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Observational Learning and the Bobo Doll

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January 1, 2007

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Since the publication of their seminal article entitled, “Transmission of Aggression Through Imitation of Aggressive Models” (Bandura, Ross, & Ross, 1961), the work of Albert Bandura and his co-authors has had an immeasurable impact on the field of psychology, in general, and educational psychology, more specifically. The purpose of this report is to describe, in brief, Albert Bandura’s major contributions to the field of educational psychology. Although Bandura’s contributions are vast by any measure, this paper focuses on his work with social modeling and observational learning. The report includes a short biography of Bandura’s academic life, followed by an overview of the research article that launched his prolific career and a review of his social learning theory. The paper ends with a discussion of Bandura’s enduring legacy, including a summary of his major contributions to the field of educational psychology and an abbreviated list of the doctoral students he has trained and colleagues he has influenced.

Albert Bandura’s Abridged Biography

Albert Bandura was born on December 4, 1925, in Mundare, a village in northern Alberta, Canada. He was the youngest child, and only boy, among six children of immigrant parents from Eastern Europe (Zimmerman & Schunk, 2003). As a young student, Bandura’s primary and secondary education took place at the one and only school in town, with very limited resources. As a result of this meager academic environment, Bandura realized early on that learning is largely a social and self-directed endeavor. In his words, “the content of most textbooks is perishable, but the tools of self-directedness serve one well over time” (Bandura, as

cited in Pajares, 2004a, ¶ 3). Interestingly, this sentiment would reappear in Bandura's later research into self-regulation and its influence on lifelong learning.

Following high school, Bandura moved west to attend the University of British Columbia in Vancouver, Canada. Stumbling upon psychology more by chance than by choice (Pajares, 2004a), Bandura excelled in college and, after only three years of study, received his B.A. degree in psychology in 1949. On the advice of his undergraduate adviser, Bandura then decided to head south to the United States for his graduate studies at the University of Iowa. At the time, as is still the case today, the psychology program at the University of Iowa was considered one of the best in North America (Kendler, 1991). While at Iowa, Bandura was mentored by numerous acclaimed faculty, including Kenneth Spence, Kurt Lewin, and Arthur Benton, his academic adviser (see Table 1 for summary of Bandura's professional genealogy).

Table 1

Albert Bandura's Professional Genealogy (adapted from Pajares, 2004a)

Adviser	Advisee	University	Year
*<u>William James</u>	James Rowland Angell	Harvard University	1893
James Rowland Angell	John Watson	University of Chicago	1903
John Watson	Karl Spencer Lashley	Johns Hopkins University	1914
Karl Spencer Lashley	Carney Landis	University of Minnesota	1924
Carney Landis	Arthur Benton	Columbia University	1935
Arthur Benton	<u>Albert Bandura</u>	University of Iowa	1952

**Note.* William James is considered by many to be the Father of American psychology (Pajares, 2003).

After only a few years at Iowa, Bandura received his M.A. degree in 1951 and his Ph.D. degree in clinical psychology in 1952. Following a postdoctoral internship at the Wichita Guidance Center, Bandura joined the faculty of the Department of Psychology at Stanford University in 1953, where he still resides today after more than 50 years of productive scholarly activity (Pajares, 2004a; Zimmerman & Schunk, 2003).

Bandura, Ross, and Ross and the Legendary Bobo Doll

Challenging Prominent Theories of the Day

When Bandura first arrived at Stanford, Robert Sears, the Chair of the Department, was exploring the familial antecedents of social behavior in children. Influenced by this work, Bandura began a program of research on social learning and aggression in collaboration with Richard Walters, his first doctoral student (Pajares, 2004a). At that time, ideas about aggression in young children were dominated by “the Freudian view that such behavior was the product of intrapsychic forces operating largely unconsciously. Students’ aggression on the playground or in school was seen as a recurring expression of underlying impulses requiring release in minimally detrimental ways” (Zimmerman & Schunk, 2003, p. 440). Furthermore, the Freudian theory of catharsis stated that modeled violence would drain observers’ aggressive drives and reduce subsequent aggressive behavior. Citing this Freudian view, television executives at the time were defending increasingly violent programming as socially beneficial since, in theory, violent programs would help drain viewers’ aggressive drives thereby reducing aggressive tendencies (Pajares, 2004a; Zimmerman & Schunk, 2003).

The Bobo Doll Experiment

With this scholarly and political landscape as a backdrop, Bandura began a program of research with Dorrie and Sheila Ross on social modeling involving the now legendary inflatable

plastic Bobo doll. In their 1961 experiment – the first of many using the Bobo doll paradigm – 24 preschool children were assigned to one of three conditions. One experimental group observed adult models playing aggressively with an inflatable plastic Bobo doll; a second group observed adult models playing non-aggressively with a Bobo doll; and subjects in the control group had no exposure to the models (Bandura et al., 1961). Additionally, half the children in the experimental conditions observed same-sex models and half viewed models of the opposite sex. Subjects were then assessed for the amount of imitative as well as nonimitative aggression performed in a new, generalized situation in the absence of the models (Bandura et al., 1961).

Results revealed that children exposed to aggressive models reproduced considerably more aggressive behaviors resembling that of the models, and that their mean aggression scores were significantly higher than subjects in the nonaggressive and control groups. Furthermore, children in the aggressive condition exhibited significantly more “partially imitative and nonimitative aggressive behavior and were generally less inhibited in their behavior than subjects in the nonaggressive condition” (Bandura et al., 1961, p. 582). Finally, the extent to which children imitated the model was differentially influenced by the sex of the model, with boys showing more aggression than girls following exposure to the male model.

Based on these results, Bandura and his co-authors questioned much of the existing research on social learning which was focused on the shaping of new behaviors through rewards and punishments. While these strict behaviorist views necessitated the reinforcement of emitted behaviors, Bandura’s findings suggested that “observation of cues produced by the behavior of others is one effective means of eliciting certain forms of responses for which the original probability is very low or zero” (Bandura et al., 1961, p. 580). In other words, observational learning can occur in the absence of reinforcements to the observers, thereby speeding up the

acquisition of new behaviors. At the time of their experiment, these ideas were in express disagreement with accepted views, which stated that learning is a result of direct reinforcement (Skinner, 1938; Zimmerman & Schunk, 2003).

Following their initial Bobo doll experiment, Bandura, Ross, and Ross conducted a similar study which sought to determine the extent to which film-mediated aggressive models could serve as sources of imitative behavior (Bandura, Ross, & Ross, 1963). This follow-up study, entitled “Imitation of Film-Mediated Aggressive Models,” provided additional evidence to support their theoretical account of observational learning. In general, their results revealed that filmed aggression increased aggressive reactions in children. In the words of the authors, “subjects who viewed the aggressive human and cartoon models on film exhibited nearly twice as much aggression than did subjects in the control group who were not exposed to the aggressive film content” (Bandura et al., 1963, p. 9).

Taken together, results from the two Bobo doll experiments provided strong evidence that learning can occur vicariously and “without any reinforcers delivered either to the model or to the observer” (Bandura et al., 1963, p. 11). Furthermore, the experimental findings helped debunk the Freudian concept of catharsis; revealing instead the power of modeled aggression (both live and through television or film) on children’s aggressive tendencies (Zimmerman & Schunk, 2003).

Theoretical Contributions

Based, in part, on findings from the classic Bobo doll experiments, Bandura began developing the theoretical underpinnings of his social learning theory, to include the prominent role of observational learning and social modeling in human learning and motivation. As Bandura (1989) noted, “observational learning is governed by four component subfunctions” (p.

23). These subfunctions, or processes, are necessary before an individual can successfully model another. The processes include attention, retention, motor reproduction, and motivation.

Attentional processes determine what aspects of modeled behavior individuals observe and what information they extract from that behavior. Students cannot learn a new skill if they do not pay close attention to the critical features of the modeled behavior and less attention to the irrelevant parts. For teachers, this point becomes critical because often times they must modify or alter the behavior they model to compensate for the attentional limitations of their students (Bandura, 1989). Furthermore, teachers can improve the likelihood that students will attend to critical features of a lesson by making presented information clear and highlighting important points (Woolfolk, 2007).

People cannot be influenced by observed events if they cannot remember them (Bandura, 1989). Thus, the second process in learning from a model is to remember the behavior that has been observed. According to Bandura (1989), “retention involves an active process of transforming and restructuring the information conveyed by modeled events into rules and conceptions for memory representation” (p. 24). Teachers can help students remember modeled behaviors by encouraging them to use various learning strategies. Examples of effective learning strategies include rehearsal techniques (repeating what needs to be learned over and over again); organizational methods (imposing structure on newly learned material); and elaboration strategies (connecting information to prior knowledge, making assumptions, and drawing inferences; Ormrod, 2004).

The third process necessary for observational learning is motor reproduction, also known as behavioral production. Motor reproduction requires that the learner be able to replicate the behavior demonstrated by the model. If the observer cannot reproduce the modeled behavior, due

to inadequate physical ability, lack of strength, or even physical disability, then behavioral production will not occur (Ormrod, 2004). It is possible, then, that a learner could comprehend the information being modeled but not be able to actually perform the behavior (Bandura, 1989). Teachers can assist their students with motor reproduction by giving them opportunities for guided practice and feedback (Woolfolk, 2007).

The final process necessary for observational learning is motivation. Students must want to demonstrate what has been learned, and thus Bandura (1989) has distinguished between acquisition and performance, since people do not perform everything they learn. Moreover, Bandura (1989) has demonstrated how performance of observational learning can be influenced by three types of incentive motivators, or reinforcers – direct, vicarious, and self-produced. Certainly, learners may receive direct reinforcement when they correctly perform a modeled behavior, but reinforcement may also be indirect (i.e., vicarious reinforcement). Vicarious reinforcement occurs when observers see others reinforced for the particular behavior and then increase their production of that behavior (Bandura, 1977). This type of reinforcement is particularly effective if students witness successes of individuals who are similar to themselves (Bandura, 1986). Finally, personal standards of conduct provide another source of incentive motivation or reinforcement. People tend to reproduce behaviors that they see as valuable or self-satisfying and reject what they personally dislike (Bandura, 1989).

Measuring Impact on Theory, Research, and Practice

Prior to Bandura's pioneering Bobo doll experiments, psychologists had focused almost exclusively on learning through reinforcers and punishments (Skinner, 1938; Zimmerman & Schunk, 2003). Based on results from his early program of research, Bandura showed that "the tedious and hazardous process of trial and error learning can be shortcut through social modeling

of knowledge and competencies exhibited by the rich variety of models” (Pajares, 2004a, ¶ 16). Additionally, Bandura and his collaborators revealed that modeling is not simply response imitation. Instead, they showed that by observing others, individuals can actually generate new behavior patterns that go far beyond what they have observed (Bandura, 1977). Finally, Bandura et al. (1961, 1963) demonstrated that modeled behavior will vary considerably depending on whom the models are and how they perform.

One need not look far to gauge the impact of Bandura, Ross, and Ross (1961) on American psychology. The researchers’ innovative experimental methods and novel findings were incredibly important at a time when Freudian notions of catharsis and Hullian and Skinnerian assumptions about the need for direct reinforcement ruled the day (Pajares, 2004a; Zimmerman & Schunk, 2003). Results from their original Bobo doll study spawned numerous follow-on studies (e.g., Bandura, 1965; Bandura & Mischel, 1965; Bandura & Rosenthal, 1966; Bandura & Whalen, 1966) and led to the refinement of Bandura’s social learning theory (Bandura, 1977) and later, his social cognitive theory (Bandura, 1986), which emphasized the importance of personal factors (i.e., cognitive, motivational, and affective characteristics) on subsequent learning.

Moreover, from a recognition perspective, the Bobo doll studies have achieved unimaginable fame. It is virtually impossible to find an introductory psychology or educational psychology textbook that does not discuss the Bobo doll experiments (Zimmerman & Schunk, 2003). Additionally, a Google™ search of the phrase “bobo doll study” resulted in 66,600 hits, while a Google™ Scholar search of the phrase “bobo doll” resulted in 483 hits.¹ These Internet results are consistent with those that can be found by conducting a search of Bandura et al. (1961) and Bandura et al. (1963) within the online Social Sciences Citation Index® database.

¹ The Google searches were conducted on December 24, 2006.

Search results revealed that the two articles have been cited a total of 845 times within the journal literature of the social sciences from 1994 to 2006.²

In terms of educational practice, the impact of Bandura's Bobo doll studies has been equally impressive. There is now widespread consensus by educators that observational learning processes "greatly influence children's coping with conflict, frustration, academic stressors, and failure" (Zimmerman & Schunk, 2003, p. 442). Furthermore, because most teacher education programs include at least one introductory course in educational psychology, teachers-in-training around the country are exposed to the Bobo doll experiments and, more importantly, to the instructional implications of those experiments (i.e., the power of observational learning and the characteristics of effective models; Pintrich & Schunk, 2002; Woolfolk, 2007). Certainly, the inclusion of the Bobo doll studies within teacher education textbooks will help to ensure that Bandura's classic experiments continue to impact educational practice for years to come.

Albert Bandura's Enduring Legacy

Bandura's influence on educational psychology has been remarkably widespread. And while his scholarly contributions are vast, his research on social learning theory and, more specifically, the modeling and vicarious learning components of that theory, are believed by many to represent one of his most enduring gifts to the study of learning and motivation (Zimmerman & Schunk, 2003). Additionally, it is worth noting that Bandura was not trained as an educational psychologist and did not initially publish in educational psychology journals (Hahn & Husman, 2005). However, it is fair to say that his research has crossed disciplinary boundaries and is now widely known in educational circles (see, for example, Gordon et al.,

² Because the two articles are so old, and the online Social Sciences Citation Index[®] only covers 1994 to the present, these 845 citations represent just a fraction of the total number times the articles have been cited in the social sciences literature since their publication in the early 1960s.

1984). As Zimmerman and Schunk (2003) stated, “the broad scope of Bandura’s theory stems from his diverse scientific interests and his theory’s ready applicability” (p. 448).

Scholarly Accomplishments

Bandura is one of the most well-known and widely cited scholars in both psychology and education (Gordon et al., 1984; Zimmerman & Schunk, 2003). In fact, in their study of the most eminent psychologists of the 20th century, Haggbloom et al. (2002) ranked Bandura as fourth overall, behind Sigmund Freud (third), Jean Piaget (second), and B. F. Skinner (first). The study used six criteria to measure eminence, including: (1) journal citation frequency, (2) introductory psychology textbook citation frequency, (3) survey response frequency, (4) National Academy of Sciences membership, (5) election as American Psychological Association (APA) president or receipt of the APA Distinguished Scientific Contributions Award, and (6) surname used as an eponym. Bandura was ranked fifth or better on all three quantitative frequency measures and met two of the three qualitative criteria.

In terms of accomplishments and contributions, Bandura’s 26-page vita has few peers. He was elected president of APA in 1974, and throughout his career has held offices in more than a dozen scientific societies. In 1998, he was honored with the E. L. Thorndike Award from Division 15 of APA for his research influence on educational psychology; research that has contributed significantly to knowledge, theory, and practice in the field. More recently, in 2004, Bandura was honored by APA with the Award for Outstanding Lifetime Contribution to Psychology. Additionally, his vita includes eight other prestigious awards from institutions such as the American Academy of Arts and Sciences and the Institute of Medicine of the National Academy of Sciences. In terms of publications and service, Bandura has authored or edited nine books and more than 230 articles and chapters; he has sat on the editorial board of more than 30

journals or serial volumes; and he has received 14 honorary degrees from universities around the world.

As amazing as his resume may seem, Bandura's contributions to educational psychology go far beyond his own research activities and service. As Zimmerman and Schunk (2003) so aptly noted in their edited volume on the most influential educational psychologists of the 20th century:

It should come as no surprise to readers to learn that the impact of Bandura's own program of research represents only a small part of his enormous influence in psychology and education. Apart from his own program of research, he had major impact through his modeling and writing on the work of his many colleagues, students, and followers. (p. 440)

And thus, one might say that Bandura's most enduring influence on educational psychology may have come from his impact on a long list of prominent psychologists (see Table 2 for an abbreviated list of psychologists directly and indirectly influenced by Bandura).

Conclusions

Albert Bandura's academic career has been nothing short of remarkable. At more than 80 years of age, he is still an active teacher and researcher at Stanford University. Although it is difficult to pinpoint a single accomplishment that stands above all others, his early research using the Bobo doll paradigm certainly ranks near the top of the list. In fact, APA recognized the significance of this work in the opening paragraphs of his lifetime achievement award citation. It stated, in part, that Bandura's "analysis of the importance of observational learning and social modeling moved psychological thinking away from previously limited conceptions in which learning required overt actions....You have made "Bobo" a doll for all times" (Pajares, 2004b, ¶

2). Thus, as incredible as it may sound, it seems that an inflatable plastic Bobo doll helped stimulate an entire theoretical movement and, in the process, effectively launched the academic career of one of the most influential psychologists of the 20th century.

Table 2

Abbreviated List of Prominent Psychologists Influenced by Bandura

Name	Academic Training	Current University	Association
Blanchard, E. B.	Stanford University	University at Albany, State University of New York	Doctoral student and co- author
Martinez-Pons, M.	Graduate School and University Center of the City University of New York	Brooklyn College of the City University of New York	Co-author and disciple of social cognitive theory
Mischel, W.	Ohio State University	Columbia University	Co-author
Pajares, F.	University of Florida	Emory University	Disciple of social cognitive theory
Rosenthal, T.	Stanford University	<i>Unknown</i>	Doctoral student and co- author
Schunk, D. H.	Stanford University	University of North Carolina at Greensboro	Doctoral student, co- author, and disciple of social cognitive theory
Walters, R. H.	Stanford University	<i>Deceased</i>	First ever doctoral student and co-author
Zimmerman, B. J.	University of Arizona	Graduate School and University Center of the City University of New York	Co-author and disciple of social cognitive theory

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