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Early Life and Educational Background

Anderson was born in northern Indiana in 1952. He grew up on a small family farm and graduated from North Liberty High School in 1971. While in high school, he earned varsity letters in baseball, basketball, and golf and was one of four co-valedictorians. The South Bend Kiwanis Club named him Athlete of the Year for the 8-school district.

Anderson began his college career at the University of Notre Dame as a math major but dropped out to join the US Army Reserves. He served most of 6-year enlistment as a track and wheel vehicle mechanic but ended up as a clerk processing security clearances in a Civil Affairs unit during his first 2 years in graduate school.

Upon completing basic and AIT training (Fort Leonard Wood, Fort Knox), Anderson restarted his college career at Butler University (Indianapolis) in January 1973. He graduated after seven semesters (1976) with majors in psychology and sociology. His primary undergraduate professor (five different courses) was Dr. Sally Bell Beck, an outstanding teacher, motivator, and

lifelong friend. Other key teachers were Dr. William Hepler and Dr. Burrton Woodruff.

Anderson received his M.A. in 1978 under the tutelage of Less Ross, and his Ph.D. in 1980 with J. Merrill Carlsmith as his advisor, both from Stanford University. He also benefited greatly from courses and/or research projects with Leonard Horowitz, Gordon Bower, Albert Bandura, and Walter Michele, among others.

Professional Career

Anderson served on the faculties of Rice University, Ohio State University (visiting), and the University of Missouri – Columbia before joining Iowa State University as Chair of the Department of Psychology in 1999. He served as Chair for 6 years.

He has received teaching and advising awards at the undergraduate and graduate levels. He has been awarded Fellow status by the Association for Psychological Science, the Society of Experimental Social Psychologists, the Society for the Psychological Study of Social Issues, and the American Psychological Association, among others.

Anderson's 200+ publications span a wide range of areas, including judgment and decision making; attributional style and depression, loneliness, and shyness; personality theory and measurement; attribution theory; and human aggression.

Professor Anderson is one of the most widely cited scholars in social psychology, in textbooks, and in the psychological science literature in

general. Since the 1990s, most of his work has focused on the development of a General Aggression Model (GAM) designed to integrate insights from cognitive, developmental, personality, and social psychology. This model is now widely used by scholars in psychology, communications, and criminology. His 2002 *Annual Review of Psychology* article on “Human Aggression” (with Brad Bushman), which used GAM to organize the review of major findings in the aggression domain, has received over 2600 Google Scholar citations, and ranks 4th in citations among the 22 *Annual Review* articles published that year. Later elaborations on GAM also have been well received. For example, his 2011 *Psychology of Violence* article (with Nathan DeWall and Brad Bushman) was chosen in 2012 as one of the “Best of 2011 Violence Research” articles by a panel of violence scholars selected by the editor of APA’s journal *Psychology of Violence*.

As of this writing, Google Scholar reported over 30,000 citations to Dr. Anderson’s scholarly publications, with an overall h-index of 81, and a last-5-year h-index of 55. Google Scholar citations also ranked him 1st among Media scholars, 2nd among Aggression scholars and 2nd among Violence scholars. He also was ranked in the top 30 of social psychologists and top 50 of all psychologists.

Studies of eminence among social and personality psychologists have repeatedly identified Dr. Anderson as one of the top contributors to the field. For example, a 2006 study published in the Society for Personality and Social Psychology’s bulletin *Dialogue* (Engelberth 2006) ranked him 2nd out of over 3000 scholars in total textbook citations in six major social psychology textbooks. Furthermore, he was the youngest of the top 10 scholars in that list. Similarly, Dr. Anderson was 1 of only 31 social psychology scholars identified as ranking in the top 10 % of both *career* and *recent* citations, in a 2010 *Personality and Social Psychology Bulletin* article (Nosek et al. 2010).

In a 2014 article published APA’s *Archives of Scientific Psychology*, Dr. Anderson was listed among the top 200 “Eminent Psychologists of the Modern Era,” (defined as post-World War II

(Diener et al. 2014). The authors of this article estimated that there were well over 10,000 scholars working in the field during this time span, perhaps as many as 20,000.

Research Interests

Belief perseverance. Dr. Anderson published the first studies to show that social theories – beliefs about how variables in the social world are related to each other – tend to persist even when the total evidential base of the theory is convincingly destroyed. The first article appeared in the *Journal of Personality and Social Psychology* in 1980 (Anderson, Lepper, and Ross). His subsequent articles on theory perseverance appeared in *Social Cognition* (1982, 1985, 1995, 1998), *Journal of Experimental Social Psychology* (1983), *Personality and Social Psychology Bulletin* (1992), *Journal of Personality and Social Psychology* (1986), and the *Journal of Educational Psychology* (1996). Key findings of these and related studies included that (a) beliefs that are based on some type of causal explanation are especially resistant to change; (b) the process of generating a causal explanation for some event, even hypothetical ones, can generate a belief or theory that becomes resistant to change; and (c) inducing people to generate causal explanations that contradict their initial belief leads to belief change and can reduce or eliminate the perseverance effect. This work led to an explanation-based persuasion communication intervention that successfully debunked mistaken beliefs about HIV transmission and that increased participants’ willingness work with persons with AIDS. Dr. Anderson published over half a dozen additional book chapters and encyclopedia articles on this general topic, including applications to the clinical domain. His most recent paper on this topic was published in 2007.

Attribution theory. Throughout the 1980s and 1990s, Dr. Anderson was a leading scholar on three of the major thrusts of attribution theory, the attribution process (when, how, and why do people generate attributions?), the structure of attributions (how do various attributions cluster, what dimensions distinguish them?), and the

attribution effects literature (what impact do attributions have on behavior, affect, and cognition?). He was the first to note the importance of *strategy* attributions (1980) and their role in protecting a person's motivation level even in the face of initial failure and their role in directing future efforts in thoughtful (i.e., strategic) ways. His work with Bernie Weiner, Douglas Krull, and many others led to the development of a two-stage processing model, the first of which was largely automatic (and thereby subject to momentary priming effects), the second of which was more thoughtful and controlled. His general explanation process model was useful not only in the attribution domain, but it later played a key role in his work to develop what now is known as the General Aggression Model. He developed and tested these theoretical notions in multiple domains, including work on motivation, overcoming failure, and the clinical contexts of loneliness, shyness, and depression. For example, in a series of experimental and correlational studies, he showed that the most important attribution dimension in terms of predicting depression was personal controllability. His work with Sedikides further showed that people normally think about attributions in categorical terms (e.g., effort, ability, strategy), not dimensional terms. This work also was found to have implications for person memory and implicit personality theory and memory distortions. His attributional style work was found to generalize to Chinese studies and that differences between average levels of depression and loneliness between Chinese and American college students was fully accounted for by culturally based differences in attributional style. His work in this domain appeared in numerous journals, including the *Journal of Personality* (1980), *Journal of Experimental Social Psychology* (1983), *Journal of Personality and Social Psychology* (twice in 1983, 1988, 1991, 1994), *Social Cognition* (1985, 1986, 1991, 1995, 1998), *Basic and Applied Social Psychology* (1989, 1995), *Personality and Social Psychology Bulletin* (1991, 1998, 1999), and *Current Directions in Psychological Science* (1997). Several book chapters applied the findings to clinical and other judgment domains.

Imagination effects. Overlapping many of Dr. Anderson's research interests and studies is a long-standing interest in how merely thinking about or imagining an event influences subsequent thoughts, emotions, motivations, and behaviors. This ties together his interests in individual differences and personality theory, his work on knowledge structure approaches to social-cognitive theory, and his work on situational effects across many domains. The belief perseverance work, the attribution theory work, and all of his subsequent work on the General Aggression Model are highly interrelated to his developing a knowledge structure model of the dynamics between what a person brings with them to a situation and what the situation both enables and restricts. For example, simply imagining how or why a risky person might be a better fire fighter than a person who typically makes safe (conservative) decisions changes one's implicit personality theory about fire fighters, their interpretations of new data on the topic, and their willingness to change their mind about who would or would not be good at this job. Similarly, the ease with which one can imagine oneself returning for a minimum number of therapy sessions influences one's intentions to do so; inducing a person to imagine such scenes actually increases such return behavior. Similar imagination effects have been shown by Dr. Anderson's team for multiple behaviors, including blood donation. Similar imagination processes have been found to produce stereotype-based biases in a host of domains, including reality monitoring failures. In addition to the many studies mentioned in the perseverance and attribution sections, other articles on this general topic have appeared in *Journal of Personality and Social Psychology* (1983, 1987), *Social Cognition* (1987), *Journal of Experimental Social Psychology* (1983), and the *Journal of Clinical and Social Psychology* (1987).

Temperature and aggression. Dr. Anderson's first empirical psychology publication was essentially a methodological correction article published with J. Merrill Carlsmith in 1979 in *Journal of Personality and Social Psychology*. In that article, the authors challenged earlier

empirical work that had suggested that aggressive behavior increased in likelihood as ambient temperature increased from cool to uncomfortably warm (i.e., 80 °F or so) and then sharply decreased as temperature further increased. Carlsmith and Anderson created a better-defined population of temperature days than had been used in the past and applied a sampling procedure that allowed them to get a reasonable estimate of the temperature distribution in the USA over a several year period and then applied this to previously published data on riots in the USA during the 1960s and early 1970s. Their results clearly showed that the likelihood of a riot breaking out did not decline during hot days but instead continued to climb well past the previously believed peak. Since that initial article, Dr. Anderson became the foremost authority on temperature effects on aggression, based on his many field studies, several key laboratory experiments, and theoretical developments made by him and his colleagues. His key articles have been published in *Psychological Bulletin* (1989, 1992), *Journal of Personality and Social Psychology* (1979, 1984, 1987, 1996, 1997, 2005), *Personality and Social Psychology Bulletin* (1995, 1996), *Advances in Experimental Social Psychology* (2000), and *Current Directions in Psychological Science* (2001). More recently, Dr. Anderson has expanded the temperature/aggression domain to the study of the implications of global warming on violence. In one recent chapter, for example, Anderson and DeLisi (2011) showed that there are at least three separate ways that rapid global warming will likely increase violence rates around the world, some of which has already been documented. The three are (a) the standard heat-aggression effect, (b) increased war and fighting resulting from resource competition and eco-migration, and (c) increased proportion of the adolescent and adult population with known violence risk factors, the result of poor childhood nutrition, and a wide array of environmental factors at play during pregnancy and childhood.

General Aggression Model (GAM). In the late 1980s and throughout the 1990s, Dr. Anderson began attempting a broad theoretical integration of the many mini-theories of

human aggression. The social-cognitive revolution as well as developments in biological and neurological psychology set the stage for this development. Many scholars in various domains were often discussing the same basic aggression phenomena, but using different language. Dr. Anderson's team conducted a number of studies designed to test some of these ideas about automatic versus controlled cognitive processes, their relationship to anger and other aggression-related emotions, and on how personality and situational variables combine to create conditions that elicit behavior intended to harm another person, i.e., aggression. Their studies included situational manipulations such as pain (versus no pain), uncomfortable temperatures (versus comfortable), insults versus no insults or praise, images of guns versus mountains, and violent versus nonviolent media. Individual difference variables included trait aggression, Big 5, and others. Initially, they put together a model called the "General Affective Aggression Model," but it became apparent that some standard aggression manipulations increased aggression without directly influencing aggressive affect. Therefore, when in 2002 Anderson and Bushman published their *Annual Review of Psychology* article on the human aggression literature, they called the integrated model the "General Aggression Model." It was an integration of social learning theory (e.g., Bandura), social cognitive theory (e.g., Mischel), cognitive neoassociation theory (e.g., Berkowitz), script theory (e.g., Huesmann), social information processing theory (e.g., Dodge), excitation transfer theory (e.g., Zillmann), and a host of other personality, social, and biological models too numerous to mention. As noted earlier, one key aspect of GAM was borrowed directly from Dr. Anderson's earlier work on attribution theory and explanation processes, heavily influenced by other attribution scholars as well as appraisal and emotion scholars. One key advantage of GAM is that by putting individual differences, personality traits, and environmental (situational) factors all into a common language, it becomes clearer to theorists just how the different types of factors may interact in producing various aggression-related outcomes. For example, in one set of

studies Dr. Anderson and colleagues showed that different developmental experiences (growing up in a hunting versus nonhunting family) result in different knowledge structures about hunting and assault guns and that such knowledge structure individual differences determine whether pictures of a hunting gun or of an assault gun are likely to increase aggressive thoughts and later aggressive behavior (with Bartholow, Benjamin, Carnagey, 1998, 2005). In other words, GAM is able to theoretically link developmental processes, personality differences, and aggressive cognition responses to a specific stimulus type, in order to predict aggressive responses to a minor provocation. Subsequent articles and book chapters have expanded GAM, applying it to topics such as aggressive personality disorders, violent crime and delinquency, intimate partner violence, global warming consequences on violence, development of violence-prone (and nonviolent) children and adolescents, and the cycle of violence at dyadic as well as group and nation levels. And of course, it has been used to integrate the voluminous literature on media violence effects. Additional ways of how genetic and other biological factors interact with environmental factors have been discussed in more recent theoretical papers (e.g., with DeLisi in 2011; with DeWall and Bushman in 2011 and 2012). Articles that report the development, testing, refinement, and application of GAM range from psychology to medicine, including top journals, edited volumes, and a book focused on violent video game effects (with Gentile and Buckley 2007).

Media effects. In recent years, Dr. Anderson's most visible work has been his team's research on media violence effects. Dr. Anderson published the first comprehensive meta-analysis on violent video game effects in 2001, with Brad Bushman, in *Psychological Science*. That article is now a citation classic (over 2000 in Google Scholar) and is still downloaded/read more than most articles each month. For example, in March of 2016, it was the 8th most frequently downloaded/viewed article, even though it is 15 years old. Interestingly, Dr. Anderson wasn't trained in media effects research, and his early interest in this domain was primarily as a means to test

hypotheses (both individual differences and short-term priming effects) related to GAM. Since his initial video game (1995) and movie (1997) studies, he has published dozens of original empirical articles, several major reviews, and numerous other papers on the topic. In 2003, he and the expert NIMH panel published their finding in *Psychological Science in the Public Interest*, mainly because the Surgeon General's office revised their original report and buried much of it in an appendix. That article has now garnered over 1000 citations. Dr. Anderson's research team has involved scholars from many countries, including Japan, China, Singapore, Germany, Romania, Croatia, and Australia. For example, in 2008 his team published the first cross-cultural comparative longitudinal study of violent video game effects, in the journal *Pediatrics*; it found similar effects on Japanese and American children. In 2010, his team published the most recent comprehensive meta-analysis of violent video game studies; it found consistent harmful effects on aggressive behavior, aggressive thinking, and aggressive affect, among other findings (in *Psychological Bulletin*). That study found these effects across research design (experimental, cross-sectional, longitudinal) and across Eastern and Western cultures. That article already has over 1000 citations. In recent years Dr. Anderson's research team also has pioneered work on the potential positive effects of playing prosocial video games (2009, *Personality and Social Psychology Bulletin*); effects of anti-Arab/Muslim media exposure on anti-Arab/Muslim attitudes, feelings, and beliefs (2013, *Psychology of Violence*); and potential harmful effects of fast-paced violent media on attention, executive control, and aggression (2010, *Psychophysiology*; 2014, *Aggressive Behavior*). Other outlets for his media effects work have included *Science*, top APA journals (e.g., *Journal of Personality and Social Psychology*, *American Psychologist*), top APS journals (*Current Directions in Psychological Science*, *Psychological Science*), and top medical journals (*Pediatrics*).

Consultant on Violence Issues

1. Testified at the US Senate Commerce, Science, and Transportation Committee Hearing on “The Impact of Interactive Violence on Children.” March 21, 2000
2. Consulted with numerous US State Government officials on media violence, including Washington, Illinois, California, Iowa, Michigan, Minnesota
3. Advised, consulted, and/or gave presentations to governmental officials and NGOs in Canada, Australia, Japan, and Romania
4. Since 2002, over 500 talks, interviews, and consultations worldwide on violence issues, especially media violence and, more recently, implications of global warming for violence and war

Selected Bibliography

- Anderson, C. A. (2016). Human aggression and violence. In R. J. Sternberg, S. T. Fiske, & D. J. Foss (Eds.), *Scientists making a difference: One hundred eminent behavioral and brain scientists talk about their most important contributions* (pp. 327–331). New York: Cambridge University Press.
- Anderson, C. A., & Anderson, K. B. (2008). Men who target women: Specificity of target, generality of aggressive behavior. *Aggressive Behavior, 34*, 605–622.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27–51.
- Anderson, C. A., & Carnagey, N. L. (2009). Causal effects of violent sports video games on aggression: Is it competitiveness or violent content? *Journal of Experimental Social Psychology, 45*, 731–739.
- Anderson, C. A., & Carnagey, N. L. (2014). The role of theory in the study of media violence: The general aggression model. In D. A. Gentile (Ed.), *Media violence and children* (2nd ed., pp. 103–133). Westport: Praeger.
- Anderson, C. A., & DeLisi, M. (2011). Implications of global climate change for violence in developed and developing countries. In J. Forgas, A. Kruglanski, & K. Williams (Eds.), *The psychology of social conflict and aggression* (pp. 249–265). New York: Psychology Press.
- Anderson, C. A., Benjamin, A. J., & Bartholow, B. D. (1998). Does the gun pull the trigger? Automatic priming effects of weapon pictures and weapon names. *Psychological Science, 9*, 308–314.
- Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Theory, research, and public policy*. New York: Oxford University Press.
- Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., Rothstein, H. R., & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries. *Psychological Bulletin, 136*, 151–173.
- Anderson, C. A., Gentile, D. A., & Dill, K. E. (2012). Prosocial, antisocial, and other effects of recreational video games. In D. G. Singer & J. L. Singer (Eds.), *Handbook of children and the media* (2nd ed., pp. 249–272). Thousand Oaks: Sage.
- Anderson, C. A., DeLisi, M., & Groves, C. L. (2013). Subtracting from scientific knowledge about media effects. [Review of: Adolescents, crime, and the media: A critical analysis by Christopher J. Ferguson]. *PsycCRITIQUES, 58*(51), Article 2.
- Anderson, C. A., Bushman, B. J., Donnerstein, E., Hummer, T. A., & Warburton, W. (2015). SPSSI research summary on media violence. *Analyses of Social Issues and Public Policy, 15*, 4–19.
- Bartholow, B. D., Anderson, C. A., Carnagey, N. L., & Benjamin, A. J. (2005). Interactive effects of life experience and situational cues on aggression: The weapons priming effect in hunters and nonhunters. *Journal of Experimental Social Psychology, 41*, 48–60.
- Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others. *Psychological Science, 20*, 273–277.
- DeWall, C. N., Anderson, C. A., & Bushman, B. J. (2011). The General Aggression Model: Theoretical extensions to violence. *Psychology of Violence, 1*, 245–258.
- DeWall, C. N., Anderson, C. A., & Bushman, B. J. (2012). Aggression. Chapter in I. Weiner (Ed.), *Handbook of psychology* (2nd ed., Vol. 5, pp. 449–466). H. Tennen & J. Suls (Eds.), *Personality and social psychology*. New York: Wiley.
- Diener, E., Oishi, S., & Park, J. (2014). An incomplete list of eminent psychologists of the modern era. *Archives of Scientific Psychology, 2*(1), 20–31.
- Engelberth, N. P. (2006). Citations in social psychology textbooks. *Dialogue, 21*(1), 8, 11, 14. <http://www.spsp.org/member-newsletters>. Accessed 13 Dec 2016.
- Gentile, D. A., Swing, E. L., Anderson, C. A., Rinker, D., & Thomas, K. M. (2016). Differential neural recruitment during violent video game play in violent and nonviolent game players. *Psychology of Popular Media Culture, 5*, 39–51.
- Nosek, B. A., Graham, J., Lindner, N. M., Kesebir, S., Hawkins, C. B., Hahn, C.,... Tenney, E. R. (2010). Cumulative and career-stage citation impact of social-personality psychology programs and their members. *Personality and Social Psychology Bulletin, 36*(10), 1283–1300.
- Prot, S., Gentile, D. G., Anderson, C. A., Suzuki, K., Swing, E., Lim, K. M., Horiuchi, Y., Jelic, M., Krahé, B., Liuqing, W., Liau, A., Khoo, A., Petrescu, P. D., Sakamoto, A., Tajima, S., Toma, R. A., Warburton,

- W. A., Zhang, X., & Lam, B. C. P. (2014). Long-term relations between prosocial media use, empathy and prosocial behavior. *Psychological Science*, 25, 358–368.
- Saleem, M., & Anderson, C. A. (2013). Arabs as terrorists: Effects of stereotypes within violent contexts on attitudes, perceptions and affect. *Psychology of Violence*, 3, 84–99.
- Saleem, M., Anderson, C. A., & Barlett, C. P. (2015). Assessing helping and hurting behaviors through the Tangram help/hurt task. *Personality and Social Psychology Bulletin*, 41, 1345–1362.
- Psychology at Iowa State University, in Ames, Iowa. He currently is Director of Iowa State University's Center for the Study of Violence and a Past President of the International Society for Research on Aggression. He serves as an Associate Editor for the journals *Aggressive Behavior* and *Personality and Social Psychology Bulletin*. He also serves on the editorial boards of *Journal of Experimental Social Psychology*, *Psychology of Violence*, and the *Journal of Adolescence*.

Craig A. Anderson is a Distinguished Professor of Liberal Arts and Sciences in the Department of