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INTRODUCTION

Welcome to the second edition of the Gallaudet Chronicles of Psychology. The GCP first began in 2007 with the vision of providing a forum for students to share their ideas, both research and theoretically oriented, with the broader community. GCP is a unique student-run journal that truly reflects the working, living, and learning that takes place here at Gallaudet and within the Deaf Community. For the second publication, the editors of GCP are proud to showcase the wide variety of experiences, perspectives, and interests of Gallaudet students.

The vision of the GCP is to create a place for students and alumnae to submit a variety of writings that may be of interest to the larger community. Writers are encouraged to submit a variety of materials related to psychology. While some of the writings may focus on formal research, the GCP is also a place to share essays, personal narratives, theoretical writings, historical papers, and critiques. Like the first edition of the GCP, the second edition also encompasses this vision, and includes a sampling of these kinds of work.

This edition of GCP comprises six articles selected for inclusion. The articles include the following: An overview of pre-experimental Western Influences on modern psychology by Elizabeth Adams; a look at gender differences in the psychological sequelae of childhood and adulthood physical abuse by Melissa L. Anderson; an exploration of MDMA in treatment of PTSD by Evan Goodman; moral development in intellectually gifted deaf children by Cara Miller; an insightful essay on how fairy tales help us to understand Developmental Psychology by Cara Miller; and finally, comment on the DSM-V, an approach to integrating structuralism and functionalism by Jason J. Zodda.

One primary purpose of the GCP is to provide a forum for students to publish both conventional and creative work. While many of these writing reflect and parallel the research interests of the authors, other writings are more subtle passions, not as often pursued or published by the authors. The GCP provides students a forum to display and share these ideas. The GCP also functions as a way to expose graduate students to the publication process. The GCP is modeled after peer-reviewed journals; as a result, each submission undergoes a peer review and editing process. In this way, students are not only encouraged to submit writing for publication, but they can also participate in the review and editing of submitting writings.

There are many benefits of the GCP. The GCP provides a place for students to share the unique ideas, insights and perspectives of the Gallaudet student. The GCP also provides a place for students to experience and become involved with the journal and publication process, and the opportunity to become involved exists on many levels. Finally, the GCP, when it is finished, yields a well-produced, student-run, peer reviewed journal that can be shared with the larger community. In an effort to produce the GCP in

these difficult economic times, the GCP has become an on-line journal, but it is our hope that this will allow further opportunity for the GCP to be shared.

We would like to thank those who contributed to the second edition of the GCP. It would not be possible without the collective efforts of a number of students. The authors, reviewers, and editors are all integral parts of this process. A very special thanks to Dr. Brice who has overseen this project since the beginning, and ensured that it continued beyond the first edition. We look forward to participating in the GCP process and enjoying its continued success.

Sincerely,

Elizabeth Adams & Melissa Anderson
Student Co-editors in Chief

Patrick Brice, PhD
Faculty Editorial Supervisor

DSM-V: An Approach Integrating Structuralism and Functionalism

Jason J. Zodda

The debate over the framework of the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders (4th ed., 1994; DSM) has been ongoing for over a half of a century and throughout several DSM editions (Widiger & Samuel, 2005). Dimensional and categorical foundations are the popular competing frameworks—both with distinct benefits and disadvantages. The following will present an alternative, extending the dimensional platform by incorporating structural and functional elements.

The Current Edition

The current edition of the DSM is based on operationally defined categories, utilizing indicators to identify the presence or absence of psychopathology. While the aim of this manuscript is to provide an argument for an alternative DSM platform, it would be imprudent to discredit the benefits of the current taxonomy. The current platform emerged in the DSMs third edition (APA, 1980) and its creation marked one of the greatest leaps in the classification of psychopathology—transitioning from a theoretical to empirically based system (Helmuth, 2003). The current (fourth) edition is well established in the health community and is employed by a variety of organizations in a number of settings. Finally, many consider a categorical framework, delineating disorders into definable categories, to be a clear way for describing the complexities of psychopathology (Widiger & Samuel, 2005).

The current classification system clearly has benefits, though these are outnumbered and overshadowed by its disadvantages. Some of the strongest empirical evidence against its framework is seen in the high amounts of comorbidity among the DSM disorders (Widiger & Samuel, 2005). It is less the exception, and more the rule, that one disorder will co-occur with another (Kessler, Chiu, Demler, & Walters, 2005). Categories are lexically distinct; one

overlapping another (i.e., comorbidity) indicates that they are not discrete, rather that they stem from a mutual factor. A second problem with the taxonomy regards its progression through the DSM editions. Two revisions have emerged since the third, each differentiated most notably by the number of categories and indicators—increasing greatly with each edition (Blashfield & Fuller, 1996). This approach simply casts a wider net: each additional category allows the classification of a greater number of individuals and each additional indicator expands the scope of that category making it more complex and less distinct.

Integrating Structuralism and Functionalism

In order to mitigate the setbacks of a categorical DSM, many have proposed incorporating or solely employing dimensional components (e.g., Acton & Zodda, 2005; Fist, 2005; Widiger & Samuel, 2005). Empirical research on the utility of such a model has shown encouraging results. Strong evidence for a dimensional perspective has been found with DSM axis-II disorders (e.g., Cannon, Turkheimer, & Oltmanns, 2003; Clark & Livesley, 2002; Clark, Livesley, Schroeder, & Irish, 1996; Widiger & Costa, 2002). Studies of mood and psychotic disorders have also shown support for a dimensional basis (e.g., Lindenmayer, Grochowski, & Hyman, 1995; McGlinchey & Zimmerman, 2007). The dimensions that appear most frequently in the research are extraversion, agreeableness, conscientiousness, and neuroticism—four components of the five factor model (see Goldberg, 1993; McCrae & Costa, 1997). While the results clearly point towards a dimensional taxonomy, it is argued that such a model is incomplete without structural and functional aspects (Acton & Zodda, 2005). A structural focus is what the current DSM taxonomy is based on: attention on between-group differences rather than individual (in an effort to measure diagnostic reliability).

A contrasting view is functionalism, where attention is paid to differences in the individual (in an effort to measure diagnostic validity). Acton and Zodda (2005) applied this approach to their theory, the generalized interpersonal theory of personality and psychopathology (GIPT), a dimensional framework of psychopathology incorporating both a structural and functional foundation. The model is composed of the four mentioned big five components (the fifth component, openness to experience, was not included due to research elucidating its low cross-cultural generalizability [Saucier & Goldberg, 2001] and its modest relevance to psychopathology [O'Connor & Dyce, 1998; Widiger, 1993]). Using this model, Acton and Zodda illustrated its efficacy by applying it to depression precipitating interpersonal rejection, and expressed emotion precipitating relapse to depression. This dimensional approach, incorporating structuralism and functionalism, provides the scientific community a platform for evaluating its reliability and validity—extending the current DSM’s taxonomy of only assessing reliability.

Fist (2005) argued that clinical utility is an essential component of any diagnostic model. A categorical model attempts to match an individual to an established prototype (e.g., Schizophrenia) which makes an evaluation of its clinical utility difficult at best. In contrast, Fist explained how a dimensional model, assessing an individual’s multidimensional severity scores, could clearly assess its clinical practicality. This patient-driven approach is argued to be the hallmark of future diagnostic classification systems. For the field of psychology to move forward, it must reposition itself from classifying individuals in ever-increasing categories, towards competently assessing the degree of their psychopathology. Simply stated, it is argued that placing patients into categories provides them little relief from their suffering—other psychopathology classification systems may provide greater benefits.

The GIPT (explained in depth in Action & Zodda, 2005) is a dimensional taxonomy containing structural and dynamic components and is illustrated

here has an alternative approach for classifying psychopathology. As noted, each component has distinct advantages over the other. A fundamental reason for the creation of the GIPT was to integrate these two components, thereby increasing the utility of classifying psychopathology. The structural component of the GIPT is its two circumplexes—the Generalized Interpersonal Circumplex of Affect (GIPC-A) and the Generalized Interpersonal Circumplex of Behavior (GIPC-B) (Figure 1)—which allow internalizing and externalizing factors of individuals to be understood using the four Big Five traits described above: neuroticism (N), agreeableness (A), extraversion (E), and conscientiousness (C). The dynamic component the GIPT allows the user to predict affect and behavior through the Generalized Interpersonal Principle of Complementarity (see Acton & Zodda, 2005). Figure 1 plots complementary traits at similar locations on each circumplex; for example, the complementary trait of high extraversion (E+) is high agreeableness (A+), highly agreeable behavior causes others to feel extraverted. Conversely, Figure 1 plots anti-complementary traits at the complement’s opposing pole; for example, the anti-complementary trait for high extraversion (E+) would be low agreeableness (A-), non-agreeable behavior causes reductions in others’ feelings of extraversion. Together, the structural and dynamic components of the GIPT bolster the utility of classifying psychopathology.

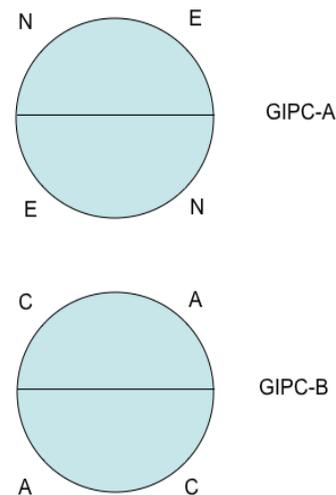


Figure 1. The Generalized Interpersonal Circumplexes

Final Remarks

Finally, a recommendation for such a model would be incomplete without supplying its limitations and downfalls. The current DSM taxonomy has shown great utility and acceptance. It has been incorporated in many fields and altering its fundamental structure would cause a disruption in record keeping, require the retraining of many individuals, and complicate the process of integrating past DSM research into new studies (Fist, 2005). These downfalls should not be overlooked; if the professional field does not adopt a model then its potential utility is irrelevant. Fist (2005) mitigates this disturbance by illustrating the shift that arose with the implementation of the DSM's third edition (a significant change in classifying psychopathology) and explaining that the burden of implementation would be taken on by professionals in light of the benefits such a model would provide. It would be imprudent to suggest that such a grave shift in psychopathological classification would be seamless, simple, and not have unforeseen drawbacks, however the advancement it would provide to patient-care (due to a focus on validity) should trump any dissuasion.

The argument pressed in this manuscript is to encourage authors of psychopathological classification systems to investigate the benefits gained by incorporating a dimensional approach extended by structural and functional components. Yes, a significant modification to the current categorical platform would be a great challenge, though the benefits gained will open new doors for researchers and place the patient, not the pathology, at the forefront of treatment.

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Moral Development in Intellectually Gifted Deaf Children

Cara Miller

For years, the preponderance of literature on deaf and hard of hearing children has focused on their hearing disabilities and related communication deficits, remedial education needs, and delays in psychosocial development. Researchers are frequently so focused on pinpointing areas of developmental retardation in deaf individuals that few studies have been done to identify areas of strength or exceptionality. As Vialle and Paterson (1995) note, adults' preoccupation with children's deafness is so large as to overshadow the child's other abilities, however exceptional.

However, recent efforts by researchers to de-pathologize deafness as well as increasing respect for the Deaf as a cultural minority group have seen more studies undertaken to identify and assess the proliferation and nature of intellectual giftedness in deaf and hard of hearing children. Such studies are based on the recognition that communication difficulties do not necessarily impede, but may merely mask, advanced cognitive and emotional development in deaf individuals. The few studies on giftedness in deaf students published thus far have investigated the educational experiences of gifted deaf adults (Vialle & Paterson, 1995), educational outreach to rural gifted students through electronic technology (Belcastro, 2004), implementation of educational programming for gifted deaf students (Samecky, 1977), and summertime educational programs for gifted pre-college deaf youth (Savidge, 1984).

Gifted and talented children have been the subject of research for more than seventy years. Terman's *Genetic Studies of Genius* (1925) was one of the first and largest studies to survey the personal attributes of over one thousand gifted children, investigating their physical health, family background, educational upbringing, character traits, and recreational interests (Dalzell, 1998). Numerous subsequent studies have investigated gifted children's advanced acquisition of

mobility and speech skills, highly-developed cognitive processing skills, personality characteristics, discrepancies in WISC-III Verbal-Performance IQ subtests, attributional choices for academic success and failure, identity development, counseling needs, development of socio-affective attributes, and identification of gifted children within minority populations (Assouline, Colangelo, Ihrig, and Forstadt, 2006; Ford-Harris, Schuerger, & Harris, 2001; Gross, 1998; Sweetland, Reina, & Tatti, 2006; Yoo & Moon, 2006; Zuo & Tao, 2001). However, one especially intriguing topic of investigation is the occurrence and nature of heightened moral sensitivity and advanced level of moral reasoning in gifted children. To understand development of moral reasoning and why gifted children often possess exceptionally advanced moral reasoning skills, it is first necessary to understand children's cognitive development and the factors that contribute to, or impact, intellectual giftedness in children.

"Giftedness" has been defined in many ways. Researchers have argued that levels of creativity, high performance in one of several specific verbal or non-verbal domains, and emotional intelligence are all key indicators of giftedness (Dalzell, 1998). "The definition of giftedness incorporates many factors, among them intelligence, creativity, and leadership skills. All definitions, however, agree that to be considered gifted an individual must possess a particular kind of ability and a high level of expertise" (Dalzell, 1998, 3). This paper takes as its definition of "giftedness" Terman's (1976) characterization as expressed in terms of cognitive development, and studies cognitive development using a Piagetian approach. Specifically, Piaget's stages of development are explored and related to connections between cognitive and moral development in gifted children.

Piaget's definition of intelligence is one of "adaptation to the environment." He proposes that all

children move through the same four stages of cognitive growth at roughly equivalent age periods, with their maturing physical abilities compelling and encouraging their cognitive development. Each of Piaget's proposed stages of cognition builds upon the cognitive and perceptual concepts previously acquired in earlier stages (1982). As children's progressing sensorimotor skills encourage increasingly adroit manipulation of objects and promote pre-operational representational thought about those objects, the underlying and antecedent foundation on which words and organized linguistic expression are constructed (Miller, 2002). Children who are gifted tend to demonstrate precocious achievement or quicker mastery of cognitive development (Dalzell, 1998). Sternberg and Davidson's (1985) literature review suggests that "intellectually precocious" children rapidly advance through some developmental periods.

According to Piaget, thought formation and thinking ability exist both prior to development of language and extend further than linguistic capability (1967). As gifted children attain comprehension of advanced concepts at earlier ages, their experimentations with abstraction in thought may contribute to improved cognitive abilities as they age (Dalzell, 1998). Terman's studies of socioemotional adjustment and moral development in gifted children were prompted in part by his recognition of such children's advanced cognitive development (1976). Similarly, other researchers have found common personal attributes amongst gifted children, including "perfectionism, excitability, sensitivity, intensity, a desire for recognition of academic achievement, nonconformity, questioning of rules or authority, a strong sense of justice, and idealism" (Yoo & Moon, 2006, p. 53). Each of these are related to high-level cognitive processing. Particularly, as Silverman noted, "gifted individuals have complex inner lives, early ethical concerns, and heightened awareness of the world" (Silverman, 1994, p.10). Thus, moral development is strongly impacted by level of cognitive development (Silverman, 1994).

As with defining "intelligence," researchers have differed on definitions of "morality" and moral development. Morality is a "system of beliefs, values, and underlying judgments about the rightness or wrongness of human acts" (Gerrig and Zimbardo, 2002). Moral development is seen by some as moral judgment, the ability to reason about universal principles of justice and fairness (Silverman, 2003). For others, it is a matter of ability to empathize with and to act to alleviate others' suffering (compassion). Others suggest that altruism is the best indicator of moral reasoning (Lovecky, 1997). Many agree that a moral act is one that constitutes recognizing the emotions of another person or persons, and identifying the action or actions needed to change the situation at hand.

Piaget suggested that as a child progresses through the stages of cognitive growth, he or she assigns differing relative weights to the consequences of an act and to the actor's intentions (Gerrig & Zimbardo, 2002). Kohlberg proposed a stage theory of moral development that emulates Piaget's stages of cognitive development, wherein children, adolescents, and adults progress from one moral stage to the next while developing increasing abilities to reason and make complex judgments (Lovecky, 1997). Each of Kohlberg's stages is characterized by a different basis for making moral judgments, the lowest of which is based on self-interest, while the highest is based on the good of society regardless of one's personal gains (Gerrig & Zimbardo, 2002). Thus, Kohlberg's theory ties development of moral judgment to a child's general cognitive development, focusing, in particular, on "the use of reason to draw conclusions about what ought to be done to achieve justice and fairness in a particular situation" (Lovecky, 1997, p. 372).

In Kohlberg's six (or seven) stage model, "the progression from Stages 1 to 3 appears to match the course of normal cognitive development. The stages proceed in order, and each can be seen to be more cognitively sophisticated than the preceding" (Gerrig & Zimbardo, 2002, p. 358). Kohlberg illustrates his proposed stages with a series of dilemmas that force

reasoners to weigh, compare, and eventually select a course of action based on one of several moral principles (Gerrig & Zimbardo, 2002). Kohlberg posits the moral reasoner as one “who knows that a moral decision is required, understands that principles need to be applied universally, thinks of the greatest good for the most people, and then makes a decision based on abstract principles of justice and fairness” (Lovecky, 1997, p. 2). Both children and adults engage in acts of moral reasoning; however, what changes from childhood to adulthood is the amount and type of experience the person brings to the situation (Lovecky, 1997).

From early ages, many gifted children demonstrate heightened sensitivity, increased empathy for others, strong moral concerns, idealism, compassion towards others’ pain, and concern about world issues (Gross, 1998). Silverman suggests that advanced moral sensitivity is an essential feature of being gifted, and that the cognitive “complexity and certain personality traits of the gifted create unique experiences and awarenesses that separate them from others” (Silverman, 1994, p. 3).

Other studies suggest that gifted children “move through the stages of moral development at ages significantly younger than is customary, tend to care about others, want to relieve pain and suffering or show advanced ability to think about such abstract ideas as justice and fairness” (Lovecky, 1997, p. 3). Terman reported that on tests of “trustworthiness” and “moral stability” with children with IQ scores above 130, the average 9-year-old scored at levels usually not attained by most children until they are 14 years old (Gross, 1998).

Furthermore, some studies have noted the presence of strong concern for ethical and moral issues in children with IQs over 180 (Hollingworth, 1942). Silverman (1994) writes of gifted children’s desires to combat injustice, support and protect others less fortunate, and reduce the amount of violence in the world. Many studies echo similar themes of fairness, sensitivity to others, and moral issues as

common preoccupations in the lives of gifted children (Silverman, 2004).

Precocious language development has long been a noted key feature and indicator of giftedness in children (Dalzell, 1998). Highly developed verbal ability may be a correlated, but not necessarily causal factor in a gifted child’s development of moral reasoning (Dalzell, 1998). In fact, Silverman (1994) notes that social psychologists have indicated at a biological basis of moral sensitivity, suggesting that high moral reasoning is a necessary and complex component of abstract reasoning. While both moral and abstract reasoning depend greatly on a child’s verbal prowess in consuming, processing, and expressing information, it appears that “asynchrony, intensity, and moral sensitivity are inherent in the experience of giftedness, whether or not a child demonstrates specific talents in a given domain” (Silverman, 2004, p. 10). Asynchrony, the development of advanced cognitive complexity relative to young age, may therefore explain correlations between a gifted child’s low verbal abilities and high abstract reasoning skills (Silverman, 2004).

Other studies have noted the tendency for intellectually gifted children to attain exceptionally high scores on only certain aspects of cognitive functioning, suggesting an “important and distinct pattern of cognitive strengths” and “highly developed skills in some modalities with many other cognitive skills average or just slightly better” (Sweetland, Reina, & Tatti, 2006). Thus, regardless of a child’s demonstrated specific areas of giftedness, age and cognitive development are correlated with high levels of intellectual capacity (Silverman, 2004).

As under-representation of gifted children from cultural minority groups has become apparent, more non-verbal measures of intelligence have been developed to identify and assess giftedness in these populations. Such developments have especially important implications for identification of giftedness in deaf and hard of hearing children. Incidence of giftedness within this population has so long been

overlooked because “a deficit model is used when the focus remains on the disability (deafness), even when outstanding abilities may be displayed in other areas” (Gross, 2004).

Many educators have protested that the identification of giftedness in deaf children is “closely tied to their ability to communicate and many deaf students experience difficulty in mastering the skills of English” (Vialle & Paterson, 1995). Again, since most identification tests for giftedness use language-based assessment techniques, giftedness in deaf children is frequently mislabelled, misdiagnosed, or overlooked altogether.

As noted previously, outstanding cognitive abilities and high level of moral sensitivity may be intrinsic features of children’s giftedness regardless of their strength in or mastery of a given verbal, or non-verbal, domain. This is supported by findings that “use of global IQ scores often mistakenly lead to assumptions that gifted children are gifted in all academic areas” (Sweetland, Reina, & Tatti, 2006). In fact, children “with Full Scale, Verbal, and/or Performance IQs equal to or above 130 manifested large discrepancies between their Verbal and Performance IQs” that were much greater than those discrepancies noted in the norming sample reported in the WISC-III manual (Sweetland, Reina, & Tatti, 2006).

Increased sensitivity to deaf children’s unique communication needs has resulted in greater awareness of the strengths and weaknesses of various intellectual assessment measures. Culturally and linguistically sensitive psychologists understand that certain subtests of the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV), and Stanford-Binet, Fifth Edition, may be inappropriate for deaf and hard of hearing children based on language use and educational background (Braden, 1992). While referrals by parents, teachers, and peers are increasingly used to identify giftedness in children, other such identification tools include non-verbal IQ measures, characteristics lists, and other measures

utilizing Gardner’s theory of Multiple Intelligences (Vialle & Paterson, 1995).

Why is it important to identify and examine the level and nature of moral reasoning in gifted deaf children? No studies thus far have investigated the development of moral reasoning in gifted deaf and hard of hearing children compared to that of intellectually average deaf and hard of hearing children. As Yun and Moon (2006) have indicated, the socioemotional needs of gifted students may differ from that of other students and require particularly directive types of counseling to address such needs. Furthermore, Easterbrooks and Scheetz (2004) assert that moral reasoning may be taught to children. If gifted deaf and hard of hearing children possess advanced pathways to cognitive and moral development, their educational needs must be adjusted accordingly. Understanding gifted deaf students’ moral development is essential to designing educational programs and “character education” curriculums for such students, and to modifying accordingly the structure of peer support groups and extracurricular activities to supplement gifted deaf children’s growth.

Silverman (2004) notes that “enhanced awareness and moral sensitivity derived from the marriage of cognitive complexity and emotional intensity render gifted individuals vulnerable,” and that such vulnerability “warrants special education and counseling provisions.” Furthermore, “not all gifted children may evidence high levels of moral reasoning. “There are some children who have been emotionally damaged by neglect, abuse, insensitivity, or lack of understanding” as well as gifted children who are “‘one-sided’ in their development, who have been allowed to develop their specific talents without equal attention to their social and emotional development (Silverman, 2004). Identification of giftedness in deaf children and thorough assessment of such children’s emotional sensitivity and moral reasoning skills can provide invaluable information to educators, parents, and mental health professionals seeking to support gifted deaf and hard of hearing children.

Easterbrooks and Scheetz (2004) have noted that “the social realm is one of the most important areas where individuals must apply critical thinking.” If “social learning occurs through imitation, observational learning, and modeling of the behaviors of others,” then access to effective and unhampered communication is necessary to impart social lessons and cultural values to deaf and hard of hearing students (Easterbrooks and Scheetz, 2004). Without efficient communication access, deaf students may struggle to learn the “culturally transmitted values that society expects them to maintain.” Such students may need alternate methods of cultural value transmission, such as direct demonstration and modeling of culturally appropriate behaviors by adult role models.

If gifted deaf students possess potentially intrinsic “shortcuts” to achieving higher levels of moral development, then they may require different methods of instruction in moral and cultural values than their intellectually average deaf counterparts. Furthermore, gifted deaf students of different ages, as with all children, may have differing instructional needs based on other levels of development. “While children of elementary school age are in the process of developing values and moral reasoning, students of middle school or high school age are continually modifying what they have learned as youngsters” (Easterbrooks and Scheetz, 2004), also indicating the demand for intellectually sensitive and age-appropriate education for gifted deaf children who may excel at moral reasoning but still have difficulty with other tasks. Identification and exploration of giftedness and its related attributes in deaf and hard of hearing children is one of the “final frontiers,” and the advanced moral reasoning that is highly correlated with intellectual giftedness is a most intriguing topic of investigation (Gross, 1998)

Studies of the relationship between moral development and intellectual abilities in gifted deaf and hard of hearing children will surely yield interesting and hopefully quite useful findings. Results can shed light on current knowledge related to the cognitive and moral development of deaf and hard

of hearing children, particularly those who indicate asynchronous, or gifted, patterns of development.

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An Exploration of MDMA in Treatment of PTSD

Evan Goodman

Abstract

Conventional pharmacological treatment of post-traumatic stress disorder (PTSD) consists of SSRIs. This class of medicine has been shown to be effective in treating both short- and long-term symptoms of PTSD. However, an inherent problem is that the client/patient is required to continue taking the drug to continue receiving the benefit. This is not cost-effective and presents the possibility of relapse on an infinite time scale. 3,4-methylenedioxymethylamphetamine (MDMA), also popularly known as the street drug ecstasy, can replace SSRIs. MDMA and the SSRIs have a similar mechanism of action. MDMA has been successfully used to improve the mental well-being and subjective outlook of terminal cancer patients in less than a handful of controlled therapy sessions supplemented with the drug. Terminal cancer overlaps with PTSD because it is a singular, intense event that causes great distress and depression. It is proposed that this line of research be explored further.

Posttraumatic stress disorder (PTSD) is defined as exposure to a traumatic event involving real or imagined threats to the health, well-being and/or life of the experiencing individual or others, and with a response of “intense fear, helplessness, and horror.” (APA, 2000). The traumatic event is commonly re-experienced through thoughts and environmental cues. A crucial symptom is general avoidance of associated stimuli. Finally, there are symptoms of hyper-arousal while experiencing a general emotional numbness. The lifetime prevalence for PTSD in adults in the U.S. is about 8%, which exceeds the life time prevalence of all other anxiety disorders (APA, 2000).

PTSD was originally diagnosed in ex-combat victims only, commonly referred to as “shell shock”. This diagnostic label no longer applies only to them. Certain individuals sharing experiences such as

having been involved in war and fighting, terminal illness, or being a victim of sexual assault exhibit much higher prevalence rates of PTSD than the population (Bauso, 2001). It was not until 1980 that PTSD was listed as a diagnosis in the DSM-III.

This area of study overlaps with the high frequency of PTSD related to ongoing conflicts in the Middle East. First, American veterans in current wars of this region suffer from PTSD in significant numbers. Of U.S. Iraq and Afghanistan war veterans, up to 17% display PTSD, depression, or anxiety (Greene, 2005). Second, Sderot, a town located near the Gaza-Israel border is under constant attack by militant rockets launched from Gaza. As a result anywhere from 75-90% of its children and teenagers aged 4-18 are believed to exhibit symptoms of PTSD, and 30% have been formally diagnosed with PTSD (Grinberg & Ashkenazi, 2008). It would also be logical to assume that a significant number of children in Gaza, the West Bank, Golan Heights, and southern Lebanon have PTSD related to past Israeli army invasions and attacks. At the same time, ongoing scientific research in Israel has the potential to improve PTSD treatment. With respect to investigating the safety and efficacy of combination MDMA and psychotherapy treatment, Israel is a possible candidate for a large-scale study, utilizing placebo, sertraline, and paroxetine comparison groups (Doblin, 2002).

The Current State of SSRIs in PTSD Pharmacotherapy

MDMA is a serotonin agonist, specifically acting by inhibiting serotonin reuptake ports in axon terminals. This pharmacodynamic mechanism also characterizes current, conventional drug treatment for PTSD. Presently, there are two FDA approved selective serotonin reuptake inhibitor (SSRI) treatments for PTSD: sertraline and paroxetine. Both have successfully passed the FDA’s double-blind placebo standards, which require that a new

medication be significantly more effective than placebo alone in treating a disease or medical/psychiatric condition. Additionally, there are several other psychotropic medicines that have been used off-label to treat PTSD with a great deal of success. The SSRIs fluoxetine (Prozac), risperidone (Risperdal), clozapine (Clozaril) have been used, as well as several anti-epileptic medicines are among these off-label successes (Davis, Frazier, Williford, & Newell, 2006).

Davis et al. (2006) conducted a meta-analysis of many long-term (14+ weeks) pharmacological treatments for PTSD. The review was conducted because less is known about long-term effectiveness than short-term treatment effects. Among their findings, three SSRIs (sertraline, paroxetine, and fluoxetine) were able to produce significant short- and long-term reduction in participants' PTSD symptoms. Several things should be noted from Davis et al. (2006). First, as with any pharmacological treatment, discontinuation of the drug often causes relapse of PTSD symptoms. This is a major limitation of psychotropic drug treatments in general, and particularly where long-term relapse prevention is desired. Second, the role of serotonin (5-HT) needs to be emphasized, specifically, the role of increases in available 5-HT (SSRIs are 5-HT agonists). Finally, to accept the success rates of such SSRI treatments as sufficient is counter to the creed of clinical psychology. The basic premise of applied clinical psychology should be to give the patient the best possible treatment while continuing to pursue and seek out better treatments. Thus, it is a never ending process, and a final answer can never be reached.

A Potential Short-Term Serotonergic Pharmacotherapy with Long-Term PTSD Reduction: MDMA

The use of hallucinogenic plants (entheogens) in indigenous groups and cultures to treat spiritual woes (which relate to DSM disorders, such as depression, alcoholism, etc.) is not unheard of. A classic example of an entheogen is the use of peyote by Native American tribes in the southwestern United States. Their successful use points to the potential for

MDMA. Although MDMA is not a natural plant alkaloid, that should not preclude it from being used in a professional setting (Greer & Tolbert, 1998).

The idea to use a notorious recreational drug is not novel. Many drugs have been proposed in the past to be used in adjunct to certain treatments, such as the use of peyote to combat alcoholism (Greer & Tolbert, 1998), or LSD to prevent criminal behavior (Riedlinger & Montagne, 2001). However, the effects of many recreational drugs have profound, inherent risks that make many unsafe, even in a therapeutic setting.

The classic hallucinogenic substances (LSD, psilocybin, peyote, etc.) tend to reduce subjective feelings of self-control and have lower safety profiles (Bouso, 2001). Subjective feelings of loss of self-control are the most dangerous risk inherent in these drugs; LSD and its chemical cousins tend to force painful and difficult mental realities on the user. Compared to MDMA, "...LSD lasts 8 to 10 hours, interrupts rational cognitive processes, impacts perception, requires surrender to inner emotional processes rather than permitting negotiation, and can result in feelings of loss of control, fear, and panic" (Doblin, 2002, p. 186). It is unwise to pair a drug that reduces feelings of self-control with a disorder like PTSD because PTSD is caused by a traumatic event in which the individual experienced a lack of control. Doblin also states that the classic hallucinogens (with the exception of MDMA) all resemble LSD in terms of effects. MDMA is better because of its short duration of about six hours until the user is sober. It produces feelings of warmth and control, while reducing interpersonal and intrapersonal defensiveness (Doblin, 2002). There is also a near non-existent interference with cognitive abilities, (Tancer & Johanson, 2006; Doblin, 2002). The qualities inherent in MDMA seem promising in their ability to facilitate a therapeutic relationship between a client with PTSD and a psychotherapist.

MDMA has also been used successfully in the past to treat a variety of disorders, including PTSD (Tancer & Johanson, 2006; Doblin, 2002; Bouso,

2001). Greer & Tolbert (1990) used doses of 100-150mg for men and 75-125mg for women. Recreational doses, on the other hand, are hard to estimate. Parrot (2001) reports that pills seized by U.S. Customs officials, police and other narcotics enforcers find doses ranging from a few dozen milligrams to several hundred milligrams. Sometimes the pills don't even have MDMA in them (Parrot, 2001).

Like SSRI treatments, MDMA can be used in a clinical setting to treat PTSD. Doblin (2002) explained that MDMA should be matched with a population in need of a dramatic benefit, where alternative and traditional methods do not help everyone affected. MDMA has been used successfully to treat terminal cancer patients undergoing extreme distress and depression. Past success with terminal cancer patients suggests that MDMA can assist intense, isolated, difficult events. Similarly, PTSD stems from a single, difficult event. PTSD patients are often in better overall health than terminal cancer patients and often have taken fewer medicines, suggesting a higher success rate due to reduced complications. Finally, although Zoloft and Paxil are approved by the FDA, they produce dependency by definition, and require long-term use. Conversely, MDMA-based therapy requires consumption of the drug less than a handful of times (Doblin, 2002). MDMA should, like SSRIs, only be used under the supervision and therapy of a trained professional.

Bouso (2001) proposed three stages of MDMA-based therapy. First, trust and therapeutic relationship building must be established over the course of several sessions. Second, once trust is established, simultaneous administration of MDMA and revisitation of the traumatic event occurs. Third, after the MDMA wears off, integration of new ideas and beliefs into the present happen, showing clients how their insights can allow them to perceive the world as a less threatening and hostile place. The MDMA experience cannot work outside of a quality therapeutic relationship between therapist and client.

Greer & Tolbert (1998) offer a more elaborated process of MDMA therapy in the early 1980s before the Drug Enforcement Administration (DEA) made it illegal. Before describing their process, they define the terms *set* and *setting*. *Set* refers to the clients' mental set, specifically their goals, motives, and expectations about the drug. The mental set is incredibly important, as a positive mental set is a good predictor of successful outcomes while a negative mental set will disqualify a client. *Setting* refers to the physical context in which the drug is taken.

After screening clients for physical risks and overly-resistant personality types, Greer & Tolbert interviewed the clients, and made more necessary eliminations. Clients who looked for a cure or a treatment were eliminated since the authors believe that MDMA-based therapy is supposed to be self-treating; they viewed it as a means to an end rather than an end in itself. Next, a screening interview was held in person. In addition to the interview, the opportunity was taken to address both the client's questions in addition to the researchers' questions. During this process, the researchers helped clients read forms, answered questions, and also informally quizzed the clients to test their understanding of the procedures.

On the day of MDMA consumption, the clients took primary initiative in their experiences. Clients were given a choice between a low, medium, or high dose, which was converted into a specified, but clinically safe, amount based on body weight. Clients were also given an opportunity to re-dose at the peak if they felt an extension of the effects was necessary. During the primary effects, clients were allowed to listen to music, wear eye shades, or engage in solitary activity so to reflect internally. After the initial effects wore off, clients discussed their experiences with the therapists, and how the experiences could be incorporated into their daily lives. Interpretations were not offered by the therapist, as they would be counter to the aforementioned purposes. Finally, the client was observed and held until deemed safe to drive home or be picked up, or if the session was held

in the client's home, until the researchers were able to leave the client safely (Greer & Tolbert, 1998).

The method described implies that the therapist is completely comfortable with the proceedings, and is able to devote long periods of time to a session. It works best if there are two trained professionals to support the client, so that they can assist each other whenever needed, ranging from little incidents such as bathroom breaks to big incidents such as full-blown panic in the client. In conclusion, this method is viable and realistic. It shows promise, and further research of the Greer & Tolbert method can help create a standard practice supported by empirical tests.

Hurdles to Overcome: Risk & Legality

Two obstacles stand in the way of normalizing MDMA-based therapy: safety issues and the legal status of MDMA. On one hand, MDMA's effects are potentially dangerous and lethal if used inappropriately. One of the most widely known and respected critics of MDMA, Parrot, published a literature review to make a strong case as to why MDMA has more negative than positive outcomes. Parrot (2001) discussed depletion of a serotonin stores, metabolic dangers, anxiety and panic in acute usage, dissipation of positive effects after a few uses, addiction, post-drug depression, and neurotoxicity (Parrot, 2001).

According to Parrot, the root of all concerns is the massive release of 5-HT from synaptic vesicles during use. Such a large release of 5-HT can lend itself to various crises of the sympathetic nervous system (panic, hyperthermia, dehydration, etc). These reactions occurred in up to 1/8 of users in one study. Since many users tend to seek out environments that are noisy, high in temperature, and allow for a great deal of movement to enhance the effects (e.g., a concert), this risk is pronounced. As a result of massive 5-HT release, the famous "mid-week depression" seems inevitable, since the brain has no serotonin with which to work. 5-HT also regulates appetite, sex drive, memory, and aggression. Therefore, potential damage or depletion of 5-HT

systems is very risky. Tolerance also seems to build rather rapidly, requiring more of the drug to achieve the same effects, concurrently increasing the risk of overdose. Problems stemming from snorting, injecting, and smoking pills are also abound. This set of problems can be circumvented, however, if the setting is quiet, peaceful, and adequately controlled.

The concerns espoused in Parrot's (2001) review are legitimate and should not be taken lightly. However, a great deal of the research discussed the heavy, unsafe recreational use of MDMA. The methods by which MDMA has been studied therapeutically in the past did not require heavy, frequent use to be successful, nor did the therapeutic setting contain the elevated environmental dangers. Tolerance is also not an issue, since use is not required more than a handful of times in MDMA therapy. Successful use has been done via oral ingestion, and did not carry the dangers of snorting, injecting, and smoking described by Parrot. Doblin (2002) asserted that, despite espousing MDMA ultimately, concerns about a low physiological safety profile of MDMA are legitimate. However he concluded that MDMA has a very high psychological safety profile (2002).

In a study by Stuart & Parrot (1997), mood profiles of recreational drug users were researched retrospectively. Six subjective characteristics were measured (energy, confidence, elation, agreeableness, mental clarity and composition). He compared his results with LSD and amphetamine users. MDMA scored a significantly high level among past users in 4 categories (energy, confidence, elation and agreeableness), as compared with 3 for amphetamine (energy, confidence and elation), and two for LSD (energy and elation) (Stuart & Parrot, 1997). Despite Parrot's negative claims, this research suggests that once a safety profile is achieved, the benefits of MDMA with PTSD are very promising. When compared with Doblin's (2002) claim that all hallucinogens resemble LSD more than MDMA, the results in Parrot (1997) can be applied.

The other area of concern relates to legal and political hurdles. Greer (1985) described a conference he attended and participated in during the final months before the DEA placed MDMA under its formal scheduling process. At the time of the conference, the World Health Organization (WHO) and the DEA were intervening and beginning to consider legal regulation of MDMA due to just few reports of death and hospitalization that could be accounted for by irresponsibility and overdose alone. At this time, many psychiatrists and psychotherapists were discretely using MDMA in their practice to treat several psychiatric disorders, as well as help people find guidance in life. Unfortunately, MDMA had been invented years ago and was unpatentable, eliminating the possibility of pharmaceutical company support, which may have allowed it to continue being used under a strict prescription basis. The conference also discussed its superiority to LSD for the reasons mentioned previously in this paper. Many findings were presented that showed MDMA was not toxic and quite safe for use (although much subsequent research challenges this proposition). Finally, concerns that the DEA and WHO were largely unaware of the benefits of MDMA were expressed. Organized efforts and plans to make them aware of the conference and its findings were planned (Greer, 1985).

Recently, a group known as the Multidisciplinary Association for Psychedelic Studies has attempted to fund FDA approved studies of MDMA in the U.S., Israel, and Spain. Preliminary results are promising, but major hurdles have yet to be overcome with IRBs, the DEA, and then the many social mores related to MDMA (Doblin, 2002).

Conclusion

Despite risks and concerns related to the use of MDMA in the treatment of PTSD, a great deal of research supports the benefits. Trial studies and more exploratory research should be conducted under FDA and APA ethical standards to more clearly ascertain MDMA's effectiveness in the treatment of PTSD. The risks described are absolute avoidable in a therapeutic setting. Past use has been successful to

treat terminal cancer patients' depression. Moreover, MDMA may be more economic and cost effective than SSRIs. Although there are significant political and legal hurdles, this line of treatment is worth pursuing. Nevertheless, PTSD in the context of clinical psychology has a long way to go before MDMA therapy is normalized in its treatment. However, what will supersede MDMA in the future? If there exists a better treatment, it should certainly replace MDMA.

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Gender Differences in the Psychological Sequelae of Childhood and Adulthood Physical Abuse

Melissa L. Anderson

The DSM-IV-TR characterizes a traumatic event as one in which the person has “experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others and where the person’s response has been intense fear, helplessness or horror” (American Psychiatric Association, 2000, p. 467). This definition encompasses wartime experience, natural disasters, domestic violence, and childhood abuse.

It has been found that the number of traumatic events one experiences is positively related to persistent depressive symptoms (Tanskanen, Hintikka, Honkalampi, Koivumaa-Honkanen, & Vionamaki, 2004). Men and women with three or more traumatic experiences have six times and seven times, respectively, the number of depressive symptoms when compared to those with no traumatic experiences (Tanskanen et al., 2004). Additionally, Kaniasty and Norris (1993) reported that trauma victims often suffer from low self-esteem, an insufficient sense of security, and low stress-tolerance, thereby increasing their vulnerability to depression and anxiety (Hou, Wang, & Chung, 2005).

Psychological Sequelae of Physical Abuse

Multiple studies have reported the short- and long-term mental health consequences of child abuse by demonstrating an increased rate of childhood maltreatment among adults with serious mental illness. For example, Schenkel, Spaulding, DiLillo, & Silverstein (2005) found that participants with histories of maltreatment were significantly more likely to have elevated symptoms of anxiety, depression, and suicidality on the Brief Psychiatric Rating Scale. However, certain studies have also found that patients’ reports of childhood physical abuse were more strongly related to their symptoms

of anxiety than depression (Gibb, Butler, & Beck, 2003).

Childhood physical and sexual abuse have been associated with heightened risk of exposure to further traumatic events in adulthood, and such exposure to traumatic events is associated with subsequent psychopathology (Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003). Intimate partner violence is now recognized as a major psychological risk factor for symptoms of depression and anxiety (Dienemann, Boyle, Baker, Resnick, Wiederhorn, & Campbell, 2000). Many researchers have found that depression is the most prevalent negative mental health consequence of domestic violence (Dienemann et al., 2000). In a study of eighty-two women with a diagnosis of depression, a 61.0% lifetime prevalence of domestic violence was found. Moreover, lifetime prevalence for forced sex was 29.3% (Dienemann et al., 2000). The prevalence of domestic violence among women diagnosed with depression was approximately twice that of the general population and the rate of forced sexual activities was much higher than reported in other populations (Dienemann et al., 2000).

As the effects of childhood and adulthood partner abuse are pervasive, it seems that the occurrence of both traumas in one’s lifetime may be especially devastating. Abuse throughout the lifetime has been associated with elevated levels of anxiety and depression (Ramos, Carlson, & McNutt, 2004). Heim, Newport, Wagner, Wilcox, Miller, & Nemeroff (2002) conducted a study which sought to evaluate the relative role of early adverse experiences as compared to stress experiences in adulthood in the prediction of neuroendocrine stress reactivity in women. The researchers found that peak stress responses to psychosocial stressors were predicted by a history of childhood abuse, the number of separate

abuse events, the number of adulthood traumas, and the severity of depression. More importantly, the *interaction* of childhood abuse and adulthood trauma was the most powerful predictor of stress response. These findings suggest that a history of childhood abuse is related to increased stress reactivity in adult women, which even further increases if additional trauma is experienced in adulthood (Heim et al., 2002, p. 124).

Gender Differences in the Psychological Sequelae of Physical Abuse

While the study by Heim et al. focuses on female participants, it is generally believed that elevated levels of depression and anxiety are present in both men and women who have experienced physical abuse. For children, regardless of gender, experiencing and witnessing high levels of marital conflict decreases the quality of parent-child interactions, which, in turn, is associated with more externalizing and internalizing behavior (MacKinnon-Lewis & Lofquist, 1996).

However, some research suggests gender differences in the psychological consequences of physical abuse. Both boys and girls who experience physical abuse are at increased risk for developing internalizing symptoms such as depression, withdrawal, and anxiety (Baldry, 2007). Yet, it seems that boys are more likely to develop externalizing symptoms, such as violence or acting out antisocially, than internalizing symptoms (Baldry, 2007). It is hypothesized that this gender difference may result from socialization processes, with “girls’ early problem behavior more often channeled into internalizing problems” (Feng, Shaw, & Silk, 2008, p. 33).

Hypotheses

The aim of the current study was to determine the relationship of childhood and adulthood partner physical abuse on subsequent adulthood anxiety and depression. It was hypothesized that higher reports of parent-to-child physical aggression, mother-to-child physical aggression, father-to-child physical aggression, and partner-to-participant physical

aggression would be highly positively correlated with scores on both anxiety and depression. Additionally, it was hypothesized that reports of physical aggression would be more highly correlated with anxiety and depression scores for female participants than for male participants.

Method

Participants

The current manuscript is based on a 2006 study conducted as a requirement for a psychology research methods course. Participants in this study were 280 females and 221 males ranging in age from 17 to 74 years. Approximately 20% of the sample consisted of college students completing a psychology research methods course at a large urban university in the Northeast. In order to generate the data set for class research projects, these students completed a set of self-report measures assessing personality constructs and interpersonal attitudes and behaviors. In addition, each student was expected to recruit additional male and female volunteers to contribute to the data set.

Table 1 summarizes the demographic characteristics of the sample. The average respondent was 24.58 years old, Caucasian, and self-reported as middle class.

Table 1
Frequencies and Percentages of Demographic Characteristics of Sample by Gender

Demographic Characteristics	Male		Female		Total	
	N	%	N	%	N	%
Socioeconomic Status						
Lower	3	1.4	1	.4	4	.8
Working	25	11.3	30	10.7	57	11.2
Middle	84	38.0	116	41.4	203	39.7
Upper Middle	89	40.3	116	41.4	209	40.9
Upper	19	8.6	14	5.0	33	6.5
Missing	1	0.5	3	1.1	5	1.0
Total	221	43.2	280	54.8	511	100
Ethnic Background						
Caucasian	154	69.7	180	64.3	342	66.9
African/African-American	7	3.2	15	5.4	22	4.3
Asian/Asian-American	22	10.0	25	8.9	47	9.2
Latin/Hispanic or Latin Am.	15	6.8	12	4.3	28	5.5
Other	9	4.1	20	7.1	29	5.7
Indian Peninsula	10	4.5	11	3.9	21	4.1
Missing	4	1.8	17	6.1	22	4.3
Total	221	43.2	280	54.8	511	100
Age						
	N	Mean	Standard Deviation	Range		
Males	221	25.50	10.90	18-74		
Females	280	23.91	8.97	17-74		
Missing	10					
Total	511	24.58	9.84	17-74		

Measures

For the purposes of the present study, three self-report measures were analyzed – the Revised Conflict Tactics Scales: Parent-to-Child; the Revised Conflict Tactics Scales: Partner-to-Partner; and the Symptom Questionnaire, as summarized in Table 2.

Table 2
Summary of Measures

Measure	Scales Used	Possible Range of Scores
• Revised Conflict Tactics Scales: Parent-to-Child	• Parent-to-Child Physical Aggression	• 0 – 108
	• Mother-to-Child Physical Aggression	• 0 – 54
	• Father-to-Child Physical Aggression	• 0 – 54
• Revised Conflict Tactics Scales: Partner-to-Partner	• Partner-to-Participant Physical Aggression	• 0 – 48
• Symptom Questionnaire	• Depression	• 17 – 34
	• Anxiety	• 17 – 34

The Revised Conflict Tactics Scales: Parent-to-Child (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is a 44-item measure designed to assess parental behaviors in conflicts with the participant as a child. Participants respond to the scale by indicating how often a particular behavior occurred during the worst year of their childhood on a scale of 0 to 7 (0=never, 6=more than 20 times, 7=happened once, but not in the worst year (recoded as 1)). This measure has subscales to assess the frequency of Negotiation, Psychological Aggression, and Physical Aggression experienced in childhood, and can be split according to behaviors of the mother, father, or both parents. The present study used the Parent-to-Child Physical Aggression, Mother-to-Child Physical Aggression, and Father-to-Child Physical Aggression subscales. Possible scores for the Parent to Child Physical Aggression, Mother to Child Physical Aggression, and Father to Child Physical Aggression subscales range from 0 to 108, 0 to 54, and 0 to 54 respectively.

The Revised Conflict Tactics Scales: Partner-to-Partner (Straus et al., 1996) is a 78-item measure designed to assess the amount of aggression that occurs between the participant and their partner, as reported by the participants. Participants respond to the scale by indicating how often a particular behavior occurred during the past year of their life on

a scale of 0 to 7 (0=never, 6=more than 20 times, 7=happened once, but not in the past year (recoded as 1)). The subscales included in this measure assess Negotiation, Psychological Aggression, Physical Aggression, Sexual Coercion, and Injury. The present study used the Partner-to-Participant Physical Aggression subscale. Scores on this subscale range from 0 to 48.

The Symptom Questionnaire (Kellner, 1987) is a 92-item measure designed to assess symptoms and well-being of the participant. Participants respond to the scale by answering yes/no and true/false questions about their symptoms and well-being. The scale has four symptom subscales: Depression, Anxiety, Anger, and Somatic. Additionally, the scale has four well-being subscales: Content, Relaxed, Friendly, and Somatic Well-Being. The present study examined the Depression and Anxiety subscales. The possible scores for the Depression and Anxiety subscales ranges from 17 to 34 for each scale.

Statistical Analyses

In order to address the hypotheses for the current study, Pearson correlations were calculated among all the study variables: Parent-to-Child Physical Aggression, Mother-to-Child Physical Aggression, Father-to-Child Physical Aggression, Partner-to-Participant Physical Aggression, Depression Score, and Anxiety Score. These analyses were then split by gender.

Results

Table 3 provides descriptive statistics for all the major study variables, separately by gender. T-tests were run to determine whether there were gender differences on any of these variables.

These analyses revealed that males reported significantly more Parent-to-Child Physical Aggression, Mother-to-Child Physical Aggression, and Father-to-Child Physical Aggression. Additionally, females scored significantly higher than males on measures of Anxiety, yet mean scores of Depression did not differ significantly between men

and women. There were no significant gender differences on scores of Physical Aggression from Partner-to-Participant, or Depression.

Table 3
Descriptive Statistics & T Test Results by Gender for Pertinent Variables

Variable	Gender				t
	Female		Male		
	M	SD	M	SD	
CTS: Parent to Child Physical Aggression	8.83	11.32	13.00	15.52	-3.34 p=.001**
CTS: Mother to Child Physical Aggression	6.85	9.44	8.69	10.92	-1.98 p=.045*
CTS: Father to Child Physical Aggression	5.55	8.86	8.11	10.49	-2.88 p=.004**
CTS: Physical Aggression From Partner to Participant	1.31	3.40	1.48	3.56	-.50 p=.620
Anxiety Score	23.85	4.69	22.84	4.25	2.53 p=.012*
Depression Score	22.99	5.40	22.27	4.77	1.56 p=.120

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

As can be seen in Table 4, when evaluating the sample as a whole, levels of Parent-to-Child Physical Aggression were significantly positively related to levels of both Anxiety and Depression. Similarly, Mother-to-Child Physical Aggression, Father-to-Child Physical Aggression, and Partner-to-Participant Physical Aggression were all significantly correlated with current Anxiety and Depression in this sample. Moreover, higher levels of Physical Aggression in childhood, whether perpetrated by mother, father, or both parents, were significantly related to higher scores of Partner-to-Participant Physical Aggression in adulthood. When split by gender, these results seemed to vary.

For female participants, Parent-to-Child Physical Aggression and Father-to-Child Physical Aggression were significantly correlated with higher scores of Anxiety, but not Depression. Conversely, Partner-to-Participant Physical Aggression in adulthood was significantly correlated with both Anxiety and Depression.

For the male participants, Parent-to-Child Physical Aggression, Mother-to-Child Physical Aggression, and Father-to-Child Physical Aggression

were all significantly correlated with higher levels of Anxiety and Depression, and with the experience of Physical Aggression from one's partner in adulthood. However, Partner-to-Participant Physical Aggression experienced in adulthood was not significantly correlated with levels of Anxiety or Depression.

Table 4
Correlations Between Physical Aggression Variables and Depression and Anxiety, by Gender

Total (n= 511)				
	CTS: Parent to Child Physical Aggression	CTS: Partner to Participant Physical	CTS: Mother to Child Physical Aggression	CTS: Father to Child Physical
Anxiety	.167 (p=.000)**	.129 (p=.007)**	.088 (p=.047)*	.119 (.008)**
Depression	.157 (p=.000)**	.119 (p=.013)*	.089 (p=.046)*	.119 (p=.007)**
CTS:Partner to Participant Phys.	.274(p=.000)**	-----	.196 (p=.000)**	.187 (p=.000)**
Females (n=280)				
	CTS: Parent to Child Physical Aggression	CTS: Partner to Participant Physical	CTS: Mother to Child Physical Aggression	CTS: Father to Child Physical
Anxiety	.162 (p=.007)**	.195 (p=.003)**	.023 (p=.707)	.131 (p=.029)*
Depression	.113 (p=.060)	.172 (p=.008)**	-.007 (p=.908)	.083 (p=.169)
CTS:Partner to Participant Phys.	.203 (p=.002)**	-----	.096 (p=.144)	.085 (p=.195)
Males (n=221)				
	CTS: Parent to Child Physical Aggression	CTS: Partner to Participant Physical	CTS: Mother to Child Physical Aggression	CTS: Father to Child Physical
Anxiety	.204 (p=.002)**	.034 (p=.640)	.154 (p=.023)*	.150 (p=.027)*
Depression	.218 (p=.001)**	.026 (p=.716)	.189 (p=.005)**	.192 (p=.005)**
CTS:Partner to Participant Phys.	.230 (p=.001)**	-----	.212 (p=.003)**	.215 (p=.002)**

*p<.05 **p<.01

Discussion

Similar to Schenkel et al. (2005), this study found that participants with histories of physical aggression in childhood (from both parents) and in adulthood (from partner to participant) were significantly more likely to have elevated symptoms of anxiety and depression. Certain studies have also found that patients' reports of childhood physical abuse were more strongly related to their symptoms of anxiety than depression (Gibb et al., 2003). This finding was supported by data from the female participants of this sample, in that higher scores on Anxiety were significantly related to the experience of Parent-to-Child Physical Aggression, while symptoms of Depression were not.

In consensus with Spertus et al. (2003), childhood physical abuse has been associated with higher risk of exposure to further traumatic events in adulthood and such exposure to traumatic events is associated with subsequent psychopathology. This study found that Parent-to-Child Physical Aggression was significantly related to Partner-to-Participant Physical Aggression in adulthood, for both men and women.

While the results confirm previous research on the consequences of physical violence, this study also indicates that there is a significant gender difference in the relationship between physical aggression and subsequent anxiety and depression. However, these gender differences do not support the hypotheses of the current study or align with the work of Baldry (2007), who discussed increased internalization symptoms in female victims of abuse and increased externalization symptoms in male victims. While Parent-to-Child Physical Aggression in females significantly predicted higher levels of only anxiety, the experience of this aggression in males predicted higher levels of both anxiety and depression. Additionally, these correlations were stronger for men than for women.

It was also found that physical aggression perpetrated by only the mother and only the father were related to higher levels of anxiety, depression, and subsequent experience of adulthood physical aggression in men, while few of these relationships were significant for women. Therefore, the current study provides support for the increased internalization of trauma in males than in females. One possible explanation for this reversal is that in American society, females are often encouraged to express emotions, while men are often encouraged to suppress their feelings. This internalization of abuse experiences may result in higher levels of anxiety and depression in male victims.

Interestingly, while the experience of partner physical aggression in adulthood predicted higher levels of current anxiety and depression for women, this relationship was not significant for men, suggesting a difference in the sequelae of childhood

and adulthood physical violence for male participants. In other words, while men's experience of physical abuse in childhood was strongly related to symptoms of depression and anxiety, the experience physical abuse in adulthood did not engender similar symptomatology.

Limitations and Future Research

The findings of this study may be limited by the makeup of the study's sample. The majority of the sample was comprised of college students from affluent backgrounds. However, "domestic violence has generally been found to be more common among couples of lower socioeconomic status, as measured by education, income, occupation, or other measures" (Wilt & Olson, 1996, p. 81). Due to the demographics of the current sample, the reported experiences may not be representative of those who have experienced a large range of physical aggression in childhood or in a partnership.

While this study confirms prior research on the relationship between physical aggression and anxiety and depression levels in adulthood, it likewise contributes to the study of gender differences in the field of intimate partner violence. Specifically, it implies that physical aggression in childhood may have a stronger impact on men's symptoms anxiety and depression than women's. Conversely, physical aggression in adulthood may have a stronger impact on women's levels of anxiety and depression than men's. While the current finding may be limited due to the makeup of the sample, the topic of gender differences in the sequelae of physical aggression requires further research.

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The History of Psychology: Pre-Experimental Western Influences

Elizabeth Adams

Contemporary psychology is a broad science that includes the study of such constructs as human behavior, perception, cognition, neuroanatomy, neuropsychology, motivation, and social and cultural influences of human behavior and thought. Psychology today is an enormous science that explores human behavior and mental processes from the beginning of life until death. Through exploration of the history of psychology, it is possible to gain perspective and understanding of how the discipline of psychology became what it is today, how we came to develop the theories and practices that drive our exploration into the questions of psychology, and what we are still attempting to discover.

The field of psychology has a rich history, and has derived many of its current ideas from other fields of study such as philosophy, physiology, ethology, mathematics, biology, and other scientific disciplines (Hothersall, 2004). Psychology did not become a distinct discipline until the late 1800's. However, the early influences of psychology can be traced back as far as Ancient Greece and Rome (Wettersten, 1975). For the purposes of this manuscript the early Western influences of psychology and physiology will be explored. It is also worth noting that there were major influences outside of Europe, such as Egypt and the Islamic golden age, which are outside the scope of this manuscript. The major contributions of these disciplines to psychology will be examined, as well as how these early influences are still evident in contemporary psychology.

Ancient Influence

Curiosity about human behavior and human mental processes can be found as far back as the fifth and sixth millennia B.C. Hothersall (2004) notes that a "group of dream books" was discovered in Assyria that described the contents of dreams. This discovery, some of the earliest evidence of psychological thought, proves to be especially fascinating, and a particularly symbolic first

discovery of psychological thought. The very first glimpses of psychology remain closely connected to constructs explored in psychology today. Rather than conceptualizing the early history of psychology as something foreign and archaic, it is important to understand that the history of psychology has important relevance to the contemporary field of study.

Classic and Ancient Medicine

Much of the early history of psychology comes from ancient Greece, Egypt, and Rome (Hothersall, 2004). Many of the questions postulated by the ancient philosophers still have relevance to questions explored in contemporary psychology. Many of the first accounts of psychological practices would be considered medical in nature; however, these practices also dealt with issues and followed principles and ideals that would be considered psychological in nature (Hothersall, 2004; Brennan, 1991). One of the great contributions of the Greeks began with Alcmaeon, a physician who is noted to be one of the first to dissect the bodies of animals and examine them, basing scientific conclusions on direct observations. This method was taught to his students in a medical school, and started the important traditions of scientific discovery still used in psychology today (Brennan, 1991; Rand, 1912).

Another interesting parallel to note between Alcmaeon's principles and contemporary psychology is the emphasis he placed on restoring balance and homeostasis. Alcmaeon's perspective on restoring balance within the body parallels contemporary clinical applications of psychology that also emphasize restoring internal balance (Esper, 1964). While many of the specific constructs and methods of achieving this balance are incomparable, it is fascinating to note that the "new-age" holistic approaches to mental health of today were constructs that were discussed during the times of the ancient Greece.

Hippocrates, a successor of Alcmaeon, is frequently discussed in the history of psychology and is considered the most important contributor to ancient Greek medicine (Hothersall, 2004). One of the most well known contributions of Hippocrates is the “Hippocratic Corpus,” a collection of approximately seventy early medical writings. Hippocrates, like Alcmaeon, was passionate about scientific exploration and direct observation of medical phenomena. He established a medical school to teach his objective approach to the field of medicine. In addition to teaching his students that diseases are a result of natural causes, and should be treated with natural medicine, he emphasized that the physician must not interfere with this healing (Brennan, 1991; Esper, 1964). Hippocrates taught his students that the first responsibility of the physician is to do no harm. Interestingly, the Hippocratic oath was inspired by the teachings of Hippocrates, but was finalized by physicians in later generations (Hothersall, 2004).

Hippocrates’ writings provide a look into the conclusions and advances that he was able to make from his observations. It is remarkable to note that even without the technology of modern medicine, he was able to make accurate hypotheses about the human body based on his detailed observations. One of the most notable of these hypotheses can be found in Hippocrates writing *On Injuries of the Head* which contains his famous observation that damage to one side of the head often causes disability in the opposite side of the body (Brennan, 1991). This observation led to his conclusion that the left side of the brain controls the right side of the body, and the opposite is true for the right side of the brain. Hippocrates provided detailed descriptions of diseases such as mania, postpartum depression, phobias, paranoia, and hysteria based on his observations of these illnesses (Hothersall, 2004).

In Hippocrates’ *Nature of Man*, he argued that disease was a result of an imbalance of the four humors (Rand, 1912; Hothersall, 2004). Hippocrates described the four humors as the critical elements inside the body: black and yellow bile, blood, and

phlegm. He proposed that an imbalance of these elements were the cause of illness or disease. This theory influenced the treatment of disease for many centuries (Hothersall, 2004). Illnesses were treated by attempting to restore balance of the humors. For example, bloodletting was considered a valid form of treatment as a way to restore balance when excess blood was believed to be causing disease. This practice continued for many centuries (Hothersall, 2004). An imbalance of humors was considered to not only cause disease, but also affect personality and mood. While the practice of restoring balance to humors is no longer in use, Hippocrates’ influence remains in the contemporary language of medicine, which can be noted in such words as bilious, phlegmatic, and sanguine (Esper, 1964).

One of Hippocrates’ most important contributions to science was his rejection of mystical causes of disease. This belief is evident in his writing *Concerning the Sacred Disease*. In this paper, Hippocrates challenged the notion of the time that epilepsy, referred to as the sacred disease, was caused by divine intervention. In this work, he argues that epilepsy is the result of damage to the brain, contesting the widely accepted belief of that time (Brennan, 1991; Hothersall, 2004).

Hippocrates is frequently considered to be the father of medicine, promoting the use of direct observation and challenging ideas that diseases resulted from supernatural causes (Rand, 1912). He was particularly vocal about his beliefs, as evidenced in all of his writings. In *Tradition in Medicine* he emphasizes the importance of diet in the etiology and treatment of illness while arguing against popular claims that diseases are caused by “excessive hotness, coldness, wetness, and dryness” (Brennan, 1991). In his writing *The Science of Medicine*, he asserts that medical knowledge is superior to philosophical knowledge, and again emphasizes the importance of scientific methods of understanding illness and disease (Brennan, 1991; Hothersall, 2004). For these reasons, Hippocrates’ traditions provided an important precedent for how we understand and conceptualize disease, temperament, and mental

illness. His writings served as some of the first detailed descriptions of many behavioral and psychological conditions. Hippocrates' influence can still be seen today, and is noted to have carried on and directly influenced other important contributors to the history and development of psychology. One of the most commonly noted is the work of Greek physician Galen.

Galen lived and wrote nearly 600 years after the time of Hippocrates, but is frequently noted to have kept the ideas and traditions of Hippocrates alive (Hothersall, 2004; Wettersten, 1975). Most markedly, Galen continued Hippocrates' tradition of emphasis on the importance of observation. Galen, a trained physician and anatomist, was an appointed court physician of the Roman Emperor, Marcus Aurelius Antonious (Wettersten, 1975). Galen utilized his access to a large collection of texts, referencing ancient wisdom and building on these ideas through his own observations and empirical studies. In Galen's work, he referenced ideas from Herophilus and Erasistratus, who are noted to be the first to distinguish nerves from the circulatory system, and sensory nerves from motor nerves. Galen's reference to ancient wisdom also provides important documentation of these findings, as the original writings have been lost (Brennan, 1991).

Between the years of 165 and 175 A.D., Galen wrote a seventeen-book treatise. *On the Natural Faculties* is frequently cited as his most well known work, and continues the Hippocratic tradition of direct observation (Hothersall, 2004; Brennan, 1991). In this work, he details and discusses many physiological observations. In his book *On the Usefulness of Parts*, Galen provides an extensive discussion on the structure and functions of various parts of the body (Rand, 1929). This writing includes an extensive description of the anatomy of the cerebral ventricles, as well as the pineal gland, which played a critical role in developing our understanding of "the mind" and psychology. While Galen did not describe a location of specific mental processes, such as cognition and memory, his work greatly influenced later philosophers' discussions on the topic.

In Galen's *On the Doctrines of Hippocrates and Plato*, Galen supported Hippocrates and Plato's belief that the "vital powers" of humans have three sources, the heart, the brain, and liver. This assertion stood in contrast to the view of Aristotle that supported the idea that the heart was the only source of life. Interestingly, while Galen was a strong proponent for the use of direct observation to gain knowledge, he strongly supported the idea of divine design in the structure of the human body (Brennan, 1964; Rand, 1929). Galen believed that through his studies of anatomy, there was strong evidence to support the idea that the precise mechanics of the human body are not mere accident or coincidence, and would be impossible without divine design.

Although many of Galen's writings are medical and physiological in nature, he also wrote about mental illness. In his writing *On the Passions and Errors of the Soul*, Galen describes his belief about the etiology and cure for mental illness (Hothersall, 2004; Brennan, 1964). Galen proposed that diseases of the soul occur as a result of feelings such as anger, grief, and envy, which cause an irrational power not allowing the body to obey reason. Galen further stated that in order to overcome the irrational power, an individual must attempt to gain self-knowledge, which can be a difficult task. In his writing, Galen encouraged enlisting a therapist figure to discuss passions with, and attempt to guide this self-knowledge and discovery. Galen's insight into the importance of such a figure is still relevant to our contemporary conceptualization of therapy (Brennan, 1991).

Classic and Ancient Philosophy

A thorough discussion of ancient influence on the history of psychology would not be complete without a discussion of ancient philosophy. Socrates, Plato, and Aristotle are considered to be especially important influences during this time. The philosophers are credited with the establishment of epistemology, the philosophy of human knowledge. These philosophers are also noted to have written and explored many topics directly relevant to the field of

psychology, such as memory, learning, and cognition (Hothersall, 2004; Brennan, 1991).

Socrates is considered one of the greatest thinkers of all time. Socrates emphasized the importance of questioning and examining all aspects of life. He sought knowledge and understanding through logical and rigorous testing. He believed that this particular approach to questioning would produce answers to questions about life and human existence (Rand, 1929). Socrates would frequently walk the streets and engage people in intense questioning. This form of knowledge seeking was analogous to his method of teaching. Socrates believed that absolute truth was not determined by the authority of a few people, but instead lay in the mind of each person (Hothersall, 2004).

Socrates proposed that the task of the teacher was to draw out and uncover the absolute truth that lies hidden in the individual's mind. In the Socratic method of teaching, the teacher guides the pupil through a series of questions, leading the student to the truth by pointing out flawed thinking. This method of teaching emphasized a partnership between the student and the teacher, and rejected the conceptualization of the teacher as a superior in the relationship. Hothersall (2004) notes that Antiphon, a contemporary of Socrates, utilized the Socratic method when working with patients who were suffering from grief. Antiphon is frequently considered the first psychotherapist, with parallels being noted between his early work and modern cognitive behavioral therapy.

Plato is one of Socrates' pupils and successors. Much of what we know of Socrates comes from the writings of Plato. By adopting Socratic principles related to truth and discovering knowledge, Plato explored and wrote about many topics relevant to psychology. In the *Meno*, Plato chronicles and discusses many of Socrates' beliefs and teaching, including his ideas related to people's beliefs and knowledge (Rand, 1912; Hothersall, 2004).

In Plato's *The Republic*, he describes the structure of a utopian ideal state. In this society, there are a small number of people in the government that contain superior reasoning skills. These people, referred to as the Guardians, ruled the society that was under a philosopher king (Brennan, 1991). An individual's place in Plato's conceptualized society depended on the specific characteristics that the person possessed. For example, those with particular courage would be warriors and those that possess great beauty and harmony would be artists and poets. This perspective supports the nativistic belief that characteristics are hereditary (Hothersall, 2004). Plato further proposed that these characteristics and qualities were housed in various arts of the body: courage in the chest, and reason in the head, for example.

Interestingly, although Plato's *The Republic* is a description about an ideal state, it has been proposed that this writing is in actuality an analogy for the structure of the human psyche (Rand, 1912; Brennan, 1991). The various roles outlined in society, such as the warrior and the poet, are considered to be a metaphor for the various parts of the psyche. In this analogy, Plato is describing the intellectual, spirited, and courageous parts of the human mind and personality. Additionally, just as a philosopher governs Plato's utopian society, an ideal psyche is governed by reason and intellect rather than desire (Brennan, 1991; Hothersall, 2004).

Plato's thinking regarding topics relevant to the field of psychology is evident throughout his writings. In *The Timaeus*, Plato discussed the origins of the nature and the universe. Within this writing, Plato also described his thoughts on the origins of the psyche and the body, as well as how they coexist in humans. Plato also philosophized about a theory of sensation, diseases of the mind and body, and mental and physical health (Hothersall, 2004).

Aristotle is the last of the major Greek philosophers frequently discussed in reviews of the origins of psychology. While Aristotle is considered a philosopher, he is also considered a natural scientist

(Rand, 1912). Aristotle emphasized the importance of careful observation in the search for knowledge. He believed that while deductive reasoning was useful, the reality may not always be as logical as his predecessors assumed. As a result, direct observations and inductive reasoning were methods of inquiry also employed by Aristotle (Brennan, 1991).

Among Aristotle's most frequently referenced work is his theory regarding human memory. Aristotle based his theory of memory on his observations of his own cognitive processes as well as the cognitive processes of others. Hothersall (2004) notes that Aristotle's principles have been referenced by several contemporaries throughout the course and development of the field of psychology, and additionally, some principles are still relevant to psychology today.

Aristotle outlines his theory of memory in *Concerning Memory and Reminiscence* (Aristotle, 1941). In his writing, Aristotle proposes that memory results from three types of associations. He believed that objects, experiences, and people are linked together based on how much they are related or unrelated to one another. Aristotle also emphasized the importance of frequency on memory, proposing that the more frequently an experience happens, the better it will be remembered. He also observed that some associations form more easily than others, and that some events are remembered more easily than others (Aristotle, 1941; Hothersall, 2004).

Aristotle proposed that memory and our knowledge are formed by our experiences. He is considered to be an empiricist, and supports the theory that all of the ideas and knowledge we have is a product of our experience. It has been noted that the ideas proposed by Aristotle influenced the work of his predecessors, including John Locke and the empiricist philosophers, and John Watson and the behaviorist psychologists (Hothersall, 2004). Aristotle's theory of the mind was the first of many theories formulated on how the mind works. Aristotle's theories are credited with contributing to

theories, ideas, concepts, and practical applications in psychology.

Aristotle also discussed the concept of catharsis. In his work *Art of Poetry*, he discusses the idea that dramatic arts can arouse emotion in audience members and have a cathartic effect (Aristotle, 1941). Hothersall (2004) notes that this concept is still discussed as it relates to viewing violence on television. Aristotle's theory has been applied to the idea that watching television can provide a release for those that view it.

Aristotle also came to several interesting, although false, conclusions about the mind, human behavior, and the human body. One of the most well known fallacies is his assertion that the heart is the locale of the mind. He based this conclusion on his observations of the heart, noting that it is the first organ to move and that a wound to the heart is frequently fatal (Aristotle, 1941). Aristotle's belief that the heart is the mind is closely aligned with the common perception of the time that the heart was the most vital organ in the body (Brennan, 1991). Despite his mistakes, Aristotle greatly influenced the field of psychology. His published writings, such as his work *On the Mind* indicate that interest in psychology and psychological topics.

The Medieval Ages

The early Middle Ages, which occurred from the beginning of the fifth century to around the year 1000 A.D., is often considered the Dark Ages, and is frequently overlooked in historical accounts of psychology. This belief is often contested as some scholars note important contributions to psychology during this period. One of the most noted scholars to examine the influence of medieval psychology is Kemp.

Kemp asserts that during the Medieval Ages, a prescientific psychology did exist. Additionally, Kemp also reported on a medieval method of scientific discovery. It is important to understand that while the scholars of the time referenced the ancients, they did not always follow and support their

perspectives, and in fact, aimed to make their own technological advances during this time (Kemp, 1990).

Unfortunately, very little translated material exists from Medieval ages, and much of the published information regarding this time period is incorrect. For example, it is commonly believed that mental illness during the Middle Ages was considered to be a result of supernatural powers, such as witches or demons. Other than a few frequently discussed cases, mental illness was most often believed to be the result of a biological problem (Kemp, 1990).

Many of the psychological theories developed during the Middle Ages contained elements of both theology and biology. Most of the theories on the soul during this period were largely influenced by the prevailing religious beliefs of the time. Saint Augustine, the Bishop of Hippo, wrote about the mind, asserting that God was the ultimate source of truth, and the ultimate goal of the human mind was to know God (Kemp, 1990). In Augustine's *Confessions* he describes in detail his own weaknesses, thoughts, passions, and emotions. This work has led to Augustine being referred to as the first modern psychologist, as this work provides an in-depth picture of one's inner world (McKeon, 1929; Brennan, 1991).

Other significant writings of the time include Nemesius' treatise *On the Nature of Man*, which is believed to be the earliest existent description of Medieval ventricular theory. In this work, it was theorized that the mental faculties exist in the ventricles of the brain. Augustine also theorized about the ventricles (McKeon, 1929). In his work *On the Literal Meaning of Genesis*, he states that the medical writers of the time believed that the front ventricle controls sensation, the middle ventricle controls memory, and the posterior ventricle is responsible for human motor functions. While this does not reflect the current understanding of the faculties of the ventricles, it is the first known writing to apply the idea of specific functions to specific ventricles and other parts of the brain (Kemp, 1990).

Significant psychological works from the Western Middle Ages include Albert the Great's *De Anima*, Thomas Aquinas' *Sententia Libri de Anima*, and Peter of Spain's *Scientia Libri de Anima*. Thomas Aquinas' *Summa Theologica* is considered one of the most important and influential writings of the Middle Ages. This writing contains a theory on the nature of the soul, although like other writings of the time, it is largely influenced by the religious climate of the time (Kemp, 1990).

The Renaissance

The Renaissance is considered a particularly important time for the history of psychology. The first formal philosophical and scientific antecedents of psychology can be traced to the Renaissance era (Hothersall, 2004). One of the greatest technical achievements of the Renaissance period was the advent of the printing press. Among the important works printed during the Renaissance were the first books focusing on prescientific psychology. It is believed that the earliest printed psychology book, *Psichiologia*, was produced in 1590 and is the title of the work by Marcus Marulus. Additionally, a collection of writings from various authors, titled *Psychologia hoc est, de hominis perfectione*, was published this same year (Hothersall, 2004).

Many of the influential scientific advances during the Renaissance were not a result of individuals studying psychology. The Renaissance was the stage for great advancements in the areas of art, exploration, and discovery. The great advances made in other scientific areas did not simultaneously occur for the study of psychology (Hothersall, 2004). It has been proposed that the political climate of the Renaissance and the reaction from the theological community to the development of other sciences, mainly astronomy, likely stifled the development of psychology. Psychology and the study of the mind, and thus God's creation, were considered inextricably related to religion, and thus could not be studied without scrutiny of the theological community (Brennan, 1991).

A consideration of the advances during the Renaissance would not be complete without an overview of the advancements in the field of astronomy. In 1543 Copernicus proposed a sun-centered model of the universe. This proposition strongly contrasted the church's position that the earth, and God's greatest creation, man, alone occupy the coveted position at the center of the universe (Brennan, 1991). Copernicus, well aware that his position was against the church delayed publication of his paper for many years. Giordano Bruno, a successor of Copernicus lectured on, and defended his system. He paid the price for speaking against the church and was burned at the stake in 1600 (Brennan, 1991; Hothersall, 2004).

Galileo, an avid scientist, played a significant role in the advancement of astronomy. In 1606 Lippershey constructed the first telescope. Galileo was commissioned to validate Lippershey's claims about the potential of this instrument. It was originally thought that the telescope could be used to communicate with ships offshore that were approaching with goods. Galileo, however, turned the telescope toward the sky. Galileo supported Copernicus's claims, and was subsequently asked by the church to stop teaching the theory. Galileo went on to write *The Dialogue*, which presented both sides of the geo-centric and helio-centric debate about the universe. The book was eventually listed on the Vatican's list of prohibited books, and he was forced to sign an abjuration (Esper, 1964; Rand, 1912).

Galileo's careful observations of the sky, and painstaking attention to detail, helped pioneer experimental design. He developed the method for measuring factors while controlling for other variables. Galileo was notorious for being meticulous with his records and design. In fact, Galileo's records were so detailed that his contemporaries could replicate some of his experiments (Hothersall, 2004).

Isaac Newton, a mathematician, demonstrated the importance of using math in experimental design. Newton also made a number of significant scientific advances. Newton found that white light passing

through a prism could be deconstructed into its composite colors. He also proposed the law of gravity after he completed a variety of experiments. Newton's law of universal gravity was the basis for Edmund Halley's prediction about Halley's comet. He proposed that the documented sightings of two comets, seen seventy-six years apart, were actually the same comet. He also predicted when, correctly, the next time that Halley's comet would make an appearance (Brennan, 1991; Hothersall, 2004).

Another important contributor and scientist of the Renaissance period was William Harvey, an English scientist who studied anatomy and was fascinated with the human body. Harvey began research on human blood and the heart. He carefully observed a variety of animals, and utilizing careful observations and mathematics, he concluded that the heart does not produce blood, but instead pumps it. His work, *The Movement of Blood*, is considered one of the greatest accomplishments of the Renaissance (Brennan, 1991).

Descartes, a Renaissance philosopher, also emphasized the use of mathematics to discover truth. He developed analytical geometry and laid the foundations for advancement in the area of math. In addition to his mathematic contributions, he helped found modern Western philosophy (Rand, 1912; Esper, 1964). Descartes believed that philosophy was a logical scientific system of thought, and that careful methodology could be utilized to seek truth from philosophical reason. Descartes was not without the controversy of the other scientists who went against the teachings of the church. Descartes questioned the existence of God, and his books were forbidden (Esper, 1964).

Descartes was also noted to have puzzled over the mind. Descartes believed that the greatest proof of human existence is the capacity to think, noted by his famous phrase, "I think, therefore I am" (Esper, 1964). Descartes arrived at this famous understanding by sitting down and rejecting everything in existence while still proving that he still exists. After much thinking, he arrived at the conclusion that he thinks, and it is all he can really do.

So, the fact that Descartes thinks is proof that he exists. He believed that thinking occurred in the mind and that the mind was separate from the body.

Descartes was among the first to discuss the dualism of the mind and body. In his writings, he discussed how the mind controls the body, and where this takes place. Descartes ultimately proposed a theory that is similar to the nervous system (Hothersall, 2004). He also proposed that the pineal gland was the home of “the mind,” and believed that this is the spot in the brain where thinking ultimately occurred. He chose the pineal gland because it is not mirrored on both sides of the brain, but rather a solitary structure (Hothersall, 2004). Descartes writings on the mind and body were among the most detailed. His ponderings on the relationship between the mind and the body mirror contemporary philosophy on the mind-body relationship today. Descartes also proposed that while some ideas and understandings were innate, others were learned (Brennan, 1991). Like the mind-body question, this curiosity about nature and nurture is still discussed in contemporary psychology.

In addition to his writing and philosophy on the mind, Descartes wrote about and described emotion. He theorized that humans have six “passions” – wonder, love, hate, desire, joy, and sadness (Hothersall, 2004). He proposed that all other passions, or emotions, are simply a mixture of these identified six. He also reasoned that animals do not have minds and therefore do not have self-awareness. This philosophy allowed uncontrolled animal dissections, and eventually led to an early-developed understanding of the workings of the eye (Hothersall, 2004).

Post-Renaissance Philosophy

The years following the Renaissance also included important advances and contributions to the development of psychology. Advances in the field of philosophy were made which later became a primary part of the groundwork for psychology. The empiricists, Thomas Hobbes, John Locke, and George Berkeley, emphasized the importance of experience

(Brennan, 1991). These philosophers considered the mind a passive entity, which was shaped by the experiences of the individual. Countering the empiricists of the time were the associationists, David Hume, David Hartley, and James and John Stuart Mill, who conceptualized the mind as more active, and proposed that the mind developed associations between concepts and experiences. In addition, the German philosophers of the era proposed nativism, and believed that the inborn structures of the mind were critical in understanding experiences (Hothersall, 2004).

John Locke was the first major British empiricist. He advocated the experimental and observational methods of Newton and Harvey. He believed in understanding human behavior by using direct observation, and thus emphasized the importance of observable and measurable experience on human development. Locke also had great political interest and wrote about the two treatises of government, advocating for checks and balances in the governmental system (Hothersall, 2004). In his book, *Some Thoughts Concerning Education*, Locke proposed that all children are born with equal potential, so education (i.e. experience) is critical to development. As a true empiricist, he did not believe in innate habits or characteristics (Hothersall, 2004; Esper, 1964). His philosophical position mirrors the later psychological school of behaviorism.

Locke also believed that children are influenced by other significant experiences, in addition to education. For example, he emphasized parental bonding, and proposed that children become attached to parents and a few other close individuals because the children are accustomed to receiving “food and kind usage” from these specific people (Hothersall, 2004). In addition to thoughts about human development, Locke also touched on ways to improve the human condition and change behavior. One of his proposals closely resembles modern systematic desensitization used to treat fears and phobias. Locke proposed that one should slowly accustom a child to the fear, using varying degrees of exposure; the child will eventually be able to overcome the fear. In his

writing on this matter he emphasized the importance of not pushing the child until he or she is confident in the previous stage of exposure (Hothersall, 2004). This technique is still used today.

Locke's work, *Concerning Human Understanding*, is commonly thought to be an extremely influential writing on the field of psychology. Locke wrote various essays, which eventually became the entire work, while traveling and engaging in debates with philosophers and scientists about the human condition (Brennan, 1991; Rand, 1912). He was attempting to sort out undiscovered knowledge from discovered knowledge and establish a set of rules for understanding the mind. In his writing he proposed that the mind was a blank slate, which eventually became made of ideas, which were built on experience (Rand, 1912). This book officially began the empiricism movement. Locke believed that we experience the world through our senses and our internal states of mind. These experiences essentially became the content and driving force of the mind (Brennan, 1991).

George Berkeley was a brilliant and talented young writer and philosopher. An avid writer, his four most influential books were published within four years of one another (Hothersall, 2004). Berkeley campaigned for a theory that was an extension of Locke's philosophy. This theory came to be known as immaterialism. He argued that all knowledge is indeed from experience, but taking his theory one step further, he proposed that matter and the outside world only exist because it is perceived. In other words, Berkeley proposed that the world only exists because it is perceived, and that it would not exist without a mind to perceive it. His radical ideas were staunchly criticized. Despite the criticism he received, Berkeley was also taken seriously and well respected. His book, *An Essay Toward a New Theory of Vision*, is thought to be one of first works of physiological optics, and was considered landmark and revolutionary during its time (Hothersall, 2004).

Locke and Berkeley were not the only philosophers of the time writing and discussing ideas

relevant to psychology. A number of European philosophers, who identified as nativists, were a present opposition to the empiricist's philosophical assertions.

Gottfried Wilhelm von Leibniz was a brilliant mathematician and political activist who corresponded frequently with Locke. While Leibniz considered Locke's *Concerning Human Understanding* a brilliant piece of work, he wrote a rebuttal entitled *New Essays on Understanding* (Hothersall, 2004; Brennan, 1991). In this collection of essays, he argued that while animals might be empiricists, and empiricism may account for many human actions and ways of being, it does not fully explain all aspects of the human condition. Leibniz believed that there are necessary and inborn truths, or innate knowledge, that is necessary. Leibniz proposed that intellect allows for reason and understanding, but that there are inborn and innate qualities that allow for our understanding of experiences, and account for how this reasoning takes place (Brennan, 1991).

The 18th and 19th century brought about the school of associationism. In the 18th century, David Hume and David Hartley began to examine how the various parts of the mind come together to form associations (Esper, 1964; Hothersall, 2004). In his work, *A Treatise of Human Nature*, Hume distinguished between impression and ideas. He stated that impressions come from sensations and ideas are built from the impressions. In other words, an association is formed in the mind between the idea and the impression. He further believed that simple ideas in the mind then associate with one another to form complex ideas (Esper, 1964; Hothersall, 2004).

In the 19th century, three important associationists dominated the field. The first two were James Mill and his son, John Stuart Mill. James Mill, active in politics, and a misogynistic man who disdained his wife, devoted most of his time to working with his son. Influenced by Locke, Mill supported the importance of education, and spent hours a day teaching his son. He gave his son vigorous and

lengthy lessons. It has been said that John Stuart Mill received one of the most stringent educations on record (Hothersall, 2004).

The pressure on John Stuart Mill was undoubtedly great, and he later wrote that, as a result of his upbringing, he felt like a “cold, calculating machine” (Hothersall, 2004). Later in his life, he suffered a serious bout of depression, and continued to struggle with it throughout his life. However, after his first, and most severe bout, he came out more aware of his emotions and internal world. Interestingly, in stark contrast to his father’s misogynistic beliefs, Mill’s essay, *The Subjection of Women*, is considered a great landmark of women’s rights. This essay was inspired by his love for Harriet Taylor, who advocated for the rights and roles of women. In his essay, he argued that women will only be equal to man when their rights are no longer violated. As an elected official, Mill also helped to begin the pursuit of women’s suffrage (Hothersall, 2004).

Both James and John Stuart Mill also contributed to the philosophy that helped to develop psychology. James Mill published *Analysis of the Phenomena of the Human Mind* in 1829. He supported the idea that the mind was made of sensations and ideas. In addition to the five senses proposed by Aristotle, Mill added muscle sensation, disorganized sensation, and sensations from the alimentary canal. He believed that these eight identified senses were the primary elements of consciousness (Hothersall, 2004). Mill also proposed a theory on associations. He believed that sensations gave way to ideas and then various ideas are associated together. Mill also wrote about strength of association, asserting that the impact of the experience, as well as the repetition of the experience would impact the strength of the association in the mind. His ideas are similar to many contemporary theories on learning and memory. John Stuart Mill supplemented many of his father’s ideas with his own thoughts on cognition. Mill saw the mind as more active than his father proposed. Rather than simply forming passive associations, Mill believed that the mind is active and productive (Hothersall, 2004).

John Stuart Mill earned international acclaim with his book *System of Logic*. In this writing, he attempted to study the scientific processes and the assumptions underlying the various sciences. Edward Titchener adopted Mill’s definition of psychology - “the science of the elementary laws of the mind” - over sixty years later (Brennan, 1991). Mill asserted that you could study the mind, although he believed it would not be an exact science. Through his studies of human behavior, Mill emphasized the importance of not only studying the individual, but also studying his or her environment when considering development. The environment is considered a central component of development in the field of psychology.

Immanuel Kant provided a counter voice to the Mill’s philosophy. Kant was a strong nativist and a successor of Descartes and Leibnitz. Kant believed that while we do develop and learn from our experience, there is something innate that first allows us to experience. Kant, like other nativists, believed that certain knowledge is inborn and helps to frame our experiences. Kant believed that the empiricists of the time ignored the existing capabilities of the mind (Hothersall, 2004).

Kant’s perspective on science influenced German philosophy and later psychology. Kant proposed that science should be established based on reason. He also believed in using observations and mathematics to establish scientific truths. Kant argued that the study of psychology posed a great difficulty, as he believed one mind could not study another mind objectively. While he did not believe in a true science of psychology, he promoted the anthropological study of psychology, much like the work of William Wundt (Hothersall, 2004).

Early American Mental Philosophers – Influences largely ignored

The period in the United States between the Colonial times and the Civil War is largely unmentioned in texts on the history of psychology. Philosophy in colleges during this period was dominated by the writings of Thomas Reid, Thomas Brown, and John Locke. Locke’s essay titled “Essay

Concerning Human Understanding” was one of the most commonly referenced texts in pre-scientific psychology courses on mental philosophy.

Prior to the new laboratory psychology developed in Europe, American mental philosophers played an important role in the development of psychology. It is noted that many of the American psychologists who assisted and studied psychology in the new European laboratories were students of American mental philosophers, and helped to influence their experiences, such as James Cattell, who worked with William Wundt (Fuchs, 2000). Fuchs (2000) notes that it was Cattell himself that had a hand in setting the precedent for neglecting the influence of early American mental philosophers. In 1929, Catell described America as a blank slate, untouched by the influence of psychology prior to the return of Americans who went to study in the laboratories of other countries.

In 1929, E.G. Boring published the first edition of his *History of Experimental Psychology*. In this text, Boring traced the start of psychology in the United States to William James. While this may be appropriate for an account of *Experimental Psychology*, the text was subsequently considered the standard resource outlining the history of psychology, and the inclusion of early American influence was lost. More recent historians, however, have noted that the development of psychology in America was influenced prior to the German psychology that came to the United States after the Civil War (Fuchs, 2000).

Historians note that the German laboratory psychology that appeared in the United States was also influenced by the philosophy taught in America since colonial times. Philosophy in the United States was primarily dominated by the philosophies of England and Scotland, with modest continental European influences. Additionally, after America’s independence was won, there was a push for the development of unique and separate American politics, literature, arts, and science. As a result, an attempt was made for America to develop its own philosophical traditions. It has been argued that

psychology in America is the product of a clash between the tradition of American mental philosophy that has been developed since colonial times and German experimental psychology (Fuchs, 2000).

The Early American Mental Philosophers of the United States were those who were educated in colleges established during the colonial and federal periods. Many of these philosophers went on to teach in these colleges as well. Some of the most noteworthy include Joseph Haven, Larens Hickok, Thomas Upham, and Francis Wayland. Each of these individuals is noted to have published texts in the discipline. The education of these and other noted American mental philosophers of this period took place in the seminaries, which were the only graduate education available at this time. In addition to religious studies, seminary education also included the learning of classical languages, as well as training in rhetoric, logic, and philosophy. Learning German was also considered an important part of education, as it was utilized to confront German Biblical criticism and philosophy. This awareness was particularly helpful with the increase of German scholarship and philosophy that appeared in America during the end of the 19th century (Fuchs, 2000).

The Baconian emphasis of empiricism in the study of science, philosophy, and theology was also included in seminary education. The graduates of seminary that went on to become mental philosophers utilized their practice of philosophy in an attempt to further their understanding of the mind. The purpose of this search was the belief that understanding the mind would help understand God and his creation. The pursuit of this knowledge commonly followed the Baconian tradition of empiricism. The texts attempted to organize and examine the knowledge and observations of the mind. The understanding of the mind at the time was developed from introspective observations about consciousness, reports and observation of human and animal behavior, medical case histories, literature, and the Bible (Fuchs, 2000).

Observations noted from the senses were used as a starting point to understand the mind. Wayland wrote and focused on such cognitive processes as perception, attention, memory, reasoning, and imagination. These processes were categorized as the intellectual processes of the mind. Haven, Hickok, and Upham also explored the intellectual processes, but furthered their philosophical exploration to “the sensibilities” of the mind. These included emotions, feelings, affections, motivation, desire, and will. Included in their writings were explorations of how mental processes subsequently result in action (Fuchs, 2000).

The American mental philosophers have recently been credited with securing a tradition of treating the mind scientifically in the United States. The mental philosophers of the time carefully took studies of the mind as far as the Baconian methods would allow it. They clearly established a place for mental philosophy in the course of study at universities, which eventually became the home for the new psychology courses. The mental philosophers identified topics that laboratory psychology methods came to address. Most importantly, they pursued an empirical and inductive approach to the study of the mind. Their emphasis on the function of the mind is understood to have influenced the functional analysis that came to characterize psychology in America (Fuchs, 2000).

While many of the new psychologists openly rejected mental philosophy as archaic and too closely aligned with religion instead of science, new historical perspectives have shed light on the influence of early mental philosophers on the development of psychology in the United States. Understanding the influence of early mental philosophers helps to create a more complete picture of the history of psychology in the United States. The inclusion of this influence paints a picture of psychology in America as evolutionary rather than suddenly developed after apprenticeships with psychology laboratories abroad (Fuchs, 2000).

Pre-experimental psychology paved the way for many important advances in the field of psychology. The vast time period covered in this writing depicts the evolution of the science of psychology, and the long-standing tradition and existence of wonder and speculation about the mind and human behavior. The ancients used philosophy and observation to propose theories about the mind and the human condition, some of which were stunningly close to contemporary theory. Even during the darkness of the Middle Ages, psychological thought was present.

The Renaissance gave birth to the Western Scientific revolution. The work of Galileo, Newton, and Harvey paved the way for an emphasis on specific scientific methodology. The philosophical foundations of psychology continued to be developed in the Renaissance and post-Renaissance eras. Descartes declared the mind a separate entity from the body, and psychological thought became split between the two orientations of nativism and empiricism. While influences of the philosophers abroad have been extensively documented, the influence of American Mental Philosophers on pre-scientific psychology has also been noted. It is clear that psychology’s beginning was an evolution with many influences, and began long before the psychological laboratories of the late 1800’s.

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Once Upon a Time: How Fairy Tales Help Us Understand Developmental Psychology

Cara Miller

Eternally enchanted by the classic fairy tales which were read to them as children, adults continue this age-old tradition by reading those same fairy tales to their children, who grow up and read these tales to their children, so on and so forth. What accounts for our marvelous enduring attraction to fairy tales, their timeless popularity throughout years of evolution, and our continuous fascination with stories of dark woods, talking animals, poisoned apples, clairvoyant mirrors, devoted dwarves, evil stepmothers, and princesses banished in towers unscalable? The answer ultimately lies in fairy tales' power to reassure our anxieties and teach us and our children life lessons by revealing the journeys we must take to arrive at our destinations as well-adjusted adults. Such adventures are not unlike the mission of developmental psychology, which for years has sought to construct a blueprint of our journey from childhood to adulthood.

Fairy tales are frequently reported to be as old as history itself. Zipes (2006) traces the history of the fairy tale from its origin in oral folktales, and further back to the ancient myths of which many fairy tales are newer manifestations. Zipes (2006), Campbell (1991) and other scholars suggest that fairy tales were first told by storytellers as an extension of meaningful rituals. Such tales, as the myths told before them, assisted tribes in creating explanations for natural phenomena, structuring calendars to signify meaningful communal events such as harvesting, hunting and marriage, and educating children in the ways of moral conduct, social interaction, and survival (Campbell, 1991). With the transition from oral traditions to the printed literary form, fairy tales were retold, reshaped, and eventually printed and distributed to reach wider audiences. Under the watchful eyes and nurturing pens of writers such as the German brothers Jacob and Wilhelm Grimm and Danish author Hans Christian Anderson, fairy tales were formally reborn as tools for the socialization and teaching of children.

Today, fairy tales can assist us in exploring and understanding the rich and equally enchanting world of developmental psychology. Fairy tales illustrate and illumine some of the most basic as well as complex theories proposed by developmental psychologists, address the universal and culture-specific conflicts and anxieties that haunt children's dreams, and assist teachers and parents in passing onto children their important lessons about the nature of humankind and the world (Cashdan, 2000).

Once upon a time... there was perceptual development, the primary and most essential developmental tool in the evolution of the human being. Two of the leading views on children's perceptual development, constructivism and differentiation, provide contrasting frameworks through which to observe, interpret, and understand perception in children. As advocated by psychologists Eleanor Gibson and Jean Piaget, perception, respectively, can be attributed to a child's innate and increasingly honed ability to differentiate between stimuli, or to the child's acquired construction of perceptual understanding through experiential learning.

Piaget stresses an empiricist view of perception as the construction of a child's reality through active, hands-on exploration of the world. Children first master simple perceptual tasks through a curiosity-driven process of discovery and repetition of stimulus-responses, like the "Boy Who Left Home to Learn About Fear." According to Piaget, children explore their environments and attend to stimuli; in so doing, they integrate their perceptual experiences into progressively more complex concepts that take earlier concepts as the building blocks from which to emerge. Like the protagonist of the aforementioned tale who set out to learn about fear, children must undertake a series of repeated actions before habituating to such stimuli. They are then

emboldened to explore novel stimuli in a self-perpetuating loop of knowledge construction, and, as did the little boy, they consistently “stack up” these perceptual building blocks until they have erected solid concepts about their surroundings.

Conversely, nativist Gibson suggests that children are born with sensory abilities ready to organize perceptual knowledge. A child’s environment is rich with information to be detected, and the role of the environment is to assist children in detecting that information. The ultimate task of perceptual development is honing in on the minimal information necessary to detect objective properties of the environment, called “affordances.” As children become increasingly able to detect affordances in their environment, so they are increasingly able to discern information that is available to be perceived, and learn how to obtain, or “pick up,” information through spontaneous exploration or observation of events and their consequences.

The magical equivalence of such affordances in fairy tales are the talking animals and fairy godmothers such as those who help Cinderella gather ashes into a pot in order to fulfill her stepmother’s wishes, and then escape to the festival with mice-turned-horses and a pumpkin-turned-coach, respectively. These magic donors enable Cinderella to access the royal world that awaits beyond the four ashy walls of the cellar, and in turn enables child readers and listeners to understand the reciprocity between Cinderella and her environment, and so between themselves and theirs.

Piaget’s and Gibson’s separate approaches highlight the need for an increased focus on the combination of innate and environmental forces that shape perception, a controversy inherently and cleverly addressed in numerous fairy tales. Handsome princes are transformed into ugly frogs and ferocious beasts under the curses and magic workings of enchantresses, while other characters such as princesses and witches are, respectively, innately sainted or despicably evil. Both Piaget and Gibson acknowledge the child’s capacity to adapt to the

environment and to learn from experience, just as Goldilocks and Red Riding Hood learn about danger in “Goldilocks and the Three Bears” and “Little Red Riding Hood.” Each asserts that children are complex organisms that are sensitively “wired” whether to a greater or smaller extent, just as Bluebeard’s wife is innately curious about the hidden contents of the castle room behind the locked door. And finally, while both approaches can be framed and interpreted in means to support their seemingly contradicting assertions about nature and nurture, it is possible that the two are inextricably intertwined in ways that we cannot yet understand. What strange form of magic is this?

Much has been written about the nature and development of cognition, but Jean Piaget and Lev Vygotsky have especially impacted what we understand and appreciate today about children’s cognitive development. Each presents a cognitive development model that resembles the other in emphasizing internal reflection and processing as well as the importance of the surrounding physical world. However, their models differ with respect to the primacy of thought and emphasis on development of language in children.

Piaget believed that children’s acquisition of knowledge is constructed by the actions they take upon their surroundings. As children’s progressing sensorimotor skills encourage increasingly adroit manipulation of objects and promote pre-operational representational thought about those objects, the underlying and antecedent foundation on which words and organized linguistic expression are eventually constructed (Miller, 2002). Piaget’s stage theory suggests that all children are ultimately striving to achieve equilibrium in cognitive functioning – the fairy tale equivalent of “happily ever after.”

During the first three stages, the child proceeds from physical conceptualizations of his or her world to concepts based on representations, and finally to “internalized, organized operations” (Piaget, 1952). Finally, once aged approximately eleven through

fifteen years, a child reaches the formal operational stage, in which her mental operations “are no longer limited to concrete objects” but can be applied to verbal as well as logical statements, “to the possible as well as the real, to the future as well as the present” (Piaget, 1952). It is at this time that we, as adults, can begin to fully utilize all the lessons which we learned through the reading of fairy tales, as they are truly “psychological mirrors” through which we see ourselves (Young, 1997).

Similar to Piaget, Vygotsky encouraged cognitive development through the resolution of puzzling unknowns about the world; the more a child explores and comes to understand these unknown properties and characteristics of his environment, the greater the outcome of attaining an omniscient cognitive equilibrium of sorts. Vygotsky’s model is marked by its emphasis on social interactions, support and scaffolding from experienced persons such as parents and teachers, and the successful utilization of cultural tools made available in the surrounding environment. A Vygotskian model of development is illustrated by the very concept of fairy tale characters growing and succeeding with the aid of wise elders such as fairy godmothers and mysterious men to bestow golden festival dresses and magic beans as in, respectively, the tales of “Cinderella” and “Jack and the Beanstalk.” Similarly, there is magic in the very action of an adult reading a fairy tale to a child, as the adult’s physical and emotional support acts as a scaffolding structure to and from which the child can stretch and grow.

Fairy tales have been touted as especially indispensable tools for children’s cognitive development during the preoperational and concrete operational periods, nurturing and gently shaping a child’s animistic and “magical thinking.” Bettelheim (1989) suggests that children recognize that the language of fairy tales are those “of symbols and not of everyday reality,” that although such “[fantasy] stories are unreal, they are not untrue.” Fairy tales thus permit children to grow increasingly self-aware, even if they may not understand how such delightful

tales reflect “not external reality but inner processes taking place in the individual” (Bettelheim, 1989).

In addition to aiding and supporting perceptual and cognitive growth, fairy tales are renowned and beloved for their role in encouraging children’s moral development. Piaget placed the origins of moral development within the cradle of cognitive development, suggesting that as a child progresses through the stages of cognitive growth, “he or she assigns differing relative weights to the consequences of an act and to the actor’s intentions” (Gerrig & Zimbardo, 2002). Lawrence Kohlberg’s suggested stage theory of moral development emulates and expands upon Piaget’s stages of cognitive development, wherein children, adolescents, and adults progress from one moral stage to the next while developing increasing abilities to reason and make complex judgments.

Each of Kohlberg’s stages is “characterized by a different basis for making moral judgments,” the lowest of which is based on self-interest, while the highest is based on the good of society regardless of one’s personal gains (Gerrig & Zimbardo, 2002). Thus, Kohlberg’s theory ties development of moral judgment to a child’s general cognitive development, focusing, in particular, on “the use of reason to draw conclusions about what ought to be done to achieve justice and fairness in a particular situation” (Lovecky, 1997). From their favorite fairy tales, children are cautioned not to behave like the evil witch of “Rapunzel” or vain queen of “Snow White and the Seven Dwarfs,” but instead like the thoughtful and mutually-caring siblings Hansel and Gretel and the Brave Little Tailor in those eponymous fairy tales.

In Kohlberg’s stage model, “the progression from Stages 1 to 3 appears to match the course of normal cognitive development. The stages proceed in order, and each can be seen to be more cognitively sophisticated than the preceding” (Gerrig and Zimbardo, 2002). Just as Kohlberg illustrated his proposed stages with a series of dilemmas that forced reasoners to weigh, compare, and eventually select a course of action based on one of several moral

principles (Gerrig and Zimbardo, 2002), so fairy tales are a naturally existing precursor and enjoyable method of tussling with life's increasingly advancing dilemmas. As with defining "intelligence," researchers have differed on definitions of "morality" and moral development. Morality is a "system of beliefs, values, and underlying judgments about the rightness or wrongness of human acts" (Gerrig and Zimbardo, 2002). Moral development is seen by some as the "ability to reason about universal principles of justice and fairness (moral judgment)," as demonstrated by Cinderella, who slaves and toils for her evil stepsisters until justice is meted by the arrival of her prince and the blinding of her evil stepmother and stepsisters. For others, it is a matter of ability to empathize with and to act to alleviate others' suffering (compassion)," as symbolized by characters such as the industrious elves who aid a poor shoemaker in "The Elves and the Shoemaker." Others suggest that altruism is the best indicator of moral reasoning (Lovecky, 1997), as illustrated by Snow White's selfless care of the seven dwarves even after she is banished from her home and family.

Many agree that a moral act is one that constitutes recognizing the emotions of another person or persons, and identifying the action or actions needed to change the situation at hand. Fairy tales are abundant with such examples, whether in the form of the third little pig who invites the two other pigs into his brick house to escape from the Big Bad Wolf in "The Three Little Pigs," or the young Belle who trades entrapment within the home of the terrifying Beast in exchange for her elderly father's freedom in "Beauty and the Beast."

Not coincidentally, the numerous lessons embedded in fairy tales mesh and merge well with the model of development outlined by Erik Erikson. His proposed first stage, Basic Trust versus Mistrust, addresses a theme central to the plots of "Rumpelstiltskin" and "Little Red Riding Hood," which is "to detect impending danger or discomfort and to discriminate between honest and dishonest persons" (Miller, 2002). Stage 2: Autonomy versus Shame and Doubt, is embodied in the images of the

helpful animal or the magic talisman present in so many fairy tales. Stage 3: Initiative versus Guilt, is addressed in tales encouraging children to identify and accomplish their goals, as Cinderella did; emulate their heroes, as did Ivan in the Russian tale of "Ivan and the Firebird"; and to demonstrate their self-worth, as did the poor boy who discovered the source of the worn-out dancing shoes in "Shoes that Were Danced to Pieces."

Similarly, Abraham Maslow's five-tiered hierarchy of needs is exemplified by numerous fairy tales that imbue their readers and listeners with lessons about the importance of these needs. According to Maslow, basic growth needs such as a human organism's physiological needs to breathe, eat, and regulate homeostasis must take precedence over all other needs. This necessity is reflected in decisions made and actions undertaken by fairy tale characters such as Jack, who sold his barren cow Milky White in exchange for magic beans so he and his mother could eat. When physiological needs are met, the need for safety and security will rise, as demonstrated in the tale of "Snow White and Rose Red," who seek refuge from an evil troll. This is followed by love/belonging needs that involve emotionally-based relationships such as those found within families and friendships. Fairy tales demonstrate the dangers of being removed from one's human community, as in the case of Belle, who is estranged from her father and locked up in the castle of the dangerous and unpredictable Beast.

Once resolved, love/belonging needs cultivate esteem needs such as the need to be respected, to respect others, and to have self-respect, evidenced by the courageous protagonists of fairy tales such as "Aladdin and the Magic Lamp," "The Brave Little Tailor," and "Puss In Boots." Finally, according to Maslow, once all of the aforementioned needs are met, growth needs such as self-actualization and transcendence are the loftiest goals to which humans can aspire, motivated by their inner desires to make the most of their intrinsic talents, abilities, and potential. Fairy tales ultimately encourage children to strive to their greatest potential. "Having taken the child on a trip into a wondrous world, at its end the

tale returns the child to reality, in a most reassuring manner,” Bettelheim (1988) writes, “So the fairy story ends with the hero returning, or being returned, to the real world, much better able to master life” (Bettelheim, 1988). Fairy tales encourage children to become just as strong, brave, fearless, autonomous, and giving as their heroes who defeat witches, trolls, giants, and bears in order to marry their beloved princesses and live happily ever after.

Socialization of the child, “the process by which society attempts to teach children to behave like the ideal adults of that society” (Miller, 2002), is strongly reinforced through fairy tales which model to children examples of obedient and disobedient behavior, respect for elders and royalty, behavior in dangerous situations, and exemplars of valiance and courage. One such demonstrative fairy tale is “Goldilocks and the Three Bears,” in which repeated exposure to the three bears’ increasingly-sized, and thus increasingly dangerous bowls, chairs, and beds results in Goldilocks’ ultimate conditioning to run, not away from home, but certainly away from bears.

Fairy tales can also be used to explain and better understand the tenuous nature of attachment studied by many researchers. Many scholars have noted the curious absence of parents, especially mothers, from fairy tales, and their replacement with wicked stepmothers and evil queens. Similarly, fathers are present in very few tales. The absence of parents encourages fairy tale child protagonists to form attachment bonds with other children and adults, and encourages adult and child readers to muse on the nature of human relationships. As Young (1997) notes, “the story of the Pied Piper reminds us that every parent has to deal with letting go of their children and every former child has to cope with feelings about how it is to leave home.” Similarly, Hansel and Gretel, securely attached to their father, leave home to find food with the understanding that he will still be there waiting for them upon their return.

Despite their roots in ancient history, fairy tales as a genre are flexible enough to change with the times.

As increased attention is paid to the implications of applying cross-cultural and multicultural frameworks in developmental psychology, so is increased attention given to the various manifestations of similar and divergent themes and motifs in fairy tales from around the world. Scholars are turning a critical eye upon examinations of race and gender in fairy tales. For example, examining characters’ racial make-up in film adaptations of fairy tales has encouraged scholars such as Hurley (2005) to note the binary couplings of evil characters with dark skin and black colors and innocent, moral characters with white skin and light colors. Some have criticized outmoded and outdated versions of fairy tales in which women and minorities are portrayed unfavorably, using new modalities such as fractured and feminist fairy tales to offer new, more affirmative portrayals of women and people of color (Hurley, 2005).

Fairy tales can even enable us to understand the recent explosion of information-processing theories that have accompanied technological advances sweeping the globe in recent years. Such information processing models further our understanding of children’s cognitive development, and are strongly supported by fairy tales that have been said to clearly and concisely outline the logistics of problem-solving. Tales demonstrate how children can logically take steps to address the problem at hand, whether it is Cinderella seeking the aid of her wise fairy godmother and marrying her prince, Ivan tricking the wicked czar with his own cauldron of boiling water, or Jack escaping the giant and finally cutting down his infamous beanstalk. Ultimately, fairy tales showcase and highlight the marvel of problem-solving. They are an ode to the amazing human prowess for developing solutions to the everyday obstacles that plague us.

Childhood fairy tales, and their equivalent epics and myths of yore, hold the attention of children during various stages of their development while each fairy tale addresses, and illuminates possible solutions to, specific emotional and cognitive anxieties faced by children. In addition to helping children cope with

emotionally laden cognitive concepts, fairy tales function as play forms permitting children to unleash their burgeoning creativity, language, and literacy skills, as binoculars with which children can peer into their souls and those of others, exercises with which to strengthen memory and reasoning, models for undertaking social relationships, and blueprints for the development of upright morality. Bettelheim (1988) notes, “as the child brings imagination, intellect, and emotions together in identifying with the characters, inner resources develop that enable the child to eventually cope with the vagaries of life.” Thus, the child listening wondrously to her favorite fairy tale gains increasing confidence in herself and her future.

The hallmark of developmental psychology is that it is a forever-changing field, pregnant with new theories and continually evolving towards something much greater than itself. Perhaps, given the increased industrialization of today’s society, future years will see the field gravitate towards a greater nature-inclined perspective as psychologists and geneticists seek to understand the genes responsible for our every action, thought, and behavior. Similarly, fairy tales, as they have done for hundreds of years, will continue to evolve and change as older versions are retold and translated into different languages, newer versions are published, and amalgams of older tales are combined and reborn into new forms. In developmental psychology, as with fairy tales, the horizons are limited only by our imaginations, and perhaps with just a bit of luck and a bit of magic, they will continue, “happily ever after.”

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