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John Anthony Johnson has conducted research on the following topics in personality psychology and individual differences (1) personality, moral development and human evolution; (2) assessment of the major factors of personality; (3) psychological processes affecting the validity of self-report; (4) psychological factors influencing the conduct of scientific research; and (5) Internet-based personality research. These interests and accomplishments are best understood by tracing his personal and educational development, so this entry begins with a review of his personal background.

Personal Background

John A. Johnson was born November 11, 1953, in Ann Arbor, Michigan, to John C. and Lorraine U. Johnson. In 1959, he and his family moved to State College, Pennsylvania. During his teens he developed broad interests in the arts, humanities, and sciences by reading extensively from his parents' diverse library. He was particularly fascinated by books on the biological basis of human nature such as Robert Ardrey's *African Genesis* and *The Territorial Imperative* and Konrad Lorenz's *On Aggression* and *Studies in Animal and Human Behavior*.

Undergraduate Work at the Pennsylvania State University

John A. Johnson's experiences as an undergraduate laid the basis for his research in graduate school and beyond. Initially he enrolled in the computer science program at the Pennsylvania State University in 1971. But his continuing fascination with the biological basis of human behavior led him to change his major to psychology in his second year and to add biology as a second major the following year.

Undergraduate psychology professors who had a notable impact on his thinking included Robert M. Stern, with whom he completed a psychophysiological laboratory course and a graduate seminar on Darwin and the emotions, Dale B. Harris, who supervised an independent study course on evolution and morality, and Walter B. Weimer, whose writings kindled an interest in philosophical and psychological issues in the conduct of science. These interests were reinforced by one of Weimer's graduate students, Neil P. Young, who introduced Johnson to the thinking of Thomas Kuhn and Paul E. Meehl. This led Johnson to design a final independent study course on psychological problems in attaining valid scientific knowledge. Supervised by biology professor Carl S. Keener, the course dealt with the psychological attraction to absolute presuppositions as described by R. G. Collingwood and philosophical root metaphors as described by Stephen Pepper.

Set to graduate with B.S. degrees in both psychology and biology in 1976, Johnson applied to a half-dozen doctoral programs but was accepted by none of them. He therefore applied to and was accepted into a master's degree program in psychology at the State University of New York at Brockport.

Graduate Work at SUNY Brockport and The Johns Hopkins University

In one year at SUNY Brockport, Johnson completed all of his coursework for the master's degree and successfully defended his thesis proposal, a study designed to investigate differences in reaction time to alphabetic and facial stimuli presented to the left and right cerebral hemispheres. But the thesis research was never conducted because by the end of the year Johnson had been offered admittance into all five of the PhD programs to which he had applied. He accepted the offer from The Johns Hopkins University.

Johnson's plan was to work with chairman William Garvey, who had an NSF grant to study scientific communication and who taught a graduate seminar on the social psychology of science. But Brockport professor and Hopkins Ph.D. Steven Snodgrass told him to keep his mind open because sometimes graduate students find a better fit with a faculty member other than the one they plan to work with. He mentioned to Johnson another possible mentor: Robert Hogan, who studied personality and morality from an evolutionary perspective.

Johnson found that he enjoyed Garvey's seminar on the social psychology of science, but that his experiences in his first year did not lead to any concrete research plans. He therefore approached Robert Hogan, who invited him to become involved in several ongoing projects. Three years of work under Hogan led to 11 publications on individual development and assessment where Johnson listed Johns Hopkins as his affiliation. The sections below describe his graduate school research in areas that became life-long interests: (1) personality, moral development and human evolution; (2) assessment of the major factors of personality; and (3) psychological processes affecting the validity of self-report.

Personality, Moral Development, and Evolution

Sharing Hogan's view that moral behavior is evolutionarily advantageous, Johnson coauthored a chapter on the evolution of moral development for his first professional publication (Hogan, Johnson, & Emler, 1978). Hogan promptly gave him another half-finished project on moral judgment, personality, and attitudes toward authority. Johnson completed the project and turned it into a publication (Johnson, Hogan, Zonderman, Callens, & Rogolsky, 1981). Johnson and Hogan then teamed up with undergraduate William Laufer (Laufer, Johnson, & Hogan, 1981) to demonstrate how personality could distinguish between drug users and murderers.

Assessment of the Major Factors of Personality

At the time Johnson joined Hogan's research group, Hogan was shifting his research focus from moral development to a broader model of personality that could be applied to career choice and job performance. Hogan ran a small business in Baltimore called Personnel Assessment and Selection Service. In this business he administered psychological tests to help students make educational and career decisions and to help employers hire effective workers. He invited Johnson to assist in the data analyses for some of his selection studies, and in a police selection study this led to a publication (Johnson & Hogan, 1981b). Hogan also introduced Johnson to his colleague John L. Holland, a world-famous vocational psychologist. Johnson served as a teaching assistant in one of Holland's career seminars and eventually published an article on career decision-making (Johnson, Smither, & Holland, 1981).

One constraint Hogan faced in his applied work was copyright restrictions with the commercial personality inventories he used. The solution, as Hogan saw it, was to create his own omnibus inventory that covered all of the important aspects of personality that might be related to career choice and job performance, and to conceptualize those basic aspects of personality within a new theory of personality that he called *socioanalytic theory*. The first public exposition of socioanalytic theory as a basis for personality measurement was an APA presentation coauthored with Johnson (Hogan & Johnson, 1981).

Socioanalytic theory assumed that the five factors identified by Warren Norman (1963) as "an adequate taxonomy of personality attributes" did indeed describe the full range of important individual differences at a broad level. Norman's (1963) study had been conducted with trait-adjective ratings. To see whether the five factors could also be assessed with personality inventory items, Hogan and Johnson (1981) created scoring keys for the California Psychological Inventory (CPI; Gough, 1975) that yielded scores for Norman's factors. Factor

scores from archival CPI data were correlated with Q-sort impressions and job performance data to demonstrate their validity and usefulness (Johnson, 1997a).

Success in assessing the Norman factors with the CPI laid the groundwork for creating new instruments. Johnson, under Hogan's guidance, authored a set of rating scales, anchored by pairs of personality trait adjectives, for assessing the Norman dimensions. This set of scales, which eventually became known as the Bipolar Adjective Rating Scales (BARS), was never published, but has been used in a number of studies (e.g., Johnson, 1983, 1997a, Johnson, Cheek, & Smither, 1983).

The largest undertaking for the socioanalytic research program was the creation of an entirely new personality questionnaire called The Hopkins Personality Inventory (HPI). Hogan placed Johnson in charge of constructing the initial item pool and developing the preliminary HPI scales. After Johnson and Hogan left Hopkins, Hogan revised and renamed the inventory, publishing it as the Hogan Personality Inventory (HPI; Hogan, 1986; Hogan & Hogan, 1992).

Psychological Processes Affecting the Validity of Self-Report

For his dissertation, Johnson expanded a paper that he had already published (Johnson, 1981) that addressed the way in which psychological dynamics affected the validity of self-report personality scales. Johnson challenged the accepted view at that time, which was that valid endorsement of personality items required respondents to assess objectively whether an item literally described their thoughts, feelings, or behavior, without regard to how observers would judge that response. An extensive literature on "social desirability bias" had always assumed that when respondents think about how observers might judge their responses, they would be inclined to respond in ways that are approved by others rather than in ways that disclose their actual thoughts, feelings, and behaviors. Johnson offered an alternative view of "item response

dynamics" (i.e., the cognitive and emotional processes underlying responses to personality items), based on facts about human evolution.

Johnson, like most students of human evolution, regarded human beings as highly social creatures who are intrinsically interested in what others think of them. Today, evolutionary psychologists say that our ability to understand what others think about us is governed by a capability called Theory of Mind (ToM; Johnson, 2012). To possess an adequate ToM is to be able to grasp the thought processes of another person. Evolutionary psychologists assume that grasping the attitudes and intentions of others had enormous survival value for our ancestors. Over evolutionary time, ToM evolved to allow coordinated, cooperative activities with allies and defensive behaviors against enemies. The accuracy of ToM varies according to brain development, from deficiencies or even absence of ToM in individuals on the autism spectrum, to a robust and accurate ToM in individuals we would describe as highly empathic or intuitive.

Because nearly every adult has an active ToM, Johnson believed it was unrealistic to expect people to not think about how others might view their responses to personality items. In fact, argued Johnson, valid item endorsements require respondents to assess what kind of impression an item endorsement would make on a typical observer and to respond in a way that is consistent with the impressions they usually make on observers.

People do sometimes respond to personality items in ways that are factually inaccurate, just as people sometimes make factually inaccurate statements in everyday life. What matters for valid assessment is not factual accuracy per se, but whether impressions made on a personality scale (defined by the scoring key) correlate with the person's reputation in everyday life. Similarly, people often endorse items in ways that psychologists describe as "socially desirable," just as people often behave in socially desirable ways in everyday life. But some people also

describe themselves in socially undesirable ways (e.g., as neurotic or anti-social), just as people behave in socially undesirable ways in everyday life. What matters for self-report validity is the correlation between socially desirable/undesirable item responses and socially desirable/undesirable behavior in everyday life.

Johnson's dissertation built upon Mills and Hogan's (1978) earlier demonstration that the validity of self-reports (defined as correlations between self-reports and acquaintance ratings) was higher for individuals with higher levels of empathy. Empathic individuals have an accurate ToM) and can therefore assess more correctly how their responses to personality items will be judged by others. They can therefore endorse items in ways that are consistent with the way that others typically perceive them. Johnson's (1981) research supported this view by demonstrating that the consistency of response to identical items is not a function of traits that would detract from the literal truthfulness of reports (dishonesty or carelessness) but, rather, traits related to skillful self-presentation (social competency and social engagement).

A final article by Johnson while still in graduate school (Johnson & Hogan, 1981a) brings together the topics of morality and self-presentation on personality scales. The article is a response to a criticism that the Survey of Ethical Attitudes (SEA; Hogan, 1970) is contaminated by political attitudes and is subject to dissimulation and social desirability bias (Meehan, Wohl, and Abbot, 1979). Meehan, et al. found that respondents instructed to complete the SEA while imagining they were applying for a position with a politically liberal or conservative social action group scored more in the direction of the ethics of personal conscience or ethics of social responsibility, respectively. Johnson and Hogan's (1981a) response anticipated by several decades the research of Jonathan Haidt (2001; Graham, Haidt, & Nosek, 2009). Like Haidt, Johnson and Hogan proposed that political orientation and moral values are inextricably

intertwined, and that both are expressions of evolved, non-rational aspects of personality. Also, like Haidt, Johnson and Hogan pointed out that the field of psychology is overwhelmingly liberal in political orientation and that psychologists often denigrate conservatives, even though both liberals and conservatives are necessary for a viable society.

Professional Contributions after Graduate School

Personality, Moral Development, and Evolution

Johnson also studied the flip side of moral behavior—deviance. Johnson's (1983) research suggested that deviance could be a general personality factor underlying criminality, creativity, and mental illness (Johnson, 1983). Additional research examined the operation of Theory of Mind in a criminal population (Johnson & Worley, 1987). Together, these studies indicated that criminals do not have personalities that are categorically different from non-criminals. Rather, criminality is a function of somewhat higher or lower levels of normal personality traits such as emotional stability, empathy, agreeableness, conscientiousness, and experience-seeking. This finding is similar to modern conceptualizations of personality disorders as exaggerated forms of normal personality differences.

In the late 1990s, Johnson collaborated on a psycholexical study of moral virtue (Cawley, Martin, & Johnson, 2000). Just as Allport and Odbert (1936) had compiled a list of personality trait terms from the dictionary that eventually led to the recognition of the five major personality factors, Cawley scanned the dictionary for terms related to moral virtue. Factor analyses of virtue terms revealed four factors that were meaningfully related to personality but not to Kohlberg's stages of cognitive development. An analysis of results concluded that moral virtue is a function of evolved, non-rational aspect of personality rather than reasoning and cognitive development.

Johnson's most recent research on morality and evolution can be found in conference presentations. A presentation at the Human Behavior and Evolution Society meeting (Johnson, 2007) develops an earlier presentation (Johnson, 1996) arguing that evolutionary psychology can resolve a debate in philosophy about whether utilitarian or deontological ethical theorists are closer to the truth about morality. This evolutionary account suggests that moral emotions evolved to signal behaviors that were causally efficacious in facilitating or impeding survival and reproduction. Behaviors that felt "good" or "right" therefore had the utilitarian function of supporting the survival of genes. Until evolutionary thinkers such as Darwin, however, most people have remained oblivious to the utilitarian function of good behaviors. From the moral realism of young children (which, contrary to Piaget, remains in most adults) to the deontological ethics of Kant and his followers, goodness is felt to be an intrinsic or inherent property of moral behaviors, and moral rules are felt to be as timelessly true as natural laws. But feelings about the truthfulness about moral goodness do not indicate the existence of moral "truths." Rather, moral emotions are only a sign that in the evolutionary past the behavior was *good for* (had utility for) perpetuating genes. Deontological philosophers (as well as most non-philosophers) continue to remain oblivious to the utilitarian function of morality. However, even classical utilitarian philosophers, who wrote only on the utility of behavior for promoting happiness, overlook the evolutionary utility of morality. The actual utility of morality, argued Johnson, is best seen through an evolutionary lens.

Johnson's most recent research on morality examines perceptions of fairness about wealth inequality (Johnson, 2011). Previous research indicates that wealth inequality has serious negative consequences on the health and psychological well-being of those who have less wealth. Johnson did not entertain the commonly proposed solution of taxing the wealthiest

members of society to redistribute wealth for two reasons. First, the wealthiest members of society will resist redistribution by using their influence over the political system. Second, redistribution ignores the source of inequality, which is wealth acquisition. Johnson hypothesized that people will judge wealth acquisition as fair if something of equal value is exchanged for what is acquired without violence or deception. He then discusses six common economic transactions that are commonly accepted but that may violate one or more of those conditions: taxation, inheritance, rent-seeking behavior such as lending with interest, fractional reserve banking, exotic financial derivatives, and insurance. Reforming these practices could help to alleviate perceived wealth inequality.

Assessment of the Major Factors of Personality

Johnson's work on the original HPI and Bipolar Adjective Rating Scales (BARS) is described in a chapter on positive and negative forms of deviance (Johnson, 1983). Additional research employing the BARS is described in Johnson (1997a) and Johnson (2004). The 1983 chapter discusses at length the difficulty in distinguishing a positive, creative form of nonconformity, called *low ego-control* by Jack Block, from a negative, more anti-social form of nonconformity, low conscientiousness. In fact, Hogan gave up trying to measure ego-control and conscientiousness separately and joined all of the facets of the two scales into a broad dimension he initially called Conformity (Hogan & Johnson, 1981) and later, Prudence (Hogan, 1986). Johnson (1983) proposed that sociability and ego-control explain the structure of Holland's hexagonal RIASEC model of vocational-personality types. This proposal was confirmed by Costa, McCrae, and Holland (1984), once it became clear that what was called low ego control overlaps considerably with Costa and McCrae's construct Openness to Experience.

Johnson spent his 1990-91 sabbatical year at the University of Bielefeld in Germany, intending to conduct research on properties of personality items because the Bielefeld psychology department had a number of experts on this topic. While he did in fact conduct and publish research on this topic, a research colloquium introduced him to a new integration of the Five-Factor Model and Wiggins' circumplex model of personality called the Abridged Big-5 Circumplex (AB5C; Hofstee, de Raad, & Goldberg, 1992). Johnson immediately grasped the usefulness of the AB5C model and began employing it in his research.

His first AB5C publication (Johnson & Ostendorf, 1993) explained how competing conceptualizations of the five factors from different research programs (e.g., Intellect or Openness for Factor V) could be explained by the secondary loadings of researcher's scales, described in AB5C terms. This research also identified a shared core of agreement across research programs about the character of the five factors. His next AB5C publication (Johnson, 1994a) focused on disputes about Factor V of the FFM, but also compared the AB5C characterizations of all scales from the HPI and NEO PI. Yet another AB5C publication (Johnson, 1994b) again demonstrated how that model could illuminate similarities and differences between two major inventories, the CPI and HPI. Finally, in a comparison of the ability of three major inventories (CPI, HPI, and NEO PI) to predict acquaintance ratings, Johnson (2000b) found that NEO scales generally predicted those ratings better than the other inventories, but that the ability of any inventory scale to predict an acquaintance rating depended on the AB5C character of both the scale and the rating.

Psychological Processes Affecting the Validity of Self-Report

Johnson's research at Bielefeld on personality item properties eventually led to an article published in a special issue of *Multivariate Behavior Research* honoring Jerry Wiggins. Wiggins

was a pioneer in the study of item properties and, like Johnson, saw the personality assessment process as a form of social communication. The Johnson (2004) article again compared the standard view that personality item responses are mere self-description with his view that item responses are attempts to create a desired impression on an imagined observer. These two views make divergent predictions on how many properties of personality items, including item ambiguity, content, social desirability, and subtlety, will moderate the validity of personality items. As Johnson predicted, results strongly supported the latter view.

Another test of his theory of item response dynamics involved Harrison Gough's suggestion that *ego-syntonic* items (items that respondents enjoy answering) are better than items that are less ego-syntonic (Johnson, 2006). If item responses are merely self-descriptions, then respondents' feelings during the response process should be irrelevant. But Johnson's alternative view of item response dynamics, that item responses are attempts to communicate a desired impression, predicts that ego-syntonic items will be more valid. Johnson (2006) had respondents rate their enjoyment of responding to items on the CPI immediately after answering them, and found that, indeed, highly ego-syntonic items were more valid than less ego-syntonic items.

Finally, Johnson collaborated once again with his graduate school mentor (Johnson & Hogan, 2006) to discuss self-presentation in the context completing personality inventories for personnel selection. In addition to presenting evolutionary arguments for looking at personality test-taking as a form of social interaction rather than a mere reporting of facts, Johnson presented a review in this chapter of a number of previously unpublished studies relevant to self-presentation during personnel selection. Results from these studies are consistent with Johnson's earliest work on item response dynamics and personality scale validity. Of particular note is a study of unlikely virtues (desirable but extremely rare behaviors). Unlikely virtue scales are

normally used to detect lying. But Johnson demonstrated that unlikely virtues are multidimensional, and that the different dimensions of virtues, while unlikely to be literally true, show a convergent and discriminant pattern of correlations with acquaintance ratings of these dimensions.

Psychological Factors Influencing the Conduct of Scientific Research

When he was only an undergraduate student, Johnson was forever impressed by Walter Weimer's discussions of the ways in which actual practice of science deviates from textbook descriptions of the "scientific method." He took special interest in examples of emotional commitment to the philosophical assumptions underlying scientific theories. This interest inspired a research study involving behavioral scientists with different theoretical orientations (Johnson, 1988). The study demonstrated that the theoretical orientations were differentially associated with Stephen Pepper's philosophical root metaphors *organicism* versus *mechanism*, and that organicism and mechanism were associated with distinctive personality traits. Johnson (2011) followed up this article with a *Brain and Behavioral Science* commentary arguing that the study of morality is particularly prone to non-rational, non-empirical influences.

As a personality and evolutionary psychologist, Johnson was particularly interested in the impact of personal factors in those two areas. He wrote at length on how the conflicting worldviews and goals of personality psychologists and social psychologists underlie what has been called the "person-situation debate" (Johnson, 1999b, 2001). On the surface, this debate looks like a disagreement about what is true, with social psychologists claiming that social environment is a stronger determinant of behavior than stable personality traits. In fact, extreme versions of social environmentalism claim that behavior varies continuously with changes in the environment, so that there is no such thing as stable personality traits.

Johnson's first contribution to understanding the person-situation debate was his chapter in the *Handbook of Personality* (Johnson, 1997b), an often-cited source on the trait concept. In this chapter he explains why personality traits and situations are not two independent concepts because every personality trait refers implicitly to the relevant situational context. Because traits and situations are inextricably intertwined, they cannot be seen as conflicting causal forces (Johnson, 1999a, 2009, 2015). Johnson speculated that what looks like an empirical claim from social psychologist about situations being more "powerful" than traits may actually be an attempt on the part of social psychologists to delegitimize the measurement methods of personality psychologists and validate their own experimental methods because these two groups were competing for space in the same journals (Johnson, 1999b). This conflict eventually led to the sectioning of the *Journal of Personality and Social Psychology*, with Robert Hogan assuming first editorship of the new *Personality Processes and Individual Differences* section.

Digging even deeper into the motives underlying situationism, Johnson (2001) hypothesized that critics of the personality trait concept such as Walter Mischel and attribution theorists were worried that the concept of stable personality traits implied lack of freedom to improve one's condition, whereas situationism implied the potential for positive change. Johnson (2001) pointed out, however, that the desire for freedom is not a good reason for claiming that situations are more powerful than traits, and that volitional freedom is a philosophical topic that transcends the scientific topic of traits and situations.

Johnson was of the opinion that the trait-situation controversy in personality and social psychology was a smaller version of the broader nature-nurture debate. Johnson saw the nature-nurture debate as a pseudo-scientific issue that concealed deeper, personal concerns about the desire for positive change. Specifically, those who claimed that nurture (learning) is more

important than nature (biology) worry that anything "biological" (genes, hormones, brain structures) implies fixedness and hopelessness about positive change, whereas learning implies potential for positive change. This is an unbearable thought for researchers concerned with issues such as gender and social class inequality. As an evolutionary psychologist with training in biology, Johnson found absurd the idea that nature and nurture are separate forces. The kinds of changes that are possible through learning always depend on existing biology, and when changes occur, biological structures and processes change. Yet the desire to see change as a function of social learning rather than biology is so strong that it has actually misled researchers into interpreting data exactly backwards from what the results indicated (Johnson, 1993).

Internet-based Personality Research

Johnson was quick to see the potential of the Internet for personality psychology, and began working with the World Wide Web as soon as the Mosaic Web browser became available in 1993. He wrote about how the Web was particularly significant for researchers like himself who worked at small, undergraduate campuses with limited technological and human resource support for research (Johnson, 2000b). Johnson, who lacked access to graduate students or even an answer sheet scanner, was forced to enter data from personality answer sheets into the computer by hand prior to the advent of the Web. Furthermore, his samples were limited to his relatively small undergraduate classes. When the Web became available, Johnson realized that this was an opportunity to collect data without the need for transferring pencil marks from paper answer sheets, and that very large samples from around the world were now available.

Because copyright restrictions on commercial personality inventories prevent users from creating Web versions of the inventories, Johnson spent his 1999 sabbatical collaborating with Lewis Goldberg at the Oregon Research Institute on adapting scales from the public-domain

International Personality Item Pool (IPIP; Goldberg, 1999) for use on the World Wide Web. Johnson was sufficiently impressed with the IPIP after his stay at ORI that he agreed to serve as an unpaid consultant for the IPIP website, a role he continued to play even after retirement. The sabbatical research led to the Johnson (2000b) paper and then to a paper on detecting invalid protocols from Web-based inventories, which he presented to the Bielefeld-Groningen Personality Research Group in the Netherlands (Johnson, 2001).

The question of protocol validity arises with Web-based personality assessment because participants are usually responding anonymously and without supervision, raising the possibility that some might not take the task as seriously as participants who are completing questionnaires in a laboratory. Johnson (2001, 2005a) addressed this question by described ways of detecting invalid protocols and comparing rates of invalid responding on the Web versus more controlled conditions. In the same year he also published a study on implementing an inventory of the five major personality factors for use on the Web (Buchanan, Johnson, & Goldberg, 2005) and presented his experiences as the IPIP consultant in a symposium about the IPIP and the future of public-domain personality measures (Johnson, 2005b). Johnson also wrote and published an article based on all of the presentations at that symposium (Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, and Gough, 2006).

Johnson's expertise in Web-based research was recognized by the American Psychological Association, which led to an invitation to co-edit a book published by the APA, *Advanced Methods for Conducting Online Behavioral Research* (Gosling & Johnson, 2010). Johnson (2010) contributed a chapter on Web-based self-report personality scales to the book. The year after he retired from his position at Penn State he published an article on the development of a 120-item IPIP inventory designed to measure 30 facets of the Five-Factor

Model (Johnson, 2014). Scale development for the inventory was based on 10 years of data collected from a site designed to educate the public about the FFM. Over a million people have completed the IPIP inventories at <http://personal.psu.edu/~j5j/IPIP/>, which awarded Yahoo! Internet Life's Incredibly Useful Site of the Day for October 30, 1998 and continues to receive attention on Internet media sites such as Tech Insider (Loria, 2015) and BuzzFeed (Massa, 2016).

Johnson's expertise on Web-based personality assessment was also recognized by Joseph Carroll, an English professor at the University of Missouri-St. Louis and a leading exponent of applying evolutionary theory to the study of literature. In January of 2004 Carroll began a correspondence with Johnson about online personality assessment that soon led to a collaboration that included Jonathan Gottschall and Daniel Kruger, who also studied literature from an evolutionary perspective. This four-person research team designed a Web site in which people who were familiar with 19th-century British literature rated 435 characters from 134 novels on characteristics such as attractiveness, antagonist/protagonist standing, motives, mate preferences, and personality. They also rated their emotional reactions to the characters. These ratings were subjected to extensive statistical analyses guided by evolutionary hypotheses about antagonistic structure and dominance suppression in egalitarian groups. Results were presented in over a dozen publications, including the journals *Evolutionary Psychology* (Johnson, Carroll, Gottschall, & Kruger, 2008) and the *Journal of Research in Personality* (Johnson, Carroll, Gottschall, & Kruger, 2011) as well as literature journals. A full summary of the project was published as a book, *Graphing Jane Austin: The Evolutionary Basis for Literary Meaning* (Carroll, Gottschall, Johnson, & Kruger, 2012). Results also appeared in a chapter in a book about consilience between the humanities and sciences (Carroll, Gottschall, Johnson, & Kruger,

2016). This Web-based research program exemplifies Johnson's lifelong, interdisciplinary interests that began with reading books from his parents' diverse home library.

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