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Play and the Search for Identity in the Cyberspace Community

Dorothy G. Singer

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I. Introduction: Becoming a Person

Just as the toddler in Picasso's painting is attempting to take its first steps and separate itself from mother, the child, and later the adolescent, is

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attempting to find a place in society and is searching for ideas and for role models in which to have faith. Erik Erikson, a pioneer in lifespan psychology, asked what we would consider to be the earliest and most undifferentiated "sense of identity." He suggests that it arises out of the encounter between mother and infant through mutual trustworthiness and mutual recognition.[1] According to Erikson, this mutuality is the "first experience of what in later reoccurrences in love and admiration can only be called a sense of 'hallowed presence,' the need for which remains basic in man."[2] One way that the baby differentiates itself from others takes place through play. The play between mother and child reinforces a feeling of trust and leads to a sense of self-autonomy and independence that changes and broadens throughout childhood and adolescence. This is highlighted in Erikson's fifth stage, *identity versus role confusion*.[3]

II. Babies, Toddlers, and Early Childhood

A sense of self is at first manifested by infants through *sensory-motor play*, the pleasure of using their senses, sucking, gazing at objects, smelling, touching, and moving toes, fingers, arms and legs.[4] The mother-child bond begins with mother holding the baby during feeding, rocking, bathing, and diaper changing.[5] This is the time for baby to begin to recognize mother or any other prime caretaker. Infants can smile a neo-natal smile from birth on, but a true smile begins at about six weeks and leads to the mother-child interaction, the "love dance" that is so important in developing trust.[6]

Babies repeat acts for pleasure and seem to be practicing their skills, such as swatting at the mobile over the crib or dropping items into a basket.[7] Infants babble and enjoy listening to sounds of others' voices.[8] They imitate

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1. *See* ERIK H. ERIKSON, CHILDHOOD AND SOCIETY 249 (1963) (describing how the trust of the mother-infant relationship forms the basis for the child's sense of identity).

2. ERIK H. ERIKSON, IDENTITY: YOUTH AND CRISIS 105 (1968) [hereinafter YOUTH AND CRISIS].

3. *See id.* at 87 (explaining role confusion).

4. *See* JEAN PIAGET, PLAY, DREAMS AND IMITATION IN CHILDHOOD 109–10 (1962) (describing different forms of play and their role in defining the self).

5. *See* H. RUDOLPH SCHAFFER, MAKING DECISIONS ABOUT CHILDREN 40–47 (2d ed. 1998) (reviewing literature on mother-child bonding).

6. *See* NANCY E. DOWD ET AL., THE HANDBOOK OF CHILDREN, CULTURE, AND VIOLENCE, at xxxii–xxxiii (2005) (describing the early social and emotional development of infants).

7. *See* PIAGET, *supra* note 4, at 91 (providing an example for the stage of play in which children repeat acts for the pleasure of the repetition).

8. *See* DOROTHY G. SINGER & JEROME L. SINGER, THE HOUSE OF MAKE-BELIEVE 58

expressions of others, such as opening their mouths, and copying hand gestures and body movements.[9] Very early on, children need to learn to become aware of and to recognize emotions, and, soon, intentions in themselves and others. Understanding how to express emotions appropriately is crucial to their social development. Children have a strong desire to learn what others think of them and to gain their approval.[10] Identity formation involves self-awareness, understanding, and recognizing one's own and another's emotions.[11]

Andrew Meltzoff and M. Keith Moore propose that babies are social at birth and can imitate the facial expressions of others as early as two or three weeks.[12] We now have evidence resulting from experiments dealing with mirror neurons demonstrating that certain neurons fire in the same region of the brain that controls action and perception.[13] Mirror neurons are a type of brain cell that respond the same way when we perform an action and when we witness someone else perform the same action.[14] In the early 1990s, a team of Italian researchers, led by neuroscientist Giacomo Rizzolatti and his colleagues at the University of Parma, first identified mirror neurons.[15] They found individual neurons in the brains of macaque monkeys that fired when the monkeys grabbed an object and also when the monkeys watched another primate grab the same object.[16] Watching an action and performing that action can activate the same parts of the brain in monkeys down to a single neuron.[17] Whether similar brain changes occur in people is being tested with humans

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(1992) [hereinafter HOUSE OF MAKE-BELIEVE] ("The young child will repeat words and syllables for the mere pleasure of talking and may do this alone or in the presence of another child or a parent.").

9. *See* PIAGET, *supra* note 4, at 78–79 (discussing theories of imitation).

10. *See* HOUSE OF MAKE-BELIEVE, *supra* note 8, at 121 (explaining how children's desire for approval drives their learning and play activities).

11. *See, e.g.*, Janet Strayer, *The Dynamics of Emotions and Life Cycle Identity*, 2 IDENTITY: AN INT'L J. THEORY & RES. 47, 70–71 (2002) (highlighting the importance of emotional development in the formation of identity).

12. Andrew Meltzoff & M. Keith Moore, *Newborn Infants Imitate Adult Facial Gestures*, 54 CHILD DEV. 702, 706 (1983).

13. *See* Eric Jaffe, *Mirror Neurons: How We Reflect on Behavior*, 20 APS OBSERVER (2007), http://www.psychologicalscience.org/observer/getARticle.cfm?id=2167 (last visited Sept. 29, 2009) ("The striking implication of mirror neurons is that the same brain region that controls action also supports perception . . . .") (on file with the Washington and Lee Law Review).

14. *Id.*

15. *Id.*

16. Giacomo Rizzolatti et al., *Understanding Motor Events: A Neurophysiological Study*, 91 EXPERIMENTAL BRAIN RES. 176, 178 (1992).

17. *Id.*

now. Mirror neurons could help explain how and why we "read" other people's minds and feel empathy for them.[18]

Although toddlers strive for autonomy, they are still dependent on the caregiver. At about twelve to twenty-four months, they enjoy looking at other toddlers but do not socially interact with them in any meaningful way.[19] The toddler is still concerned with self, but she soon combines words "Me want" or first names such as "Mary wants." Emotions are communicated through gestures and simple combinations of words to express such ideas of refusals, likes, dislikes, and desires.[20] Between the ages of eighteen and thirty months, the child learns to identify others through language usage—"baby," "boy," "man," and later through the understanding of concepts—boy versus girl, and good versus bad.[21] Toddlers also think about what they can do and what they cannot do, and gradually gain a feeling of self-competence.[22] And what a great moment for the eighteen-month-old who looks in the mirror and discovers that the smiling person is really herself no matter how many poses she takes or even how many different expressions she makes.

Symbolic imitation in the form of simple play occurs as early as eighteen months, when toddlers "feed" a doll or toy bear.[23] Toward the end of the second year, toddlers can use a substitute object for an item, such as a small stick to symbolize a doll or truck. Younger children may play beside their

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18. *See* Jaffe, *supra* note 13 ("A study in Science a year later showed activity in similar neural regions whether a subject actually experienced a painful stimulus or simply observed a loved one receiving the same shock. To many researchers, these and similar findings suggest that mirror neurons play a large role in empathy.").

19. *See* Celia A. Brownell & Earnestine Brown, *Peers and Play in Infants and Toddlers*, *in* HANDBOOK OF SOCIAL DEVELOPMENT 183, 184 (Vincent B. Van Hasselt & Michel Hersen eds., 1992) ("The traditional picture of infants and toddlers playing with each other represents them as interested in peers as objects, but lacking the social skill or interest to engage one another as social partners.").

20. Shoshana Mafdali Goldman, *Language in the Preschool Child: Development and Assessment*, *in* HANDBOOK OF CLINICAL ASSESSMENT OF CHILDREN AND ADOLESCENTS 259, 284–85 (Clarice J. Kestenbaum & Daniel T. Williams eds., 1992).

21. *See* Terri L. Shelton, *Theories of Development and Learning*, *in* DISORDERS OF DEVELOPMENT AND LEARNING 1, 7 (Mark L. Wolraich ed., 2003) (explaining the emergence of representational thought beginning at eighteen months).

22. *See* Anthony D. Pellegrini & Robyn M. Holmes, *The Role of Recess in Primary School*, *in* PLAY = LEARNING: HOW PLAY MOTIVATES AND ENHANCES CHILDREN'S COGNITIVE AND SOCIAL-EMOTIONAL GROWTH 36, 38 (Dorothy G. Singer et al. eds., 2006) ("[C]hildren's overestimation of their own cognitive and social skills enables them to persevere at a task even though, by adult standards they are not doing it very well. This perseverance may lead to self-perceived success which may, in turn, lead to higher self-perceived competence . . . .").

23. Goldman, *supra* note 20, at 269.

friends without interacting (parallel play), but older children enjoy social play by interacting and conversing with each other.[24]

Symbolic play, the use of imagination, is at its peak for the three-, four-, and five-year-olds who engage in pretend or make-believe play, and can take on many guises, such as doctor, prince, queen, or mail carrier.[25] In a Chinese Southern Sung Dynasty (1000 A.D.) painting of court children, we see youngsters imitating a warrior, pretending to be various animals, riding a "horse," a boy playing with a doll, and other manifestations of symbolic play.[26] All the socio-dramatic forms of play that children engage in today, as in the past, are attempts to become the adults they wish to be in the future. They use people they see in everyday life as role models, or they pretend to be people, animals, or magical figures gleaned from the stories that have been read to them, or programs viewed on television, or found in video and computer games.[27]

There is an increasing body of research evidence suggesting that imaginative play is linked to important developmental processes, including reality-fantasy distinctions, the development of a theory of mind, and the ability to defer gratification in the interests of effective adaptive responses.[28]

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24. *See* Claire Hughes & Judy Dunn, *Children's Relationships with Other Children, in* SOCIOEMOTIONAL DEVELOPMENT IN THE TODDLER YEARS 177, 179–80 (Celia A. Brownell & Clarie B. Kopp eds., 2007) (describing early child-child relationships and the transition from parallel to cooperative play).

25. HOUSE OF MAKE-BELIEVE, *supra* note 8, at 72.

26. *See* Edward H. Schafer, *Playing Grownup*, HORIZON, Winter 1971, at 20–21 (depicting *A Hundred Children at Play*).

27. *See* SANDRA L. CALVERT, CHILDREN'S JOURNEYS THROUGH THE INFORMATION AGE 29 (1998) (discussing children's role models in the media).

28. *See* PAUL L. HARRIS, THE WORK OF THE IMAGINATION 42–45 (2000) (reviewing research on pretend play and performance on theory of mind tasks); Robert D. Kavanuagh & Paul L. Harris, *Pretense and Counterfactual Thought in Young Children, in* CHILD PSYCHOLOGY: A HANDBOOK OF CONTEMPORARY ISSUES 158, 163 (Lawrence Balter & Catherine Susan Tamis-Lemonda eds., 1999) (stating that research demonstrates a relationship between pretend play and children's understanding of mental states); Angeline Lillard, *Pretend Play as Twin Earth: A Social-Cognitive Analysis*, 21 DEVELOPMENTAL REV. 495, 523 (2001) (proposing an intertwined developmental relationship model between social cognitive skills and the activity of pretend play); Pascal Boyer & Shelia Walker, *Intuitive Ontology and Cultural Input in the Acquisition of Religious Concepts, in* IMAGINING THE IMPOSSIBLE: MAGICAL, SCIENTIFIC, AND RELIGIOUS THINKING IN CHILDREN 130, 145 (Karl S. Rosengren et al. eds., 2000) (reviewing research on children's ability to distinguish what is "real" from what is "imaginary" and "magical"); SANDRA W. RUSS, PLAY IN CHILD DEVELOPMENT AND PSYCHOTHERAPY: TOWARD EMPIRICALLY SUPPORTED PRACTICE 9–13 (2003) (discussing the developmental benefits of imaginative play); David C. Schwebel, Craig S. Rosen & Jerome L. Singer, *Preschoolers' Pretend Play and Theory of Mind: The Role of Jointly Constructed Pretence*, 17 BRIT. J. DEVELOP. PSYCHOL. 333, 343–44 (1999) (concluding from research results that children who engage in more pretend play have an enhanced ability to distinguish

A recent study by Cemore and Herwig using home observations reported that greater amounts of make-believe play at home were correlated with measures of delay of gratification.[29] Make-believe play was the only variable significantly related to such self-regulation even when age, sex, family structure, ethnicity, child-care setting, and mother's education were considered. The accumulating research evidence on self-regulation, emotional control, autonomy, and individuality also indicates that the emotional intensity found in play is linked to creative thought as well as to the practice of alternative solutions and evaluative processing that produce effective delay of gratification.[30]

Correlates of pretend play in preschoolers and a broad range of imaginative processes in older children attest further to the many constructive possibilities of a varied and active inner consciousness. Children and adolescents who have shown evidence of involvement in or in elaboration of pretend play, or of positive daydreaming and playful thought, have been found to demonstrate greater verbal fluency and vocabulary strength, more use of future or subjunctive grammatical forms, more perseverance, more initiation of activities, more upbeat moods, and less hostility, overt aggression, or uncooperative behavior.[31]

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appearance and reality); Jerome L. Singer, *Imagination and Waiting Ability in Young Children*, 29 J. PERSONALITY 396, 408 (1961) (explaining how children's fantasy-making capacity can assist in deferring gratification); JEROME L. SINGER, THE CHILD'S WORLD OF MAKE-BELIEVE: EXPERIMENTAL STUDIES OF IMAGINATIVE PLAY 64 (1973) [hereinafter WORLD OF MAKE-BELIEVE] (discussing the impact of imaginative play on the ability to defer gratification); DOROTHY G. SINGER & JEROME L. SINGER, IMAGINATION AND PLAY IN THE ELECTRONIC AGE 37 (2005) [hereinafter IMAGINATION AND PLAY] (explaining how imaginative play can teach children to control their impulses and tolerate delay).

29. *See* Joanna J. Cemore & Joan E. Herwig, *Delay of Gratification and Make-Believe Play of Preschoolers*, 19 J. RES. IN CHILDHOOD EDUC. 251, 260 (2005) ("Children in this study who engaged more often in make-believe play were able to delay gratification longer."); Walter Mischel & Nancy Baker, *Cognitive Appraisals and Transformations in Delay Behavior*, 31 J. PERSONALITY & SOC. PSYCHOL. 254, 259 (1975) (explaining how cognitive tasks promoting use of imagination can enhance children's performance on delay of gratification tasks).

30. *See* Laura E. Berk et al., *Make-Believe Play: Wellspring for Development of Self-Regulation*, *in* PLAY = LEARNING: HOW PLAY MOTIVATES AND ENHANCES CHILDREN'S COGNITIVE AND SOCIAL-EMOTIONAL GROWTH, *supra* note 22, at 74, 81–83 (reviewing research on make-believe play and self-regulation); SANDRA W. RUSS, AFFECT AND CREATIVITY: THE ROLE OF AFFECT AND PLAY IN THE CREATIVE PROCESS 32–34 (1993) (reviewing research on fantasy, play, and cognitive functioning).

31. *See* JAMES E. JOHNSON ET AL., PLAY DEVELOPMENT AND EARLY EDUCATION 138–42 (2005) (discussing positive effects of play on the development of language and literacy skills in children); RUSS, *supra* note 28, at 10 ("[T]he capacity for imaginative play is positively related to divergent thinking, verbal fluency, and cognitive functioning in general."); HOUSE OF MAKE-BELIEVE, *supra* note 8, at 24 ("There are indications that children who, early on, engage in

III. The School-Aged Child

Children reaching school age, and until their teens, enjoy games with rules. Games involving mental exercise—such as commercial board games, checkers, and later, perhaps chess, will take the place of pretend play.[32] In this period, children learn the rules of the games and become more competitive. On occasion young children may bend the rules as they play, but they are capable of abiding by them, insisting on fair play, and enforcing punishment if rules are broken.[33] The older children adhere to rules more faithfully. The peer group is important and helps the school-aged child learn how to socialize, how to express herself through hobbies, or to excel in academics or sports.[34]

Organized sports play a role for both boys and girls, but as they approach adolescence, these children also develop their intellectual skills. For some, sports are too threatening, and as a result many boys and girls who do not make sports teams focus on other attributes, such as science, drama, computers, writing, and other activities of an intellectual nature.[35] Word games and riddles thrive. Some children get involved in building elaborate structures using, for example, K'NEX, LEGO, or programmable bricks.

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pretend play are also likely to be more amiable, persistent, and conscientious."); James F. Christie & Kathleen A. Roskos, *Standards, Science, and the Role of Play in Early Literacy Education*, *in* PLAY = LEARNING: HOW PLAY MOTIVATES AND ENHANCES CHILDREN'S COGNITIVE AND SOCIAL-EMOTIONAL GROWTH, *supra* note 22, at 57, 62–66 (reviewing research on pretend play and its impact on child literacy); Ephraim Biblow, *Imaginative Play and the Control of Aggressive Behavior*, *in* THE CHILD'S WORLD OF MAKE-BELIEVE 104, 120–22 (Jerome L. Singer ed., 1973) (discussing the results of a study that suggest imaginative play reduces aggression); JEROME L. SINGER & DOROTHY G. SINGER, TELEVISION, IMAGINATION AND AGGRESSION: A STUDY OF PRESCHOOLERS 62–63 (1981) [hereinafter TELEVISION, IMAGINATION AND AGGRESSION] ("[C]hildren who play more imaginatively are also more inclined to use more words . . . . Imaginative children also use more complex grammatical constructions such as adverbs, adjectives, predicate nominatives and future verbs.").

32. *See* DOUGLAS DAVIES, CHILD DEVELOPMENT: A PRACTITIONER'S GUIDE 357 (2004) ("By 6 or 7, however, children can learn somewhat more complicated games, play by the rules more gracefully, take some pleasure in following the twists and turns of the game, and enjoy exercising their skills.").

33. *See id.* (describing differences in rule-following behavior according to age in games children play).

34. *See id.* ("The structure of the games of middle childhood mirrors many of the general developmental tasks of this period. Organized playground games . . . implicitly socialize children to take turns, improve their skills, focus on planning and goals . . . and follow the rules.").

35. *See* SHERRY TURKLE, LIFE ON THE SCREEN: IDENTITY IN THE AGE OF THE INTERNET 274 (1997) ("The microworlds of sports, chess, or books become places of escape and safe platforms from which to test the difficult waters of adolescence. Involvement with computers can also provide a safe place.").

Video games and computer games interest children of these ages, and they will play them with more frequency than in the preschool period.[36] Many of the educational video and computer games not only offer intellectual challenges but may also enhance imagination.[37] Video and computer games that challenge and have fantasy elements are especially appealing. To move through the complexities and different levels of a video game, a mental map is needed. Video games and electronic toys become digital playgrounds for children in these age groups.

IV. The Adolescent

The adolescent in the stage of identity versus role confusion is postponing adulthood or, as Erikson believes, declaring a moratorium on adulthood while experimenting with many different roles.[38] With genital maturation and the uncertainty about making choices about their future, they need this "moratorium for the integration of the identity elements" that has taken place in the earlier stages of development.[39]

Memories also play a role in defining self. Conway suggests that the self-defining memory combines a vivid imagistic memory with conceptual and thematic linkages to core goals or conflicts within the self.[40] These memories are the critical scenes and symbolic episodes that help individuals identify the enduring themes of identity in their lives. To the extent that individuals can access these memories and recognize the integrative or meaning-making dimensions of their narratives, Blagov and Singer believe that they will be able to strike the most adaptive balance of correspondence and coherence in their lives.[41]

Adolescents begin to question their religious, ethnic, and sexual identity.[42] They may identify with heroes, join cliques, become clannish, and lose some of

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36. IMAGINATION AND PLAY, *supra* note 28, at 40.

37. *See id.* at 131 (recognizing the potential constructive educational and social benefits of computer play).

38. *See* YOUTH AND CRISIS, *supra* note 2, at 128 (explaining the developmental challenges of adolescents as they develop a sense of identity).

39. *Id.*

40. Martin A. Conway et al., *The Self and Autobiographical Memory: Correspondence and Coherence,* 22 SOC. COGNITION 491, 505–06 (2004).

41. Pavel S. Blagov & Jefferson A. Singer, *Four Dimensions of Self-Defining Memories (Specificity, Meaning, Content, and Affect) and Their Relationships to Self-Restraint, Distress, and Repressive Defensiveness*, 72 J. PERSONALITY 481, 504–06 (2004).

42. *See* YOUTH AND CRISIS, *supra* note 2, at 131–32 (describing the estrangement and

their individuality.[43] They experiment with sex and may even be confused about their own sexuality. "Who am I to be?" they ask. In some cases, when they experience estrangement or identity confusion, they drop out of school, try different jobs, or, according to Erikson, may even join gangs and become delinquent.[44] He believes that borderline or even psychotic incidents may be attributed to extreme identity confusion and are not uncommon during the late teens.[45] Thus, there is a good deal of stress and conflict that is family- and school-related. Friendships are intense, but so are the quarrels. There is a strong desire for independence and, at the same time, the young person unconsciously seeks controls and limits set by parents and other adults—teachers, coaches, and religious leaders.[46] There are great fluctuations of mood along with a tendency to daydream and to fantasize.[47]

Play continues in all of its forms even into adulthood: sensory-motor, imitation, practice, symbolic, and games with rules. Adults use sensory-motor skills while playing with sand or water at the beach. They practice play when trying out the golf swing of an expert, or following rules in chess or bridge. They continually use symbolic play through writing poetry or fiction, acting in a community theater, and engaging in games of pageantry.

V. Play, Identity, and Electronic Games

A. Preschoolers and Children, Ages 5–7

The world of electronic games manifests itself even in the preschool years and reaches its peak among young adults, especially among males from school age long into adulthood. Key findings based on a survey in 2003 of 56,000 households in the United States led the researchers to estimate that as many as 53 million persons, 91% of children through grade twelve, use computers.[48] According to other studies, almost 25% of children ages three to five have been

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potential identity confusion that can arise as adolescents begin to question aspects of their identity).

43. *Id.* at 132.

44. *Id.* at 253.

45. *See id.* at 131–32 (stating that delinquency and borderline psychotic episodes are "not uncommon" in adolescents struggling with role confusion).

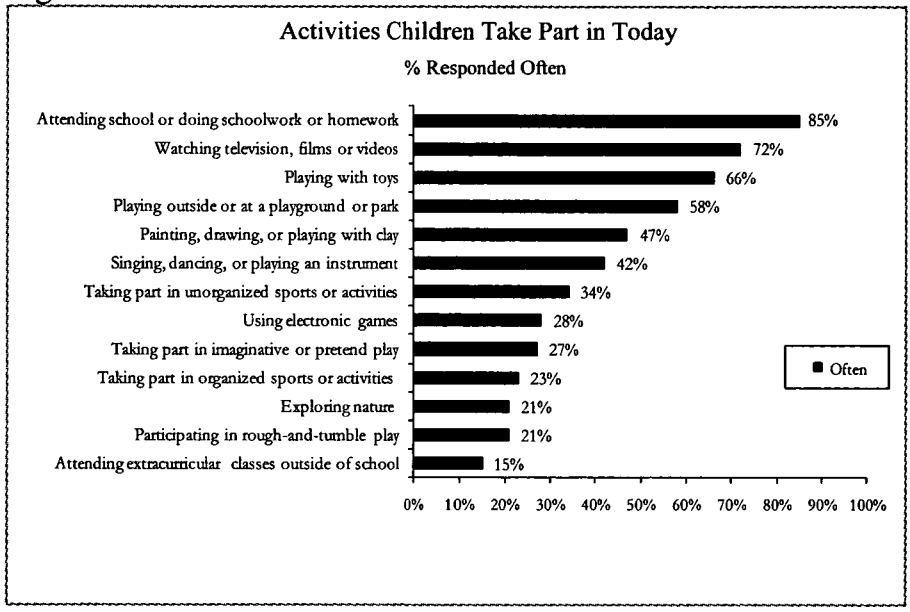
46. DOWD ET AL., *supra* note 6, at xliii.

47. *Id.*

48. MATTHEW DEBELL & CHRIS CHAPMAN, U.S. DEP'T OF EDUC. INSTITUTE FOR EDUC. SCIENCES, COMPUTER AND INTERNET USE BY STUDENTS IN 2003, at 6 (2006).

online.[49] By kindergarten this increases to one third, with the largest group of new computer users in the two- to five-year-old range and 70% of children in the four- to six-year-old range.[50] A study of pastimes and play in sixteen countries questioning 2,400 mothers of children ages two to twelve indicated that 28% of the children use video and computer games as one of their favorite activities. Television viewing, however, is the most favored pastime according to 72% of the mothers reporting.[51]

Figure 1



Are the computer games for the very young, with their emphasis on pets, taking the place of the imaginary friends of children? Early studies in the 1970s and 1980s suggested that more than one-third of children have imaginary companions.[52] Some children made up characters that no one but they could

49. Edward Donnerstein, *The Internet*, *in* CHILDREN, ADOLESCENTS, AND THE MEDIA 472, 472 (Victor C. Strasburger et al. eds., 2008).

50. VICTORIA J. RIDEOUT, ELIZABETH A. VANDEWATER & ELLEN A. WARTELLA, THE HENRY J. KAISER FAMILY FOUNDATION, ZERO TO SIX: ELECTRONIC MEDIA IN THE LIVES OF INFANTS, TODDLERS AND PRESCHOOLERS 5 (2003); Donnerstein, *supra* note 49, at 472.

51. Dorothy G. Singer et al., *Children's Pastimes and Play in Sixteen Nations: Is Free-Play Declining?*, 1 AM. J. PLAY 283, 297 (2009); *see also* Figure 1 (presenting statistics on activities engaged in by children).

52. *See* HOUSE OF MAKE-BELIEVE, *supra* note 8, at 97–98 (reviewing the research on imaginary friends as it developed in the 1970s and 1980s).

see, or used their stuffed animals to be their "friends."[53] Indeed, Jean Piaget suggested that young children believe in animism, the attribution of life to inanimate objects.[54] Previously, the belief was that these companions were the creations of disturbed children. More recent research has emphasized their adaptive value for those children who created these imaginary companions. The children who developed these "friends" were generally more verbal, linked with intellectual and creative growth, happier in play, more likely to be girls than boys, and either first born or children with a huge gap between the next closest sibling.[55]

Friends in the form of pets now predominate the computer games for young children, who care for these virtual pets, display empathy for them, identify with them and are distraught if they "die." Some of the virtual pets are found on *Webkinz*, with 3.71 million unique visitors in May 2007, up from 334,000 in May 2006, according to comScore, a Web-tracking company.[56] Tamagotchi are the virtual pets sold by Bandai America. In *Pony Friends*, a videogame, children raise virtual ponies. If these ponies are not cared for, their mood and physical appearance change—but they do not die. Club Penguin offers virtual pets called "puffles." Like a Tamagotchi or *Webkinz* pet, puffles must be played with and fed. There is no advertising on Club Penguin, which charges $5.95 a month for access, or Webkinz.com, which is free for one year with the purchase of a stuffed pet that costs about $13.[57] After a year, the account expires—unless another pet is purchased. Walt Disney Co. paid $350

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53. *See id.* at 100 (noting children's use of stuffed animals as imaginary friends).

54. PIAGET, *supra* note 4, at 160.

55. *See* Martin Manosevitz, et al., *Individual and Family Correlates of Imaginary Companions in Preschool Children*, 8 DEVELOPMENTAL PSYCHOL. 72, 78 (1973) (stating that highly creative adolescents reported a significantly higher incidence of imaginary companions in childhood); Jana U. Somers & Thomas D. Yawkey, *Imaginary Play Companions: Contributions of Creative and Intellectual Abilities of Young Children*, 18 J. CREATIVE BEHAV. 77, 78–79 (1984) (describing a variety of factors related to the appearance of imaginary play companions and the positive effect they have on the verbal and creative skills of children); TELEVISION, IMAGINATION AND AGGRESSION, *supra* note 31, at 89 (reviewing studies suggesting that imaginary playmates are an adaptive or creative phenomenon in normal growth); HOUSE OF MAKE-BELIEVE, *supra* note 8, at 103 ("[A]ccording to parental reports, children who had imaginary companions seemed to be happier and showed more positive attitudes."); MARJORIE TAYLOR, IMAGINARY COMPANIONS AND THE CHILDREN WHO CREATE THEM 42 (2001) ("Although children from families of every size create imaginary companions, first born and only children are somewhat more likely to do so."); *id.* at 48 ("In many studies, girls are reported to be more likely to create imaginary companions than boys.").

56. Dana Mattioli, *Stuck Holding the Electronic Leash*, WALL ST. J. ONLINE, Aug. 7, 2007, http://online.wsj.com/article/SB118608426576986418.html# (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

57. *Id.*

million for *Club Penguin* and, if the site's performance meets targets through 2009, Disney will pay an additional $350 million.[58] Disney also offers *Pixie Hollow*, which features fairies, and *Toon Town* for preschoolers.

In addition to *Webkinz*, there are *Shining Stars*, *Kookeys*, and *My E-Pets*. Virtual pet games are a lucrative business, just as video games are. Various stuffed animals come with the online playgrounds. Many toy companies sell the pets and find this link to the Internet a profitable way of increasing toy sales because young children love to collect these toy animals.[59]

U.B. Funkeys is a set of collectable vinyl figures that connect to a computer via a base with a USB port.[60] The starter kit has a hub that can accommodate several little figures, each of which resembles a space alien or animal.[61] Once all of this is set up, the child can go to the website and enter "Funkeys Town." Each "funkey" figure has its avatar on the screen and games are ready to be played.[62] Numerous adventures take place with a struggle between good and evil as the child player identifies with a particular figure.

Besides these entertainment games, there are numerous educational products—such as the *JumpStart* software series—that are grade specific with the goal of teaching children reading, math, social skills, and science.[63] A discussion of this, however, would divert us from the play and identification theme of this Article.

B. School-Aged Children and Beyond

The typical home of an eight- to eighteen-year-old in the United States is equipped with three TV sets, three CD/tape recorders, three radios, three

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58. *Id.*

59. *See* Brooks Barnes, *Web Playgrounds of the Very Young*, N.Y. TIMES, Dec. 31, 2007, at C1 ("As growth engines like television syndication and movie DVD sales sputter or plateau—and the Internet disrupts entertainment distribution in general—Disney, Warner Brothers and Viacom see online games and social networking as a way to keep profits growing."); Lisa Davis, *The Virtual Playground*, http://www.commercialfree childhood.org/news/virtualplayground.htm (last visited Sept. 29, 2009) (describing various children's toys with related interactive websites) (on file with the Washington and Lee Law Review).

60. Daniel E. Slotnik, *Cute Friends to Collect, and Plug in to the Internet*, N.Y. TIMES, July 23, 2007, at C7.

61. *Id.*

62. *Id.*

63. *See* Jinny Gudmundsen, *Play and Learn: Virtual Worlds for Kids*, ABC News, June 20, 2007, http://abcnews.go.com/Technology/story?id=3295278&page=1 (last visited Sept. 29, 2009) (reviewing the *JumpStart* series of educational software) (on file with the Washington and Lee Law Review).

VCR/DVD players, two video game consoles, and a computer.[64] Many children have access to these media in their own bedrooms. About 68% have their own TV set and more than half have a VCR/DVD of their own.[65] About 97% of students in grades nine through twelve use computers.[66] Young people between the ages of eight and eighteen spend more than forty hours per week using some form of electronic media. Among boys ages eight to thirteen, the average amount of time spent with console and computer video games is 7.5 hours per week.[67] In 2008, 12 million children visited web sites to play in hundreds of virtual worlds.[68] Sites such as Planet Cazmo, Xivio, Funkitron, and Empire of Sports are aimed at children between the ages of eight and twelve. *Dizzywood* is such a virtual world for children who identify with various avatars (alter-egos) that they create.[69]

College students play at least six hours per week.[70] The technology for online users includes email, chat groups, bulletin boards, blogs, Twitter, and podcasting. The World Wide Web allows the combination of visuals, sound, and text. Chat groups such as MySpace.com can be used for real-time conversations.[71] Because there is so much access to the Internet by youths, concerns have been raised about alcohol, tobacco, unhealthy food products, advertising, sexual materials, and violence. In addition, there are questions about computer games and their effects on attention, spatial representational skills, and iconic representational skills as discussed by Subrahmanyam and Greenfield.[72]

Along with other new opportunities for connecting to the virtual reality world, there is *The Sims*, a popular game among players on the World Wide

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64. Donald F. Roberts & Ulla G. Foehr, *Trends in Media Use*, 18 FUTURE CHILD. 11, 15 (2008).

65. *See id.* at 14 (relating data on share of children of various ages whose bedrooms contain media).

66. DEBELL & CHAPMAN, *supra* note 48, at 5.

67. Craig A. Anderson & Brad J. Bushman, *Effects of Violent Video Games on Aggressive Behavior, Aggressive Cognition, Aggressive Affect, Physiological Arousal, and Prosocial Behavior: A Meta-Analytic Review of the Scientific Literature*, 12 PSYCHOL. SCI. 353, 354 (2001).

68. Michelle Slatalla, *Today, I Think I'll Be Hippohead*, N.Y. TIMES, May 8, 2008, at G3.

69. *See id.* (describing the *Dizzywood* online game).

70. Anderson & Bushman, *supra* note 67, at 354.

71. Donnerstein, *supra* note 49, at 475.

72. Kaveri Subrahmanyam & Patricia Greenfield, *Media Symbol Systems & Cognitive Processes*, *in* THE HANDBOOK OF CHILDREN, MEDIA AND DEVELOPMENT 166, 174–78 (Sandra L. Calvert & Barbara J. Wilson eds., 2008) (discussing the effects of video games on attention and spatial representational skills).

Web. *The Sims* allows players to create an identity upon "entering" a hotel lobby on the computer screen, notice who is around, and engage in conversation with interesting-looking strangers, some of whom are actually English-language "speakers" from Thailand, Denmark, or Chile.[73] Games like *The Sims* have created windows or domains for identity variations that are more pictorial and, therefore, penetrate younger and younger markets. A new form of chat room has emerged for young players, a setting in which one's companions are all attired in wish-fulfillment clothing and bodies who may be other children from far-flung lands or lonely adults, occasionally even sexual predators.[74] The social network Facebook has reached an agreement with forty state attorneys general to institute a broad set of principles intended to protect young users from online predators and inappropriate material.[75] Users under the age of eighteen are required to confirm that they have read Facebook's safety tips when they sign up.[76] Their ages will be checked by a new behavioral technology that will weed out users who lie about their age.[77] MySpace has announced a similar settlement with state officials.[78]

On the positive side, computer based game-playing may contribute considerably to children's imaginative ability in the object-manipulation manner in games like *Tetris*.[79] When eight-year-olds approached a narratively-organized science simulation game both as a learning and as an entertainment opportunity, they made strong gains in thinking skills and science language usage.[80] Transfer of such gains to a broader variety of technical or social problems have yet to be shown.

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73. IMAGINATION AND PLAY, *supra* note 28, at 110.

74. *Id.*

75. Brad Stone, *Facebook Agrees to Devise Tools to Protect Young Users*, N.Y. TIMES, May 9, 2008, at C4.

76. *Id.*

77. *Id.*

78. *Id.*

79. *See* Subrahmanyam & Greenfield, *supra* note 72, at 176 ("Research demonstrates that repeated practice with games enhances selected spatial skills."); Richard DeLisi & Jennifer L. Wolford, *Improving Children's Mental Rotation Accuracy with Computer Game Playing*, 163 J. GENETIC PSYCHOL. 272, 280 (2002) (discussing research results indicating that playing *Tetris* improved performance on a spatial rotation task); Seonju Ko, *An Empirical Analysis of Children's Thinking and Learning in a Computer Game Context*, 22 EDUC. PSYCHOL. 219, 230 (2002) (observing gains in performance in problem-solving task by children who play games); Subrahmanyam et al., *New Forms of Electronic Media: The Impact of Interactive Games and the Internet on Cognition, Socialization, and Behavior*, *in* HANDBOOK OF CHILDREN AND THE MEDIA 73, 83–85 (Dorothy G. Singer & Jerome L. Singer eds., 2002) [hereinafter *New Forms of Electronic Media*] (discussing interactive games and the development of cognitive skills).

80. *See* Lyn Henderson et al., *Just Playing a Game? Educational Simulation Software*

Individual case studies as well as larger scale research demonstrate that traditional sex role differences continue to be evident in the forms of computer game play of young children. Boys still favor adventure and sports games and, of course, predominate in their usage of the violent theme computer games as well as arcade or console video games.[81] The sex differences we observed in spontaneous pretend play as well as in TV program viewing thirty years ago[82] still persist in television[83] and in computer game content preferences.[84] Among internet users, girls ages twelve to seventeen appear to be the primary creators of web content such as blogs, graphics, photographs, and web sites.[85] Girls are inclined to express themselves socially and emotionally and are patient in creating their web materials as they strive for originality. Boys, however, surpass girls in creating web content in the posting of videos that especially highlight their interest in sports.[86]

The attraction of simulation computer games lies in their seemingly harmless interactive opportunities. We know from research that some simulations, like the heroic "killer" roles of violent theme video and computer games such as *Mortal Kombat*, *Kaboom*, and *Grand Theft Auto*, do influence the overt behavior of a statistically significant number of game players to be

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and Cognitive Outcomes, 22 J. EDUC. COMPUTING RES. 105, 109–11 (2000) (finding substantial improvement in performance in scientific reasoning tasks in children who used an educational computer game).

81. IMAGINATION AND PLAY, *supra* note 28, at 116.

82. *See* TELEVISION, IMAGINATION AND AGGRESSION, *supra* note 31, at 78 (presenting data on differences in play themes by gender); *New Forms of Electronic Media*, *supra* note 79, at 87–88 (noting gender differences in the use of interactive games); IMAGINATION AND PLAY, *supra* note 28, at 116–17 (reviewing scientific literature on sex differences in pretend play and TV program viewing).

83. *See* Maya Götz et al., *Gender in Children's Television Worldwide*, 21 TELEVIZION 4, 4 (2008) ("While women may no longer be presented solely as helpless victims, however, regardless of the role they take on, they are almost always impeccably beautiful and longing for the love of their life.").

84. *See* Stacey J.T. Hust & Jane D. Brown, *Gender, Media Use, and Effects*, *in* THE HANDBOOK OF CHILDREN, MEDIA, AND DEVELOPMENT 98, 103 (Sandra L. Calvert & Barbra J. Wilson eds., 2008) (stating that young males are more likely to play games with more realistic human violence while girls are more likely to play puzzles, electronic board games, or games with animated fantasy violence); DONALD F. ROBERTS ET AL., KIDS AND THE MEDIA IN AMERICA 131 (2004) ("In general, then, patterns of both computer game and video-game choice fit both age and gender expectations.").

85. *See* AMANDA LENHART & MARY MADDEN, PEW INTERNET & AMERICAN LIFE PROJECT, TEEN CONTENT CREATORS AND CONSUMERS 3 (2005) ("When it comes to sharing self-authored creative content, older girls stand out.").

86. *See* Stephanie Rosenbloom, *Sorry Boys, This is Our Domain*, N.Y. TIMES, Feb. 21, 2008, at G1 ("Video posting was the sole area in which boys outdid girls: boys are twice as likely as girls to post video files.").

more aggressive or uncooperative in their behavior.[87] There is no clear evidence of so specific an influence of the simulations from more complex games such as *Sim City*, *Myst*, or other adventure or old-time sword and sorcery games (the genre of popular series like the *Lord of the Rings*, *Narnia*, or the *Harry Potter* books). Some large-scale correlational studies with teenagers do indicate, on the whole, that game-playing is generally not associated with high levels of general emotional disturbance, social isolation, or problems of self-esteem.[88] The personal and socially malignant potential of interactive *violent* computer games as forms of interactive practice with potential generalization to real life, however, has been well outlined by Subrahmanyam and others.[89]

Based on direct observations of adolescent and adult computer game play and interviews with committed players, Turkle proposed that one's view of nature and society and one's sense of personal identity might well be changed by the complex and ultimately random nature of internet interactions.[90] She especially emphasized what she calls Multi-User Domains (MUDs).[91] In computerized forms, these games allow for assuming various adventure or romantic identities. A study by Park and Henley found that individual differences, such as age, sex, race, and personality, relate to character preferences in fantasy computer role-playing games.[92] Testing 233 college students, they reported that individuals who scored high on extraversion test items preferred characters that were described as charismatic.[93] Agreeableness was correlated with preferences for characters with helping occupations and

87. *See* Jeanne B. Funk, *Video Games*, *in* CHILDREN, ADOLESCENTS, AND THE MEDIA, *supra* note 49, at 435, 449 ("The research . . . suggests that playing violent video games increases aggressive behavior, aggressive thoughts, and aggressive feelings.").

88. *See* Kevin Durkin & Bonnie Barber, *Not So Doomed: Computer Game Play and Positive Adolescent Development*, 23 APPLIED DEVELOPMENTAL PSYCHOL. 373, 386–87 (2002) ("In general, and contrary to common speculation, there was little evidence that computer game play is associated with negative outcomes—indeed, most of the findings suggest advantages to adolescents in the low- or high-play groups compared to young people who report they never play games.").

89. *See New Forms of Electronic Media*, *supra* note 79, at 96 ("The limited research on this topic has measured short-term effects and, in general, suggests that playing aggressive games increases and even provides dangerous tools for aggressive behavior in children.").

90. *See* TURKLE, *supra* note 35, at 9–11 (exploring how computers and the Internet shape personalities and culture).

91. *See id.* at 11–12 (describing and analyzing Multi-User Domains).

92. *See* Anna E. Park & Tracy B. Henley, *Personality and Fantasy Game Character Preferences*, 27 IMAGINATION, COGNITION & PERSONALITY 37, 42–43 (2008) (reporting statistically significant relationships between gender, personality attributes, and character selection in video games).

93. *Id.* at 43.

correlated negatively with more deviant occupations.[94] Although some women preferred a male character (28.6%), 100% of males preferred a male character.[95] Men were more likely to prefer characters with deviant occupations, while women tended to identify with more social and helping characters.[96]

Through the potential for worldwide internet communication, unknown others and their simulations can join in one's own home computer play. In the late 1980s, the word "troll" was adopted by internet users to denote those people who deliberately disrupt online communications. Although trolling was fairly innocuous when it began, now those who troll may post "violent fantasies" about users or even cruel remarks.[97] Linda Sanchez, a congresswoman from California, recently introduced the Megan Meier Cyberbullying Prevention Act[98] that would make it a federal crime to cause emotional distress to users.[99] This was in response to an incident when a woman was charged for posting humiliating and embarrassing remarks on MySpace that led the young girl who was the target of these comments to commit suicide.[100]

Many adults enjoy computer games and play *Second Life*, a three-dimensional world where they can take on a new persona and create a fantasy life where one purchases "stuff" or where, in addition to game-playing, it can be used for education, meetings, and marketing.[101] *Eve Online*, a science fiction game, has more than 200,000 players representing many nations.[102] Players have game identities, alter egos, and vote for council members to meet occasionally with CCP, the company that created the game, in order to make suggestions for improvements.[103] In *Eve Online*, players in futuristic settings

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94. *Id.*

95. *Id.* at 42.

96. *Id.* at 44.

97. *See* Matthias Schwartz, *Inside the World of Online Trolls, Who Use the Internet to Harass, Humiliate and Torment Strangers*, N.Y. TIMES MAG., Aug. 3, 2008, at 26 (recounting the development of the word "troll" and describing how internet trolls have changed since their emergence in the 1980s).

98. Megan Meier Cyberbullying Prevention Act, H.R. 1966, 111th Cong. (2009).

99. *Id.* at 29.

100. *See id.* at 26 (recounting the story of Megan Meier who committed suicide after a cyberbullying incident on MySpace).

101. *See* Shira Boss, *Even in a Virtual World, 'Stuff' Matters*, N.Y. TIMES, Sept. 9, 2007, at BU9 (explaining the *Second Life* computer game).

102. Seth Schiesel, *Face to Face: A Council of Online Gamers*, N.Y. TIMES, June 28, 2008, at B7.

103. *See id.* (explaining how CCP involves gamers in running its *Eve Online* game

can be miners who extract ore from asteroids, financiers, traders, or pilots, or they can participate in epic wars fighting for territories.

VI. Areas for Further Research Concerning Computers

A. Fantasy/Realty and Imagination

Are heavy computer game players able to make distinctions between fantasy and reality? Do they understand that the games they play are exaggerated in content, and that aggression in society is complicated and dependent on many contingent circumstances? We have evidence from television research that children who are heavily involved in viewing TV programs are less imaginative than children who are light TV viewers.[104] Would heavy computer game players be prone to think of plots in terms of simple stories without any complexity or embellishment? Would they tell stories that merely replicate the games they have played or could they go beyond these?

B. Identification and Stereotypes

With whom do children identify as they play computer games? A study conducted by a team led by Sandra Calvert demonstrates that systematic research on how preadolescent children engage in multi-user domain play is possible.[105] Calvert's investigation involved eighty-four children between ages ten and thirteen who were fifth and sixth graders.[106] The findings are particularly striking in demonstrating gender differences. Boys showed more mythological or pure fantasy tendencies, choosing names from *Lord of the Rings*.[107] Girls made up names such as "Brittany" or "Shania," which reflected their interest in pop music stars.[108] Boys largely chose to represent themselves

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community).

104. *See* IMAGINATION AND PLAY, *supra* note 28, at 67–70 (discussing experiments that probed the connection between television viewing and imagination).

105. Sandra L. Calvert et al., *Gender Differences in Preadolescent Children's Online Interactions: Symbolic Modes of Self-Presentation and Self-Expression*, 24 J. APPLIED DEVELOPMENTAL PSYCHOL. 627 (2004).

106. *Id.* at 630.

107. *Id.* at 640.

108. *Id.*

in mildly rebellious stances wearing "leather jackets" or with punk identities.[109] Girls seemed more likely to choose soccer costumes as a model of assertiveness.[110] In keeping with findings from studies of sex differences in play, girls used more verbal expression and boys were more playful and engaged in more action.[111] McDonald and Kim found that there is a relationship between how strongly children identify with characters in electronic games and their social selves leading to emotional and personality development.[112] As cited above, the Park and Henley study supports both gender and personality differences concerning identification with fantasy characters in playing computer games.[113]

C. Values and Morality

Nearly 90% of parents surveyed believe that popular media, especially television, video games, and popular music, encourage materialism, coarse language, early sexual encounters, and aggressive behavior in children.[114] How do youth process the stories presented in violent games concerning morality and decency? Given the fact that computer games are played frequently by children and adolescents, one may be concerned about how very frequent game players develop an internal code of morality. Can a young child understand that what he or she sees is merely a game and that in the real world there are serious consequences for antisocial behaviors?

D. Cognition

Events take place rapidly in computer games. How does this carry over in terms of schoolwork and attention in general? Does the pacing of games

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109. *Id.*

110. *Id.*

111. *Id.* at 641.

112. *See* Daniel G. McDonald & Hyeok Kim, *When I Die, I Feel Small: Electronic Characters and the Social Self*, 45 J. BROAD. & ELEC. ARTS 241, 254 (2001) ("Although results are somewhat tentative, there is considerable evidence here that children identify quite closely with electronic characters of all sorts, and that these identifications may have important implications for their emotional well being as well as for the development of their personality.").

113. Park & Henley, *supra* note 92, at 44 (discussing how individual differences in age, sex, race, and personality affect character identification).

114. HENRY J. KAISER FAMILY FOUNDATION, PARENTS AND MEDIA: KEY FACTS 1 (2003), http://www.kff.org/entmedia/3353-index.cfm (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

enhance a child's attention and concentration or will the rapid cuts with changes of scene affect a child's ability for prolonged immersion in reading or in comprehension of a text? As for the educational computer games, are the children learning the vocabulary or math concepts presented? We have data that demonstrate that heavy television viewers have difficulty in attention and score significantly lower on standardized reading tests than do light TV viewers.[115] Will this apply to heavy computer players?

E. Abstract Thinking and Reflective Thought

In the typical computer game there is very little opportunity for critical thinking and reflection on the acts as they are presented. Does this affect one's ability for reflection in general given that the games are more concrete in presentation, and yet the demand for performance in many tasks in school requires the ability to think abstractly?

F. Social and Emotional

Are we producing a generation of heavy computer game players who are self-indulgent young people and less empathic than the non-players of these games? One wonders if social behaviors such as cooperation, sharing, and turn-taking are affected negatively.

VII. Identity and Video Games

The United States video game industry is an $18 billion business, and sales of violent games play a substantial role in the profits.[116] *Grand Theft Auto IV*, a leader in the video game field, sold 3.6 million copies in just one day after its release.[117] About 70 million copies of other *Grand Theft Auto* editions have

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115. *See* TELEVISION, IMAGINATION AND AGGRESSION, *supra* note 31, at 152–53 (describing the effects of heavy television viewing).

116. Press Release, The NPC Group, 2007 U.S. Video Game and PC Game Sales Exceed $18.8 Billion Marking Third Consecutive Year of Record-Breaking Sales (Jan. 31, 2008), http://www.npd.com/press/releases/press_080131b.html (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

117. *See* Bill Marsh, *Niko Bellic vs. Britney Spears and Indiana Jones*, N.Y. TIMES, May 11, 2008, at WK2 ("Wall Street analysts expected [*Grand Theft Auto IV*] to sell about five million copies in its first two weeks. Instead, it sold 3.6 million copies in just one day, April 29.").

sold worldwide since its debut in 1997.[118] Global video game revenues are predicted to top $55 billion by the end of 2008, and video games are predicted to enjoy the most growth of any entertainment industry in the next half decade.[119] Video games have now joined the film, television, and music industries at the top of the entertainment economy. Premiere events are held when new games are marketed, and gaming now has its own annual awards show, replete with celebrities.[120] When new consoles are introduced, such as the PlayStation 3 or Xbox 360, fans around the world wait hours at stores to be the first to pick up the units.[121]

After starting slowly in the early 1980s, advances in computer technology have allowed multitudes of complex and addictive video game worlds to spring up and be eagerly devoured by legions of gamers. Video games are consuming a larger amount of time every year. According to the Cooperative Institutional Research Program (CIRP) 13.3% of men entering college were playing video games at least six hours per week in their senior year of high school in 1998.[122] In surveys of freshmen in 2005, there was an increase to 21.4%.[123] Among American children, eleven- to fourteen-year-old boys play video games most often.[124] On average, elementary school children play video games seven hours per week (roughly thirteen and one half hours for boys and five hours for girls) and watch twenty-one hours per week of television.[125]

In 1999, 4% of men entering public universities in the United States reported playing video games more than fifteen hours per week in their senior

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118. *Id.*

119. Jose Antonio Vargas, *Shadow Player: The Face of the Video Game Industry Steps into the Spotlight at the Electronic Entertainment Expo*, WASH. POST, May 11, 2006, at C01.

120. *See* Press Release, Spike TV, Spike TV Blows the Doors Open at E3 2009 with Hour-Long VGA First-Look Special (May 21, 2009), http://www.spike.com/blog/spike-tv-blows-doors/79954 (last visited Sept. 29, 2009) (announcing 2009 video game awards) (on file with the Washington and Lee Law Review).

121. *See* Matt Richtel, *Release of PlayStation 3 Becomes a Waiting Game*, N.Y. TIMES, Nov. 17, 2006, at C4 ("Angel Paredes, who otherwise lives in a Manhattan apartment, spent three nights this week on a sidewalk at 56th Street and Madison Avenue. That is the price he paid to be first in line at Sony Plaza to buy a new PlayStation 3 . . . .").

122. LINDA J. SAX, COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM, AMERICAN FRESHMAN: NATIONAL NORMS FOR FALL 1998, at 39 (1998).

123. JOHN H. PRYOR, COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM, AMERICAN FRESHMAN: NATIONAL NORMS FOR FALL 2005, at 175 (2005).

124. *See* ROBERTS ET AL., *supra* note 84, at 127 ("Among boys, video-game playing begins early, rises substantially within each successive age group until surpassing 60 percent for 11- to 14-year-olds, then declines to 50 percent for the oldest adolescents.").

125. CRAIG A. ANDERSON ET AL., VIOLENT VIDEO GAMES EFFECTS ON CHILDREN AND ADOLESCENTS 7 (2007).

year in high school.[126] Over half of all Americans now play them, including 76% of the children in the U.S., 69% of heads of households, and 25% of those over fifty.[127] Data on the exact number of hours people play games is still hard to gather. But even those who play "occasionally" average nearly twenty hours a week, which for them would put gaming in third place behind sleep and work when it comes to essential activities. Online role-playing games, such as *EverQuest*, are famously even more addictive, with average use around twenty-five hours a week, and some as high as seventy hours.[128] In Europe, 81% of parents of children younger than sixteen are gamers and play along with their children.[129] According to Schiesel, many adults in the United States are even playing the vintage games of the early 1980s, such as *Pac-Man* and *Donkey Kong*, despite the fact that more sophisticated fare is available.[130]

Over forty years of research on media violence reveals several key findings. Exposure to violent media leads to short-term and long-term increases in aggression and violence. The short-term effect is that aggression increases immediately after exposure.[131] The long-term effect is that repeated exposure makes the person more aggressive over time.[132] In essence, children exposed to high levels of media violence become more violent adults than they would have become had they not been exposed to so much media violence.[133] Both the long-term and the short-term effects occur for both boys and girls. Indeed, the media violence effect on aggression is larger than the effect of exposure to lead on IQ scores in children, the effect of calcium intake on bone mass, the effect of homework on academic achievement, the effect of asbestos

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126. LINDA J. SAX, COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM, AMERICAN FRESHMAN: NATIONAL NORMS FOR FALL 1999, at 42 (1999).

127. Michael Jindra, *Video Game Worlds*, 44 SOCIETY 67, 67 (2007).

128. *See* EDWARD CASTRANOVA, SYNTHETIC WORLDS 61 (2006) (recounting statistics of the time *EverQuest* players spend in the game).

129. INTERACTIVE SOFTWARE FEDERATION OF EUROPE, VIDEO GAMERS IN EUROPE - 2008, at 9 (2008).

130. *See* Seth Schiesel, *Masters of the Arcade Caught in Replay*, N.Y. TIMES, Aug. 12, 2007, at ST8 ("Many grown-up gamers have since moved on to more sophisticated fare, but a small subset of nostalgists has gravitated toward the simple, repetitive but addictive games from the genre's Paleolithic era.").

131. *See* L. Rowell Huesmann & Laramie D. Taylor, *The Case Against the Case Against Media Violence*, *in* MEDIA VIOLENCE AND CHILDREN: A COMPLETE GUIDE FOR PARENTS AND PROFESSIONALS 107, 108 (Douglas A. Gentile ed., 2003) (discussing short-term effects of exposure to violent media).

132. *See id.* at 109–10 (discussing long-term effects of exposure to violent media).

133. *See* Brad J. Bushman & L. Rowell Huesmann, *Effects of Televised Violence on Aggression*, *in* HANDBOOK OF CHILDREN AND THE MEDIA, *supra* note 79, at 223, 233–34 (summarizing data on studies of exposure to TV violence and aggression).

exposure on cancer, and the effect of secondhand smoke on lung cancer.[134] Exposure to violent video games increases aggressive behavior, increases aggressive thoughts, increases angry feelings, decreases helpful behavior, and increases physiological arousal (for example, heart rate).[135] Experimental studies have established that these effects are causal. Even when physiological arousal and emotional reactions to the games are controlled, the other effects remain.[136]

In a later study by Carnagey, Anderson, and Bushman, students either played a violent video game or a nonviolent video game.[137] Then they watched videos of real-life violence including a news scene featuring a stabbing between actual prisoners.[138] Results showed that those who had played the violent video game were physically less responsive to real-life violence. Specifically, their heart rate and their galvanic skin response (a measure of physiological desensitization) were lower than those of participants not exposed to the violent video game.[139] Furthermore, new brain research shows that those who play violent video games show physical desensitization in the form of brain responses to violent imagery.[140] These brain differences in violent video game players lead to a breakdown in the motivational system which normally inhibits aggression.[141] In the laboratory, violent video game players who showed these brain responses also behaved more aggressively when provoked.

Sonya S. Brady and Karen A. Matthews found that young men were more likely to see others' attitudes toward them as hostile if they had just played a violent game.[142] A group of 100 male undergraduates aged eighteen to twenty-

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134. ANDERSON ET AL., *supra* note 125, at 144.

135. *See id.* at 37–38 (summarizing data indicating exposure to violent video games increases aggressive behavior, thoughts, and physiological arousal).

136. *See* Brad J. Bushman & Craig A. Anderson, *Media Violence and the American Public: Scientific Fact Versus Media Misinformation*, 56 AM. PSYCHOLOGIST 477, 480 (2001) (stating that the evidence on the hazards of exposing children to media violence points overwhelmingly to a causal connection between aggressive behavior and exposure to violent media).

137. Nicholas L. Carnagey et al., *The Effect of Video Game Violence on Physiological Desensitization to Real-Life Violence*, 43 J. EXPERIMENTAL SOC. PSYCHOL. 489, 492 (2007).

138. *Id.*

139. *Id.* at 493–94.

140. Bruce D. Bartholow et al., *Chronic Violent Video Game Exposure and Desensitization to Violence: Behavioral and Event-Related Brain Potential Data*, 42 J. EXPERIMENTAL SOC. PSYCHOL. 532, 536–37 (2006).

141. *Id.* at 538.

142. Sonya S. Brady & Karen A. Matthews, *Effects of Media Violence on Health-Related Outcomes Among Young Men*, 160 ARCHIVES PEDIATRICS & ADOLESCENT MED. 341, 346 (2006).

one played either *Grand Theft Auto III* or *The Simpsons: Hit and Run*.[143] In the Simpsons game, players took the role of Homer Simpson and their task was to deliver daughter Lisa's science project to school before it could be marked late.[144] In *Grand Theft Auto III*, players took the role of a criminal, and were instructed by the Mafia to beat up a drug dealer with a baseball bat.[145] Playing the violent game boosted young men's blood pressure, and appeared to have more of an effect on those who came from more violent homes or communities.[146] In this game, the depiction of the violent task is quite realistic. When they strike the person with the bat, the person crumples to the ground and a pool of blood starts to expand slowly underneath the body. The more blows the player gives, the wider the pool of blood. For youth who have been previously exposed to real violence, the game may have seemed more real. Regardless of whether they grew up in a violent environment, the researchers found that young men who had played the violent game were less cooperative and more competitive in completing an assigned task with another person compared to those who played the *Simpsons* game.[147] They were also more likely to have permissive attitudes toward alcohol and marijuana use.[148]

Media violence in general, as well as video game violence, has significant effects on males and females, young children, adolescents, young adults, and nonviolent and violent individuals.[149] Preliminary evidence and well-developed theory suggest that the violent video game effects may be substantially larger than TV and movie violence effects.[150] In TV shows and movies there may be several characters with whom an observer can identify, some of whom may not behave in a violent fashion. In most violent video games, however, the player must identify with one violent character. Identification with the aggressor increases imitation of the aggressor. The violent video game player is a much more active participant than is the watcher of violent TV shows.[151] Active participation increases learning. The aggression sequence being rehearsed is

143. *Id.* at 342.

144. *Id.* at 343.

145. *Id.*

146. *Id.* at 346.

147. *Id.*

148. *Id.*

149. Douglas A. Gentile & Craig A. Anderson, *Violent Video Games: The Newest Media Violence Hazard*, *in* MEDIA VIOLENCE AND CHILDREN: A COMPLETE GUIDE FOR PARENTS AND PROFESSIONALS, *supra* note 131, at 131, 141.

150. *See* Karen E. Dill & Jody C. Dill, *Video Game Violence: A Review of the Empirical Literature*, 3 AGGRESSION & VIOLENT BEHAV. 407, 411–13 (1998) (discussing factors that may cause video game violence effects to be stronger than movie and television violence effects).

151. *Id.* at 412.

more complete in a video game than in a TV show or movie. For example, the video game player must choose to aggress and, in essence, rehearses this choice process, whereas the TV viewer does not have to make any such choices. Thus, rehearsing an entire behavioral sequence is a more effective learning tool than rehearsing only a part of it. The frequency of violence in many video games is much higher than the frequency in even the most violent TV shows and movies.[152] Violent video game players, therefore, rehearse violent sequences more times and see blood and gore at a higher rate than do viewers of TV or movie violence.[153]

Sexualized violence in the media has been linked to increases in violence towards women, rape myth acceptance, and anti-women attitudes. Research on video games indicates that most popular video games are violent and depict women and minorities in stereotypical ways.[154] Though most often female characters are simply absent from video games, when they are present they tend to be marginalized, sexualized, or portrayed as needing rescue by male characters.[155] True heroic roles for females and minorities are almost nonexistent.[156] Teenage males, who are in the process of developing attitudes towards women, are the most common players of video games. The harmful characterization of women in video games is increasing as the video game industry increases its sexual and aggressive content.

Studies consistently show that most of the top-selling video games are violent.[157] The Consumer Electronics Association (CEA) reports that 35% of parents are gamers themselves, and that two-thirds of these parents say it is not the government's role to protect children from violent video games.[158] The *Grand Theft Auto* series is known for consistently breaking sales records and topping the charts of the games most highly rated by gamers. In *Grand Theft Auto: Vice City*, female characters include a porn star, prostitutes, and a bevy of female characters clad in bikinis and roller skates. In *Grand Theft Auto*,

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152. *Id.* at 413.

153. *See* ANDERSON ET AL., *supra* note 125, at 136 (explaining why video games can have greater negative effects on aggression than violent television shows or films).

154. See Karen E. Dill et al., *Violence, Sex, Race, and Age in Popular Video Games*, *in* FEATURING FEMALES: FEMINIST ANALYSES OF MEDIA 115, 116 (Ellen Cole & Jessica H. Daniel eds., 2005) (reviewing research examining portrayal of women in video games).

155. *Id.* at 116–17.

156. *Id.* at 116.

157. *Id.* at 117.

158. *See* Press Release, Consumer Electronics Association, CEA Study Finds Adults Spend More Time Gaming than Teens (Mar. 21, 2006), http://www.ce.org/Press/CurrentNews/press_release_detail.asp?id=10972 (last visited Sept. 29, 2009) (summarizing study findings) (on file with the Washington and Lee Law Review).

after the male hero has sex with a prostitute in the back seat of a car, he can kill her in a number of ways, including beating her to death with a golf club, kicking her in the crotch until she bleeds to death, or shooting her. If he does any of these things, he gets back the money he gave to the prostitute, thus earning a reward for his violence. In *Grand Theft Auto: Vice City*, when a female character dressed like a prostitute is hit, she is programmed to say things like, "I like it rough." Research tells us that whenever females say they like sexualized violence, men are more likely to be violent towards women.[159]

The teenage shooters in Paducah, Kentucky, Jonesboro, Arkansas, and Littleton, Colorado, were students who habitually played video games.[160] Games such as *Doom* were favorites of the boys involved in the Columbine High School murders.[161] Although the fact that these boys were addicted to such games is not sufficient evidence to insist that violent video games are the cause of such behavior, surely they contribute to some degree. One of the most tragic school shootings took place on the campus of Virginia Polytechnic Institute and State University (Virginia Tech) in Blacksburg, Virginia, in April 2007, when a student shot and killed thirty-two people and wounded many more before he committed suicide.[162] He had sent photographs of himself to a news program on that very day showing himself dressed like a character on a video game, wearing a black hat, jacket, and gloves and posed with arms outstretched holding two guns.[163] Citing the Constitution's protection of free speech, federal judges have rejected attempts to regulate games in eight cities and states since 2001, although states continuously attempt to pass such regulations.[164]

An early meta-analysis of the research involving video games found that exposure to violent video games is negatively associated with prosocial behavior and positively related to aggressive affect and physiological arousal.[165] Playing such games reduces the likelihood of youths evidencing empathy or

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159. *See, e.g.*, Edward Donnerstein & Len Berkowitz, *Victims Reactions in Aggressive Erotic Films as a Factor in Violence Against Women*, 41 J. PERSONALITY & SOC. PSYCHOL. 710, 721–22 (1981) (finding that men who viewed a rape scene where the victim responded positively were subsequently more aggressive towards a real woman).

160. Dorothy G. Singer, *Introduction*, *in* CHILDREN, ADOLESCENTS, AND THE MEDIA, *supra* note 49, at xv, xvi.

161. *Id.*

162. *Id.*

163. *Id.*

164. *See, e.g.*, Video Software Dealers Ass'n v. Maleng, 325 F. Supp. 2d 1180, 1189 (2004) (criticizing the Washington law regulating the sale of video and computer games as both too broad and too narrow).

165. Anderson & Bushman, *supra* note 67, at 358.

helping others. Craig Anderson responds to the criticism that there are no longitudinal studies on the negative effects of videogames by pointing to the numerous longitudinal studies pertaining to television violence viewing which yield the same results.[166] The video game industry has followed in the footsteps of the TV and movie industries in denying the scientific facts about the real dangers posed by their violent products.

Parents are responsible for their children's media diet and need to do a much better job of monitoring and screening violent material. Their task, however, is made difficult by several key factors. The ratings systems used by the video arcades and the video game industry are badly flawed, especially in terms of the amount of violence permitted in games rated as appropriate for "Teens" and for "Everyone." Unfortunately, many retailers fail to require proof of age for violent video game purchases and rentals, or for the playing of violent games in video arcades, thereby violating the self-imposed industry screening system. Violent video games complete with gory violence are easily accessible from the Internet without proof of age, and children can download demonstration versions free of charge.

Several interventions have been shown effective in reducing the problem of violent media-induced aggression. Reducing exposure to all types of media violence (for example, by turning off the TV and video games) and teaching media literacy skills (for example, how to identify media violence, why the violent solutions offered in entertainment media are ineffective and inappropriate, and how to generate alternative nonviolent solutions) have been found effective in reducing subsequent levels of aggression and violence.[167] Parents can incorporate such actions themselves, and schools can incorporate such interventions into their curricula.

The American Psychological Association (APA) adopted a resolution concerning violence in video games and interactive media.[168] The Committee on the APA Resolution on Violence in Video Games and Interactive Media reviewed the research, much of which was cited above. In addition to calling for a reduction in violence in video games and interactive media, based on the findings, the resolution recommended the following:

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166. *See id.* at 354, 358 (noting the need for longitudinal research on the effects of violent video games while recognizing the conclusive nature of the research in TV and movie violence).

167. *See* Robert McCannon, *Media Literacy/Media Education: Solution to Big Media?*, *in* CHILDREN, ADOLESCENTS, AND THE MEDIA, *supra* note 49, at 519, 535–36 (discussing various media literacy intervention techniques).

168. AMERICAN PSYCHOLOGICAL ASSOCIATION, RESOLUTION ON VIOLENCE IN VIDEO GAMES AND INTERACTIVE MEDIA (2005), http://www.apa.org/releases/ resolutiononvideoviolence.pdf (last visited Sept. 29, 2009) (on file with the Washington and Lee Law Review).

- Teach media literacy to children so they will have the ability to critically evaluate interactive media.
- Encourage the entertainment industry to link violent behaviors with negative social consequences.
- Develop and disseminate a content-based rating system that accurately reflects the content of the video games and interactive media.
- Encourage developers of violent video games and interactive media to address the issues that playing these games may increase aggressive thoughts and behaviors in children and adolescents and that these effects may potentially be greater than the effects of exposure to violent television and movies.

Fortunately, there are some producers of video games who have designed products such as *PeaceMaker*, a game about the Middle East developed at Carnegie Mellon University.[169] The game allows the players to deal with the issues facing Israelis and Palestinians and to identify with either group. Other games, such as *Food Force* or *Darfur is Dying*, deal with important social issues.[170] Games such as *Guitar Hero* and *Tony Hawk's Proving Ground* have been bestsellers and have attracted a wider audience than the typical sixteen- to thirty-five-year-old male.[171] *Spore* is a new game in which the player, starting with single cell microbes, can follow them through their evolution into intelligent multicellular creatures and then build civilizations to populate new planets.[172] Finally, there is Sid Meier's *Civilization Revolution*, a console game that allows the player to identify with a leader of one of history's great cultures and "guide[] the tribe through the grand sweep of history: building cities, making discoveries like the alphabet and iron-working before uncovering the

169. *See* Press Release, Carnegie Mellon University, Carnegie Mellon's Entertainment Technology Center Develops PeaceMaker, A Videogame Simulation to Encourage Peace in the Middle East (Oct. 27, 2005), http://www.cmu.edu/PR/releases05/051027_ peacemaker.html (last visited Sept. 29, 2009) (announcing and describing the *PeaceMaker* game) (on file with the Washington and Lee Law Review).

170. *See* Clive Thompson, *Saving the World, One Video Game at a Time*, N.Y. TIMES, July 23, 2006, at AR28 (2006) (explaining the development and mechanics of the *PeaceMaker* game).

171. *See* Seth Schiesel, *In a New Merger, Evidence of How Much the Gaming World Has Changed*, N.Y. TIMES, Dec. 5, 2007, at E3 (discussing how the video game industry has changed in an attempt to expand beyond its core demographic).

172. *See* Carl Zimmer, *Gaming Evolves*, N.Y. TIMES, Sept. 1, 2008, at F1 (reviewing and discussing Spore).

secret of mathematics, organized religion, the printing press and later, of course, the Internet."[173]

Whether we deal with computer or video games, it appears that there is a strong need for child or adult players to identify with the heroes in the games—to develop avatars or new personas that embody the personality traits and characteristics of an ideal self or perhaps even of an evil self. By doing so, we discover a bit of who we are. The journey for a self continues throughout our lives, ever changing and evolving as new experiences shape us. Will the new electronic media of the future have even a greater impact on how we perceive ourselves?

173. Seth Schiesel, *A Conquer-the-World Strategy Game That's at Home in the Living Room*, N.Y. TIMES, Aug. 19, 2008, at E3.