dissenting to the Daubert decision, that ". . . I am at a loss to know what is meant when it is said that the scientific status of a theory depends upon its 'falsifiability', and I suspect some of them will be too" (referring to federal district judges on page 600).

There are numerous examples of laboratory research which has been asserted to solve business or legal problems, when in fact it has no demonstrated validity. For example, Harvard Business School reports of findings from the Hawthorne Experiments conducted by managers at the Western Electric Co. avoided peer review by having their major contribution (Roethlisberger and Dickson, 1939) published by the Harvard University Press. Similarly, Kanter (1977) introduced in book form her views on sex stereotypes, and more recently her views on the power of "confidence" (Kanter, 2004). Goleman (1995; 1998) also skipped professional review by introducing "emotional intelligence" not in peer-reviewed scientific journals, but instead in books directed to general audiences, which have sold millions of copies. Sadly, professional publications sometimes cite storytellers like Goleman as if their ideas actually have demonstrated scientific value (e.g., Engelberg and Sjoberg, 2006).

Spencer (2001: 46), in discussing emotional intelligence competency (EIC), states that "EIC researchers and practitioners are regularly savaged by critics for failing to publish reliability and validity data: For example, Barrett (2000) denounced EIC as "slickly packaged junk science perpetrated by unscrupulous consultants on ignorant customers." The fact is that, in more than a decade since Goleman (1995) popularized the doctrine of emotional intelligence, there still has not been a single predictive validation study relating "emotional intelligence" to job performance in a peer-reviewed scientific journal (Barrett et al., 2003).

Once you have a folk theory accepted by the media and public what is the payoff? As Kanter (2005) explained, you are just meeting consumer demands by publishing popular books. You don't need the facade of science to sell them.

II. MEASUREMENT

One of the great deficiencies of folk theories is that there is not a psychometrically sound method of measuring the construct. If there is an instrument, it was not demonstrated to relate to any real world behavior. For example, there are no published scientific studies related to behavior in work organizations on:

1. Practical Intelligence
2. Competencies
3. Emotional Intelligence
4. Socioeconomic Class
5. Age Stereotypes
6. Race Stereotypes
7. Sex Stereotypes
8. Maslow's Hierarchy of Needs
9. Multiple Intelligence
10. Stereotype Threat
11. Unconscious Stereotypes.

III. ORIGIN OF THE TERM “STEREOTYPE”

Social psychologists (e.g. Fiske, 1998) attribute the term “stereotype” to Walter Lippman (1922). In fact, it was used as a verb as far back as a century and a half in a court's statement: In its opinion, “. . . nothing but the clearest and least ambiguous terms should be construed as intending to stereotype a particular creed or form of worship” [*The Attorney General v. The Proprietors of the Meeting-house in Federal Street in the Town of Boston*, (1854)]. Lippman’s use of the word was based on previous authors who had used the term “stereotype.”

The first cases to mention “race stereotype” were in 1967 [*Hobson v. Hanson*, (D.C. 1967); *Reitman v. Mulkey*, (1967)]. This was followed by “sex stereotype” by the U.S. Supreme Court in 1971 [*Phillips v. Martin Marietta Corp.*, (1971)]. Relatively late was the invocation of “age stereotype” as a cause of discrimination, in [*Syvocek v. Milwaukee Boiler Mfg. Co.*, (7th Cir. 1981)].

In the years before 1960, there was only one case linking stereotypes and discrimination. The big surge in cases has been recent: From 1/1/90 to 1/1/2000, over a thousand, and from 1/1/2000 to 4/1/05, over 600 additional cases. The “stereotype” flood appears to have been due to Dr. Fiske's expert testimony in *Hopkins v. Price Waterhouse* (1985), whose decision was affirmed by the Supreme Court (*Price Waterhouse v. Hopkins*, 1989)

IV. SCIENTIFIC BASIS FOR FISKE'S TESTIMONY IN HOPKINS V. PRICE WATERHOUSE (1985)

It is instructive to examine the scientific basis for Dr. Fiske's testimony of 20 years ago. In Table 2, below, I summarize the six papers she cited. Two of the papers were essays, containing no empirical data. The single paper that cited reported results from the workplace was the case study by Kanter (1977), which contained no empirical data. That book, in fact, did not even discuss discrimination. While Drs. Fiske, Borgida, Glick, and Bielby, as expert witnesses, asserted that they had evidence of stereotypes causing discrimination in the workplace, they cited only Kanter (1977) in support. As in others’ “studies” supporting phrenology and the Myers-Briggs test, Kanter relied on ipsatively determined *types* labeled to have popular appeal. The Myers-Briggs types

rely upon Jung, while Kanter relies upon Freud. Both Freud and Jung are largely of historical interest to modern behavioral science.

It is evident from Table 2 that Fiske had no evidence from the workplace that sex or age stereotypes caused discrimination. More recently, in the well-known case of *Dukes v. Wal-Mart* (2004), Bielby claimed that sex stereotyping causes sex discrimination. But review of his over 125 citations to the research literature discloses that no study cited was conducted in an organization where individual stereotypes of the decision maker were related to any discriminatory conduct in the workplace.

It should be clear that I am not faulting the authors of the cited research. In general, the research is peer-reviewed. I am saying that it is junk science to state that this research is relevant to business or in the courtroom, despite the fact that stereotypes are now a popular concept deemed to have great explanatory and probative powers (Starr and Strauss, 2006).

V. FISKE'S EVIDENCE ON AGE DISCRIMINATION IN THE WORKPLACE

Dr. Fiske and associates asserted that age stereotypes have negative impact: "In the workplace, older people are perceived as less competent in job performance related tasks than in interpersonal ones" (Fiske et al., 2002: 250). But examination of the studies (Avolio and Barrett, 1987; Rosen and Jerdee, 1976a; 1976b; Singer, 1986) clearly demonstrates that: First, none was conducted in the workplace. Second, all but one study used college students to make judgments. Third, in one study, realtors also were part of the sample, seemingly far removed from employees in a typical hierarchical organization. Fourth, all of the tasks involved "paper-people" in the sense that they were artificial examples, with little or no information provided about them. They are far removed from real organizations. Finally, Dr. Fiske's assertion concerning task competence does not correspond to the results from the studies, as illustrated in Table 3.

Expert witnesses usually cite the meta-analysis by Finkelstein et al. (1995) to support assertions that age stereotypes cause discrimination. In Table 4, I review the nine studies in this article, displaying the research studies that later were used by expert witnesses and reviewers to "prove" that age stereotypes cause discrimination at work. Campion (in *Richter v. Revco*, 1997; *Richter v. Hook SuperRx*, 1998) and others have cited this meta-analysis as evidence that age stereotypes cause age discrimination.

Table 2

Studies cited by Dr. Fiske in her testimony in Hopkins v. Price Waterhouse (1985) to support her testimony that sex stereotypes cause discrimination.

Cite	Sample	Stereotype Measure	Results
Kanter (1977).	16 newly hired females into a sales department who were interviewed out of 20.	None – Kanter's speculation as to four types of stereotypes.	Stereotyped Informal Roles (p. 233) <u>Classics in Freudian Theory</u> (p. 233) 1. Mother 2. Seductress <u>Family Counterparts in Kid Sister and Virgin Aunt</u> (p. 233) 3. Pet 4. Iron Maiden
Prather (1971).	An essay - no data.	None	"In conclusion, as long as society continues to conceptualize women as sex objects and servants, employers are unlikely to consider women as serious participants in the labor force . . . " (p. 181).
Rosen & Jerdee (1973).	134 male & 24 female undergraduates and 83 male & 15 female banking supervisors.	2x3 design using paper-people. No measure of sex stereotype or actual discrimination.	Male supervisors rated mean 12.16 not significantly different from female mean of 11.86. Most differences for male v. female supervisory style not significant.
Rosen & Jerdee (1978).	Over 800 male managers. 32% of the males had spouses who were employed.	None. Used a 64 item attitude scale using the following scale: <u>1</u> Men much more than women <u>2</u> Men slightly more than women <u>3</u> No difference <u>4</u> Women slightly more than men <u>5</u> Women much more than men	Largest mean difference on the item "understand the 'big picture' of organization" was 2.18. Means 2.58 to 2.77 - Very close to no difference.
Schein (1973).	300 male middle line managers.	Three Forms of Descriptive Index; Women in General; Men in General; Successful Middle Managers. 92 adjectives and descriptive terms rated on 5-point scale. No measure of discrimination.	Middle managers characteristics more commonly ascribed to men in general than women in general.
Taub (1980).	Law review essay -no empirical data.	None	None

Table 3
Studies cited by Dr. Fiske

Study	Subjects	Task	Interpersonal Tasks
Avolio & Barrett (1987).	156 undergraduates	Listen to audio tapes of an interview	Not measured
Rosen & Jerdee (1976a).	56 realtors & 50 undergraduates	Questionnaire	No difference
Rosen & Jerdee (1976b).	142 undergraduates	In-Basket	Not measured
Singer (1986).	170 undergraduates from New Zealand	Rated average person	Younger better

Table 4
Studies used as evidence for age stereotypes causing discrimination from Finkelstein, Burke, & Raju (1995) meta-analysis.

Citation	Target	Target Information	Stereotype Measure	Rater Sample	Results	Conclusion
Crew (1984).	30 & 60 year old male paper people	None except race	Used Rosen & Jerdee (1976a) of 65 items which were arranged in bipolar form	74 Black & 51 White undergraduates	30 year olds higher on performance capacity & potential for development 60 year olds higher in interpersonal skills and stability	Some White v. Black differences
Fusilier & Hitt (1983).	Ages 25, 40, & 55 paper people	Job Description, Application Form, & Experience	None	523 undergraduates	Age not significant	Only significant effect was experience
Haefner (1977).	25 & 55 year old paper people	Disadvantaged, race, sex, age, and degree of competence	None - hiring recommendation for 16 paper-people profiles	286 Managers	25 year olds preferred over 55 year olds	Barely competent no age differences. High competence prefer younger.

<u>Citation</u>	<u>Target</u>	<u>Target Information</u>	<u>Stereotype Measure</u>	<u>Rater Sample</u>	<u>Results</u>	<u>Conclusion</u>
Lee & Clemons (1985).	32, 35, 61, & 65 years old paper people	Two studies. No-information condition (Age, Sex) Information condition BIB, job description, & performance appraisal	Probability of approving request for training on 6 point scale – No actual measurement of content of age stereotype	Both studies 48 undergraduates	No-information favored younger worker, Information on performance older worker favored	"Caution must be taken in generalizing the results to the world of work" (p. 787).
Rosen & Jerdee (1976a).	60 & 30 year old male paper people	Age & Sex only	65 items rated as not at all accurate to very accurate. Items grouped into categories	50 undergraduates 56 Realtors	Items in four categories. Performance capacity & potential for development rated higher for younger, stability higher for older. Interpersonal skills no difference	"Further research needed to determine the extent to which age stereotype actually influences personal decisions" (p. 183).
Rosen & Jerdee (1976b).	Younger or older employee	Photographs of various employees	In-basket exercise No individual measure of stereotype	142 undergraduates 115 males & 27 females	Older more resistant to change, less creative and more cautious	Age stereotype may influence managerial behavior
Singer (1986).	30 and 55 year old average man	Five Professions	Rated on Rosen & Jerdee (1976b) 4 work dimensions	65 male & 165 female New Zealand undergraduates	Younger higher on performance, potential, interpersonal; Older higher on stability	Results varied by profession - No complete data presented

<u>Citation</u>	<u>Target</u>	<u>Target Information</u>	<u>Stereotype Measure</u>	<u>Rater Sample</u>	<u>Results</u>	<u>Conclusion</u>
Singer & Sewell (1989).	Applicant 25 or 48	Vita, selection interview video tape, Neutral condition read about parks, in age-related read but successful older workers not information concerning applicants	Rated applicants on 6 dimensions including likely to hire. No actual measurement of the content of an age stereotype.	61 New Zealand managers & 119 New Zealand undergraduates	In neutral condition manager sample preferred to hire younger applicant for clerk but no difference for finance manager position. In age-related, no difference Finance clerk preferred to hire older for Finance manager position.	"... age bias effect was not generalizable . . ." (p. 151).
Triandis (1963).	No age; 30 years old & 55 years old	Rated paper people with age competence only information	No stereotype measure	100 U.S. & 100 Greek undergraduates and 32 U.S. & 20 Greek Personnel Directors	Complex, but younger white males favored	Both U.S. and Greek students significantly different from personnel directors

It is evident that all nine studies were laboratory paper-people studies. None was conducted in an organization. None actually measured any individual stereotypes, nor was there any measure of discrimination in the workplace. The basic research design was "paper-people" simulations, often providing only the figures' ages and the ratings or decisions regarding them. Any differences found between target ages (e.g., 32 versus 65) was attributed to an age stereotype. There was no attempt to determine alternative explanations for any differences. It was inferred that there was an age stereotype in the rater's head which resulted in group differences. Alternate explanations, for example, might include that it is more cost effective to spend training dollars on those who have the lowest probability of leaving the organization (whether older or younger).

VI. DR. FISKE'S EVIDENCE ON RACE DISCRIMINATION IN THE WORKPLACE

Fiske (1998) cites Dovidio et al. (1996) as having found that race stereotypes relate to discrimination. This is the sole reported meta-analysis linking this attitude and this resulting behavior. Table 5 provides details of the three studies appraised in the meta-analysis. It is obvious that none had as a dependent variable discriminatory behavior in

the workplace. It also is apparent that all of the participants in the laboratory studies were college undergraduates, and that tasks performed were not even good simulations of tasks performed in workplaces.

Table 5

Race stereotypes and discrimination. Dovidio et al. (1996). Meta-Analysis. Cited by Fiske (1998) and Dovidio & Hebl (2005).

Cite	Sample	Stereotype Measure	Results
Brigham (1971).	112 female & 88 male undergraduates.	15 traits where you circle percentage of members of Blacks and Whites who have the trait. Dependent variable were suggested for 16 juvenile offenders.	Stereotyping 0.04 with jail sentence. Stereotyping and attitude 0.40. Attitude 0.16 with jail sentence (p. 372). "One of the most striking findings of the present research is the fact that prejudiced subjects did not, by and large, act in a discriminatory manner" (p. 376).
Feldman & Hilterman (1977). <u>Experiment 1</u>	182 male undergraduates	No stereotype measure. Rated paper-people in 3 x 3 x 3 with high, moderate, or poor job performance, and race, etc.	Race not significant on "Employee Behavior Report Form".
<u>Experiment 2</u>	78 male undergraduates	Stereotype measure, 10 on race and 10 on SES. 2 x 3 x 2 design including race and performance.	". . . hypothesis of stereotype contrast - confirmation effects . . . was not found in either racial or social class contest" (p. 51).
Stangor, Sullivan, & Ford (1991). <u>Study 1</u>	109 women and 69 men undergraduates.	1. Individual Stereotypes-- list thoughts about a social group. 2. Consensual Stereotypes-- percentage of group possessed trait (0-100). 3. Emotions-- checklist. 4. Attitude - semantic differential scale of favorability toward nine groups (dependant variable).	Stereotype measure low correlation with attitude (most near zero).

Cite	Sample	Stereotype Measure	Results
<u>Study 2</u>	20 male & 23 female undergraduates.	Similar to Study 1. Dependant variable Bogardus (1925) social distance scale.	Consensual stereotypes nonsignificant near zero correlation. Individual stereotypes 0.13 for favorability and 0.24 for social distance. "The finding that endorsement of these stereotypes was not highly related to attitudes leads us to question the assumption that ascription of culturally shared stereotypes represents the cognitive component of prejudice" (p. 377).

Table 6
Discrimination at work. Chapters in Dipboye & Colella (2005) Concerning Stereotypes and Discrimination.

Author / Chapter Title	Title of Section In Chapter, Quotes, and Actual Evidence	Effect Size	External Validity
Brief, Butz, & Deitch (2005). Organizations as Reflections of Their Environments: The Case of Race Composition.	<u>Stereotypes & Prejudice</u> (p. 133) "The cultural stereotypes of Blacks in America are decidedly negative . . . Stephen & Rosenfield, 1982)" (p. 133). In fact, as is true of all ethnic groups, there are both favorable and less favorable attributes attributed to Blacks. Most importantly, the context of the stereotype is moderated by social class. This finding has been true since the first stereotype study (e.g. Katz & Braly, 1933).	None reported.	None reported.
Cleveland, Vescio, & Barnes-Farrell (2005). Gender Discrimination in Organizations.	<u>Understanding Stereotypes, Prejudice and Discrimination</u> (p. 154) ". . . our previous review of the content of gender stereotypes, for example, 'iron maidens' (Kanter, 1977), who are respected for their competence but disliked because of their lack of human qualities, may be subjected to hostile sexism (Fiske et al., 2002)" (p. 159). The "discovery" of the "iron maidens" type was from Kanter's case study and involved only one person she believed fit the type. No research has ever confirmed this "insight" (Barrett, 2005).	None reported.	None reported.

Author / Chapter Title	Title of Section In Chapter, Quotes, and Actual Evidence	Effect Size	External Validity
Dovidio & Hebl (2005). Discrimination at the Level of the Individual: Cognitive and Affective Factors.	<p><u>Individual Level Discrimination in the Workplace</u> (p. 24)</p> <p>". . . can produce workplace discrimination in various ways" (p. 24).</p> <p><u>Direct Consequences for Employment-Related Decisions</u> (p. 24)</p> <p>"Open expressions of bias, such as those assessed by self-report measures, continue to predict discrimination, including discrimination in hiring decisions, at the individual level" (Dovidio et al., 1996) (p. 24).</p> <p>Not even one empirical study has ever predicted any stereotype leads to discrimination for any personnel decision in the workplace (Barrett, 2005).</p>	None reported.	None reported.
Paetzold (2005). Using Law and Psychology to Inform Our Knowledge of Discrimination.	<p><u>Implicit Prejudice and Stereotyping</u> (p. 334)</p> <p>"People may be racist or sexist without being aware of their biases, which can then lead to discriminatory behaviors" (p. 335).</p> <p>"Fiske . . . reported . . . emphasis on teamwork . . . can eliminate the application of stereotyping (Fiske, 1989)" (p. 335).</p> <p>There is no evidence that "unconscious" biases can predict discrimination in the workplace (Barrett, 2005).</p>	None reported.	None reported.
Shore & Goldberg (2005). Age Discrimination in the Workplace.	<p><u>Views of Age Discrimination</u> (p. 204)</p> <p>"Although perceptions of warmth may be an asset, the incompetence stereotype suggests that older workers are likely to be denied workplace opportunities" (p. 205).</p> <p>There is no evidence that age stereotypes predict age discrimination in the workplace (Barrett, 2005).</p>	None reported.	None reported.

VII. DISCRIMINATION AT WORK: DISTORTION OF PUBLISHED RESEARCH

Even in recent books which purport to review discrimination at work, there is distortion of facts. In Table 6, I present a few of the distortions present in chapters of Dipboye and Colella's (2005) edited volume, *Discrimination at Work*.

In her chapter 14 on "Using Law and Psychology to Inform our Knowledge of Discrimination," Paetzold (2005: 334-335), citing Banaji and Greenwald (1995), stated that: "Implicit sexist stereotypes have also been demonstrated to exist. People may be racist or sexist without being aware of their biases, which can then lead to discriminatory behaviors." Readers probably would infer that there are well-established procedures for measuring unconscious gender stereotypes, which vary among individuals, and that these are related to discriminatory decision-making at work. But there is absolutely *no* empirical support for any of these inferences.

The four experiments contained in Banaji and Greenwald (1995) require examination to determine their relevance to business: The first experiment had 28 high school students judge whether or not male and female names were famous. They determined, using signal detection methods, that a more liberal criterion was used to judge fame for presumably male as compared to presumably female names. The second experiment replicated the first, but in a college classroom with 99 undergraduate students. The third involved 38 undergraduates, with some additional paper-and-pencil measures. The fourth experiment, with 71 undergraduates, replicated the first three experiments.

The most salient and definitive statements that can be made concerning these four experiments are that they did not involve employees making decisions in the workplace and that there was no measurement of *any* behavior which even remotely corresponded to legal discrimination of any type. In addition, the reader would have to accept as a fact that gender stereotyping is "involved when the attribute of fame is conferred more readily on male names than on equally familiar female names . . ." (Banaji and Greenwald, 1995: 183), which seems a drastic departure from the usual definition of a stereotype. It should be noted that the authors had labeled and published their results as implicit measures of *attitudes* before deciding to label them as *stereotypes* (Banaji and Greenwald, 1995: 181, note 1).

The misstatements concerning male and female differences are, I presume, at least consistent. For example, it was stated in *Discrimination at Work* that: ". . . women hold less prestigious and influential jobs" (Cleveland et al., 2005: 153), citing earlier work by Brett and Stroh (2003). But they had *not* compared either prestige or influence in male vs. female jobs. Instead, their study determined that 28.6% of males and 11% of females worked 61 hours or more per week.

As is characteristic of advocates of received doctrines, Dr. Fiske and her colleagues sometimes cited articles as supporting their point of view when in fact the actual results disconfirmed their doctrine. They insisted that career women are perceived negatively. Unnoted were conflicting findings, such as by Eagly and Steffen (1984: 752) that employed women were perceived as having *more favorable* attributes in comparison with employed men.

An article by Heilman et al. (2004: Table 7), in the *Journal of Applied Psychology*--one of the most prestigious publications of the American Psychological Association--illustrates that clearly incorrect interpretation can occur even in peer-reviewed research published in good journals. It does appraise the workplace, using (real) raters and (paper-people) ratees, both sets of whom are employees rather than college students. Its title, "Penalties for Success: Reactions to Women Who Succeed at Male Gender-Typed Tasks," suggests that women in the work place are found to be discriminated against as a result of success at doing a "man's job." Male and female

employee figures were presented as competent, not competent, likable, and not likable, in all combinations. What the authors did not report is that in all these conditions there was *no* significant difference between the ratings given the male and female figures, all identified as assistant vice presidents of operations, in *any* of the conditions posed. The results summarized below are the overall mean evaluations by real employees serving as raters of the male and female figures pictured in the study's layout--the higher the mean given by raters, the better the AVP was evaluated by them to be:

Table 7

Position: Assistant Vice President	Mean Overall Evaluation By Raters, if the AVP was President			
where the AVP was seen as: and where the AVP was:	<u>Competent</u>		<u>Not Competent</u>	
	Liked	Not Liked	Liked	Not Liked
If the AVP was Male:	7.99	7.13	6.34	5.96
If the AVP was Female:	8.06	6.72	6.43	5.34

Statistical analysis (which the authors did not report) shows that there was *no* significant difference between the ratings given male and female Assistant Vice Presidents in any of the categories. Further, the male and female employees who made the evaluations did not exhibit significant differences in their ratings. Thus, the findings above combine male and female raters' responses.

The first conclusion to be drawn from this sketch is that people labeled "competent," male or female, as AVPs received higher performance evaluations than did people described as "not competent." Second, the Assistant Vice Presidents labeled "male" and "female" received almost identical ratings, and there was no evidence of any sex discrimination or bias. The third conclusion is that an AVP was likely to receive higher ratings if described as being "liked" as opposed to "not liked." Fourth, there was no difference in ratings according to the sex of the rater. All of this seems to be good news. The article should have concluded that there is no penalty for successful women in the business world who are seen as performing a "male gender-typed" job, whether rated by male or by female business employees. Instead, Heilman et al. (2004: 426) concluded that: "The results of these studies provide support for the idea that success in traditionally male domains can have deleterious consequences for women."

Evidence that male and female employee evaluators reacted the same way to these "paper people" and based their ratings on competence and likeability was perceived by Heilman et al. (2004: 426) as evidence of the ". . . universality of gender-stereotypic norms and of the tendency to penalize individuals who violate them" But the female Assistant Vice Presidents were *not* penalized. They received nearly identical ratings to the male paper Assistant Vice Presidents. How can any type of gender stereotypes be inferred? The unsuspecting reader might assume that the gender stereotype harbored by the raters was measured in some fashion. But it was not.

On the same page, the authors claimed that their finding has an analogue in the work world, where terms such as "iron maiden" are said to be invoked to describe women who have successfully climbed the organizational ladder. But Heilman et al.

(2004) failed to provide a source for use of this inflammatory term beyond Kanter's (1977) case study in which she claimed to have heard of one female manager referred to in that way. In our own empirical studies, no one provided the term "iron maiden" to stereotype a career woman (Miller et al., 2000).

Reviews of sex-stereotyping research findings sometimes distort results and thus mislead readers. For example, in *Discrimination at Work*, Dovidio and Hebl (2005: 17) stated that: ". . . Rudman (1998) found that women that were self-promoting were perceived as higher in competence than those who were not self-promoting. However, self-promoting women were viewed as less socially attractive and less likely to be hired than were self-promoting men and non-self-promoting women." Based on these statements, one might assume that self-promoting men and women with similar qualifications applied for jobs in an organization, and that men were more likely to be hired. These assumptions are incorrect. Actually, the study was of college students who, based on an interview, were deciding whether they should "hire" the subject as a partner to play a computerized version of the television show, *Jeopardy*.

Not only was research on gender stereotypes distorted, but findings which cast *doubt* on stereotype theories were ignored. Thus, Rudman (1998) did not mention Glick and Fiske's (1996) finding that the Ambivalent Sexism Inventory (ASI) failed to predict any of the dependent variables. One could argue that in a chapter treating supposed stereotyping and discrimination, it might have been important for Dovidio and Hebl (2005) to note that, ten years after the theory was conceived, there still was no evidence that the ASI actually could predict discrimination at work.

VIII. DISTORTION OF STEREOTYPE THREAT RESEARCH

One of the most popular new concepts is stereotype threat. It is an extension of the idea that stereotypes cause discrimination at work. Instead of stereotype being in the heads of decision-makers, they are in the self-concepts of women and minorities that they are not able to do well on a task or test. In court, plaintiffs' experts have cited this research to explain Black-White test score differences. As Dovidio and Hebl (2005: 30) stated, "minorities are particularly susceptible to experiencing stereotype threat . . . , which can interfere with their cognitive performance, even on tasks of considerable importance and relevance" (citing Sekaquaptewa and Thompson, 2003; Steele, 1997).

But what were the "tasks of considerable importance and relevance?" White male and White female undergraduates answered twelve math-related questions such as the origin of the word, "exponent." No one would consider this a task of "considerable importance and relevance." Also interesting is that in three out of four conditions women had higher scores than men. In fact, in the nonsolo (group) treatment, women's stereotypes threat mean score was identical to the men's mean score in the no threat condition. An accurate interpretation of the results would be that women performing a math-related test in a stereotype threat condition demonstrated performance *superior* to men who were not even threatened.

Furthermore, it is hard to understand what a comparison of female and male undergraduates has to do with "minority" versus "majority" performance. If anything, based on this research "minority" females were not shown to be susceptible to stereotype threat.

IX. IMPLICIT ASSOCIATION TEST (IAT) AND THE UNCONSCIOUS

Paetzold (2005: 334), in a section of her chapter titled "Implicit Prejudice and Stereotyping," stated that: "Even persons who consciously held no negative stereotypes and who endorse egalitarian values may be prejudiced (i.e., have negative affective reactions) below the level of consciousness" (Brendl et al., 2001; Fazio, 1990; Greenwald et al., 1998). This illustrates two main deficiencies characteristic of writers who ascribe to folk theories: First, research cited often does not support assertions made. Second, constructs such as "implicit stereotyping" or "unconscious stereotyping," which they claim to be measured, actually are not related to the measurements that are made.

The first citation by Paetzold (2005) nicely illustrates both deficiencies: Brendl et al. (2001), in a series of three experiments, demonstrated that the assumed measure of implicit prejudice or stereotyping--the Implicit Association Test (IAT)--could *not* be shown to measure prejudice. The IAT has subjects respond to White names and Black names, and to pleasant and unpleasant words. Simply stated, when subjects are faster in responding to the pairing of White names and pleasant words than when responding to White names and unpleasant words, and faster in responding to Black names and pleasant words than when responding to Black names and unpleasant words, this is mislabeled "unconscious prejudice." The response time differences might be on the order of less than 100 milliseconds, and it is possible that some Black names are less traditional and thus less familiar to White responders. As Brendl et al. (2001: 760) themselves concluded, "a response pattern in the IAT can have multiple causes [and] low familiarity items may generate the pattern of data previously interpreted as evidence for implicit prejudice."

Paetzold (2005: 334) and others sometimes cite research which obviously contradicts the point to be made, as stated, for example, in her leading sentence: "Social psychology research indicates that people may hold both explicit and implicit prejudice." Based on the non-supportive evidence provided by Brendl et al. (2001), the topic sentence should have been: "There is no reliable evidence that social psychologists can measure implicit prejudice, and less evidence that any implicit measure relates to discriminatory behavior at work."

I can only speculate as to reasons for incorrect interpretations of articles cited. If Paetzold (2005) actually read the article, or even its abstract (from which I quoted), she probably would not have cited it as she did. This leads to the possibility that she read merely the title and not the article itself.

X. ARM CHAIR RESEARCH

As Table 1 illustrates, there are a number of doctrines that seem to be based on armchair speculation, with little or no effort given to reviewing prior work or to obtaining empirical results. These include the above-mentioned testimony of Dr. Williams asserting Black/White differences on test items (Table 2) and Gardner's (1983; 1998) theory of multiple intelligences.

Another example is an article, "The Nature of Man," by Michael Jensen and William Meckling (1994). It appeared in the *Journal of Applied Corporate Finance*, and was reprinted as lead chapter of a book by Jensen (1998) published by the Harvard

University Press. In work far beyond their fields of expertise, it seems overreaching by Jensen and Meckling (1994: 15) to consider "Maslow's model in the behavioral science field . . . a major reason for the failure of the field to develop a unified body of theory" (p. 15). This is armchair speculation with a few citations, storytelling without evidence. Jensen and Meckling critiqued their own interpretation of Abraham Maslow's motivational theory—viz., the purported dependency of behavior strictly on position in a hierarchy of needs, faulting Maslow for not allowing substitution among "goods." However, as Jensen and Meckling (1994: 14) noted but discounted, "Maslow himself . . . qualifies his early statements that deny substitution." In fact, for six pages in his article, Maslow (1943: 386-391) treated *lack* of hierarchical "fixity" due to individual differences, overlapping motivations, and substitutions, finding (as admitted by Jensen and Meckling, 1994: fn. 14, who quoted Maslow) that persons "who are normal are partially satisfied in all their basic needs and partially unsatisfied in all their basic needs at the same time."

The Maslow model has not been fully accepted or even well examined in psychology and management (cf. Miner, 1984), and seems to have been misinterpreted due to inattention. A common assumption is that Maslow, founder of the American Psychological Association's Division of Humanistic Psychology, supported pleasant treatment of employees, so that more satisfied employees might perform better on the job. Instead, a body of empirical research well known to organizational psychologists opposes this (Franke and Kaul, 1978: 623-624, 636-638). And as a practitioner of clinical psychology and observer of human behavior, Abraham Maslow (1943: 393) himself opposed this Pollyanna motivational viewpoint, stating that: "If we are interested in what *actually* motivates us . . . then a satisfied need is not a motivator. . . . This point should be emphasized because it has been either overlooked or contradicted in every theory of motivation I know." Human motivation continues to be subject to misinterpretation half a century later. Work of importance should be read with care.

Supporting Maslow's actual theory, Franke (1983a: 16) stated that it "yielded the hypothesis that a high degree of dissatisfaction of lower-level [basic] needs results in behavior conducive to economic growth," and found strong and significant relationships between basic needs of managers and the economic growth rates of eleven developed nations. While Jensen and Meckling (1994) noted the danger of erecting a straw man, this in fact is what they did. They had an unclear vision of Maslow's theory and provided no evidence of negative impact

XI. LABORATORY VS. REAL WORLD: DISTORTION OF CLEAR-CUT RESULTS TO BE POLITICALLY CORRECT (NEGATIVE RE. BUSINESS)

Dovidio and Hebl (2005: 26) stated that: "Consistent with this reasoning, outside of the laboratory in generally complex employment contexts, gender and racial bias in performance appraisals and hiring and promotional decisions are generally still observed." A meta-analysis by Bowen, Swim, and Jacobs (2000) was cited for this proposition. Readers might imagine that Bowen et al. (2000) found gender biases in performance appraisals conducted in real world work organizations. In fact, results of the review were quite the reverse: "Overall, we found little evidence of gender bias in performance appraisals in actual work settings" (Bowen et al. 2000: 2205).

XII. **RESONATING FROM POPULAR CULTURE TO SCIENCE**

There seems to be correspondence between the phrenology of the 18th and 19th centuries and in the 20th and 21st the concept of “resonate,” a term supposedly linking emotional intelligence to brain science. In phrenology, bigger “bumps” on the head were related to underlying areas of the brain. Similarly, Goleman et al. (2002: 102) asserted that “Emotional intelligence . . . involves circuitry that runs between the brain's executive centers in the prefrontal lobes and brain's limbic system” Unfortunately for persons wishing to build on the concept, there is as little neurological research justifying this statement regarding emotional intelligence as there is for the existence and applicability of science of phrenology.

The concept of “resonance,” held to play a vital role in emotional intelligence and primal leadership, can be traced not to scientific studies, but to a novel by Sue Grafton, *“H” is for Homicide*, first published in 1991. It appears to derive from California jargon of the time. The protagonist in the novel thought she could “resonate” with crooks, and that this explained her success as a detective. In Goleman et al.’s (2002: 20) *Primal Leadership: Realizing the Power of Emotional Intelligence*, EI was defined as “when two people are on the same wavelength emotionally--when they feel ‘in synch’.” Footnotes to this section provided no professional literature to further define or measure the construct. Thus, it appears that its origin is simply Grafton's (1991) colloquialism. Goleman et al. (2002: 261, fn. 2) indicated that: “We see resonance and dissonance as the two major poles of Emotional Intelligence leadership. These dimensions can be thought of in terms of two dimensions: emotional tone and empathic synchrony.” Again, there were no referrals to underlying scientific literature, nor any clue as to how to measure the construct. In the interest of full disclosure, Goleman et al. might be chided for failing to cite Grafton’s (1991) fiction as the source for the key concept of resonance. We might also ask whether Grafton's fictional work is more or less scientific than that of Goleman and his colleagues. An answer might be that they both are works of fiction.

XIII. **CONCLUSION**

In 1929, when *Fortune* was launched, “business advice was then the province of a few serious researchers and writers and a great many hacks, promoters and con men” (Colvin, 2005: 84). The basic difference between management books at present and books of the 1920s is at least a *facade* of science. Professors and consultants hawk their books as having a scientific basis, but often the modern scientific basis providing credibility is limited or nonexistent.

A number of fallacious but influential doctrines have been reviewed here. Some of the doctrines seem to be rooted in the research tradition of social psychology. These generally involve laboratory studies in contrived situations with undergraduates as subjects, often with weak or non-significant results. Doctrine advocates sometimes extend their models from behavior in “games” to behavior in real life organizations, extending findings from a contrived and controlled environment into the complexity of many and shifting individual and organizational real environments. Their often illegitimate intrusions, if given credence, can have profoundly adverse influence on the

practice of industrial/organizational psychology, organizational behavior, and management.

For example, in a book titled *Social Psychology in Organizations*, the editor, John Murnighan (1993: xi), proclaimed that: "As someone trained in social psychology, I have long claimed that it is the root of all knowledge. Philosophy, anthropology, political science, economics, sociology--they are all simple derivatives of social psychology. I have also felt for some time that the most important work in organizational behavior came from researchers trained in social psychology." But this hubris-laden statement, in an edited book containing 17 chapters, is unsupported by research findings obtained within any profit-making organization.

We might be less concerned with "fictional" business books and junk science, except for the fact that they have influenced court decisions and public policy. For example, as noted in Table 1, it seems irresponsible for Sternberg and Goleman to declare that Practical Intelligence and Emotional Intelligence are more predictive of job performance than are scientifically-developed cognitive ability tests, and that PI and EI have no adverse impact. Of course, since these statements are not published in peer-reviewed journals, there is little that legitimate science can do about them.

In this article, I have concentrated on social science speculation that has not productively informed business, public policy, or the courts. Instead, the concepts described seem to have had negative effects. This is not to argue in any way that social and behavioral sciences have not contributed to our society. But these sciences, like all others, need to be conducted as *falsifiable* sciences (Popper, 1935/2002), where there is actual examination of theories and learning from findings and from practice (Latham (2001). Doctrines that are chosen for political correctness are comfortable and easily accepted in any society. But they are unlikely to be of much use and may do real damage to people and organizations.

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