

THE GAMER CULTURE: AN EXPLORATION OF GAMER ARCHETYPES AND  
THEIR RELATIONSHIP WITH COPING STRENGTHS

A Dissertation

Submitted to the School of Education

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In partial fulfillment of the requirements for  
the degree of Doctor of Philosophy

By

Stephen Frank Kuniak

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THEIR RELATIONSHIP WITH COPING STRENGTHS

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## ABSTRACT

# THE GAMER CULTURE: AN EXPLORATION OF GAMER ARCHETYPES AND THEIR RELATIONSHIP WITH COPING STRENGTHS

By

Stephen Frank Kuniak

December 2014

Dissertation supervised by Dr. David L. Delmonico

The purpose of this study was to investigate the relationship between gamer personality types, preferred coping strategies, and levels of resiliency as a means of beginning to understand the psychological factors making up the gamer culture. This study used a demographic questionnaire, the BrainHex Gamer Personality Test, the Coping Strategies Inventory Short Form, and the ER-89 Ego Resiliency Scale to assess participants. Chi Square analyses were used to explore gamer personality types relationship with coping strategies, a Median Test was used to compare personality types to resiliency levels, and Multiple Regressions were used to explore whether a person's coping style mediated the relationship between personality and resiliency level. The result of these analyses was that there was no significant relationship between personality

type, coping strategy, and resiliency levels, with the exception of a moderate negative relationship between engagement coping and resiliency.

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# CHAPTER I

## INTRODUCTION

Playing video games, according to Browning (2006), was once an activity indulged in only by individuals who struggled with social awkwardness and positioned themselves at the fringe of mainstream culture. The field has shifted, however, and video games are now played in at least half of American households (Entertainment Software Association [ESA], 2014). Browning described video games as becoming the centerpiece of a multibillion-dollar entertainment empire. *Call of Duty: Modern Warfare 2*, one of the earlier installments in a prominent video game franchise, generated \$400 million in revenue during the first 24 hours of its release in 2009 (Guinness World Records, 2011). This record was unsurpassed by any other form of media released that year. This also eclipsed previous years' records and began a continuing trend of blockbusters in modern media releases.

Unfortunately, gaming's position at the top of the entertainment hierarchy has come with a price. Video games have been blamed for a myriad of social and behavioral problems including teenage suicides, school shootings, and obesity (Browning, 2006). Concerns surrounding "gaming addiction" have become rampant since destructive behavioral patterns began hitting the news with individuals playing a game called *Everquest* in the 1990s (Chappell, Eatough, Davies, & Griffiths, 2006).

The negative focus placed on video games in recent years, however, has not slowed down their popularity. Unhindered by the negative press, the video game industry has continued to top entertainment media sales records. Video game franchises have also found their way into almost every aspect of our popular culture. As franchises

become more popular, their character's stories become more marketable and begin to be found on clothing and collectables. As well, the franchise owners have begun to cross media genres and to develop short films starring gaming characters, as well as novels that expand the stories found in the game. In this way gaming expands into many facets of a gamer's life.

### **Statement of the Problem**

The ESA is a national foundation that compiles demographic and usage data available for video game research and for video game production companies. Their 2014 Sales, Demographic and Usage Data Report indicated that 51% of households in the United States owned a video game console. This report indicates that there is an average of two identified gamers in each game-playing household. According to the ESA's 2012 report, 78% of identified gamers play video games at least one hour per week. The 2014 report indicates that 54% of Americans play video games. With this level of exposure it is very likely that many counselors have regular contact with individuals who identify as "gamers."

Scholarly evidence for gamers as a unique culture is growing. Steinkuehler (2006) identified video game worlds as a microcosm of real world culture. Steinkuehler indicated that video games are both their own unique cultural component and an artifact from our larger world culture. Steinkuehler proposed unique opportunities for research in viewing the practices found within the gamer culture. Squire (2002) suggested that video games are an outlet with which we can view the whole range of human experiences. Squire indicated that the individuals who inhabit these worlds make the game's rules and metaphors meaningful to themselves. The phenomenon of ascribing meaning to lived

experiences is fairly common. What is unique about the revelation of gamers ascribing meaning to their virtual experiences is that “meaning” speaks to the importance and centrality of their virtual experiences.

Though there are many studies (Anderson & Bushman, 2001; Dill & Dill, 1998; Griffiths, 1999; Kirsch, 2003) that identify the video game as a catalyst for negative emotional response, there are comparatively few that explore the dynamics of the gamer population. Daskon (2010) identified a person’s culture as being a value system that is a dynamic part of any identified population. Baruth and Manning (2003) identified culture as “institutions, communication, values, religions, genders, sexual orientations, disabilities, thinking, artistic expressions, and social and interpersonal relationships” (p. 9). Shepard (2008) gave examples of gamer hierarchy through the use of a unique gamer specific language called “leet speak.” This use of unique language affords in-group interaction and promotes a sense of bonding among members who are able to understand. Yee (2006) described unique gamer social interaction as a potential motivation for play. Art exhibits have sprung up chronicling video games as art (Gibson, White, Harrington, & Ahrens, 2011). These examples provide a developing framework of “gaming” meeting several of the underpinnings identified as being central to a culture. As the culture grows in size greater details about concepts like game preferences among gender, organizations devoted to sexual orientation and gaming, and even religious themes among gamers are surfacing at gaming conventions. Counselors have a responsibility to understand the unique needs of all cultures (Baruth & Manning, 2003). Individuals who identify as “gamers” see gaming as something greater than a hobby, but as a part of their self-identity (McGonigal, 2011a). If gamers are their own culture, then their practices would

contain some level of cultural benefit according to Daskon (2010). Daskon identified facets of a culture as being benefits to the culture's value system.

McGonigal (2011a) described "gamers" as individuals who look to games as a means of fulfilling real world needs. She described gamers as being average men and women who identify themselves as a part of a collective culture that seek out interaction in virtual worlds hosted on video game consoles, personal computers, mobile devices, and other media. Specifically, McGonigal explained that gamers are individuals who seek purposeful interaction with games as a means of experiencing active interaction that fulfills "a need for more satisfying work, a greater sense of community, and for a more engaging and meaningful life" (p. 6). Shepard (2008) briefly defined gamers as individuals who make gaming a part of their lifestyle; as being multifaceted and complex individuals, but at their core, all gamers fit the basic structure as defined by McGonigal.

This notion of cultural benefits would go against the negative press frequently targeted at video games, and consequently to the gamers who indulge in them. The prevalence of negative research alone might lead the casual researcher to believe that the topic of gaming requires no further research. Steinkuehler (2006), alternatively, makes an argument that video games afford a unique framework for research. She indicated that video games provide an opportunity to study human cognition, behavior, and interpretation of symbolism.

Dill and Dill (1998) suggested that past studies may not have been done with enough care or attention to detail to make them useful in formulating conclusions about gaming. This statement is particularly unique in that Dill and Dill's research purpose was to explore the negative influence of video game play. The assertion that video game

studies may be lacking or misinterpreted is echoed by Ferguson (2013). In his article posted on the Chronicle of Higher Education's webpage, Ferguson discussed a history of questionably interpreted statistics and poorly designed studies. The article goes into detail about recent academics' claims about links between video games and violent behavior, and points out the inappropriate interpretation of research that is being used to support each of these claims. Ferguson concluded by challenging scholars to be more careful in their interpretation of research and their statements surrounding all studies.

Individuals like Ferguson provide hope that there is a shift among academics that will call for greater objectivity in gamer research. Positive articles remain scarce compared to discussions of aggression or negative learning patterns. The condemning of video games through scholarly research could be compared to the famous book by psychologist, Fredric Wertham entitled *The Seduction of the Innocent* (1954). This book, considered a collection of scientific findings, accused the comic book industry of causing homosexuality (through images featuring the characters Batman and Robin), fascism (as represented by Superman), and promotion of violence (through their toy advertisements).

Many of the claims presented by Wertham (1954) are now seen, through a historical lens, as the assertions of concerned individuals who were seeking a source that would explain their fears. However, the impact of this book on the comic book industry was long lasting. A regulatory board called the Comics Code Authority was created to monitor these concerns, and existed until only recently (Kirsch, 2011). The comparisons between Wertham's research and the current trend of blame towards video games are striking in their similarities.

Kallio, Mäyrä, and Kaipainen (2011) discussed a growing interest in video games, and gamer culture, by researchers. However, they challenged that there is still a great deal of work in trying to sort out all of the weaknesses in our current understanding of gamers. They cautioned that researchers risk overgeneralization in attempting to provide answers to our gaps in knowledge. Kallio et al. stated that the undertaking is necessary if we hope to gain a more comprehensive view of video games and the gamer culture. Further, they asserted the need to understand the gaming culture from all of the facets that make up “the gamer.” They specified that an understanding of male and female gamers, young and old, dedicated and casual gamers are necessary to provide fully reliable data on the overarching gamer population. Kallio et al. went so far as to propose their own model for gamer typology. The model indicates subcategories similar to those proposed by Bateman, Lowenhaupt, and Nacke (2011), but has a focus on Massively Multiplayer Online Role Playing Games (MMORPGs). Kallio et al. referenced a need to keep making the small steps that will be necessary in gaining a more general understanding of, what is becoming, a global culture.

Yee (2006) explained that the popular understanding of the gamer has been overly simplified. Yee suggested that a broad look at video game preferences and gamers’ thinking patterns is necessary to help define the culture’s parameters. Yee indicated, though, that individualized gamer personalities cannot be lost in this perspective. According to Yee, many factors influence a person’s decision to play a specific game. Further, the same intricacy of choice is likely present for the meanings and consequences that an individual associates with their game playing. Yee considered alternative motivations such as a Social Component, an Achievement Component, and an Immersion

Component, as possible motivations that move away from strict personality characteristics. Yee went on to state that the only benefit to over simplifying information about gamers and video games is that we are able to make sweeping generalizations about negative behaviors and consequences. This statement speaks to a belief that these sorts of generalizations have helped to push a negative bias towards video games in scholarly research. Lastly, Yee asserted that his own research on classifying gamer motivation into personality traits is simply a foundation and that others need to move into more quantitative research to help define the gamer population further.

If people who engage in regular gaming activities can be considered a culture, then when they present in need of mental health services, mental health professionals must respond in culturally competent ways. The American Counseling Associations (ACA) Code of Ethics (2014) indicated a need to take cultural context into account when assessing, working with, and relating to those we serve. Baruth and Manning (2003) described culture as being fluid and emergent as individuals go through their lives recreating themselves through their own narratives and contexts. Daskon (2010) challenged professionals to consider that culture builds value, or “cultural capital,” in those who indulge in it. Given the potential benefits attributed to culture, it would be in a clinician’s best interest to attempt to seek out opportunities afforded by their client’s culture for positive change. Additionally, the field of counseling’s emphasis on respect and understanding of unique cultures promotes a need for counselors to better understand the components of a gamer culture.

Culturally competent counselors take into account the unique worldview of other cultures they may encounter (Baruth & Manning, 2003). The goal of counseling is to

treat every individual with the respect and dignity they deserve. A multicultural perspective helps to facilitate this objective. Many counselors learn the basic needs of major world cultures through a focus on multiculturalism in their degree programs, but there are lesser known or less readily recognized cultures, such as the gamer culture that is explored in this study. Given the emphasis placed on being considerate of all cultures' individual perspectives (Baruth & Manning, 2003), these newly emerging cultures deserve the same level of consideration as their more prominent counterparts.

A casual observer might believe that all gamers are created equal. It is my experience that every individual gamer has unique outlooks on gaming that help drive their choices in exposure and immersion in video games. Shepard (2008) defined gamers through a three level system. These categories are described through a gamer specific communication style called "leet speak" (the term "leet" is derived from the word "elite"). The gamer levels, according to Shepard, are Casual or "n00b," Gamer or "g4m3r," and Hardcore or "133t." *Casual gamers* are defined as individuals who play for short amounts of time, have specific genres that they prefer, and do not make gaming a central part of their social experience. *Gamers* play a variety of games, though they have specific preferences, are aware of social and political aspects of the gaming industry, and see gaming as an active part of their social experiences. *Hardcore gamers* are individuals who prefer video game experiences as a primary social endeavor, actively seek out opportunities to experience video games, and are very aware and may seek out opportunities to involve themselves in social and political dialogue about video games. Though this study is focusing on the culture of gaming as a whole, it is still useful to consider delineations between individual gamers' levels of self-immersion.



Pargman and Jakobsson (2008) discussed the concept of gaming being a part of or separate from an individual's self-concept. Many individuals may see gaming simply as an activity, and may respond negatively to the notion that gaming contributes to an individual's overall identity. These individuals seem to presume that all game play is the same, and that it is a leisure activity rather than a part of their identity. According to Bateman et al. (2011), each gamer has unique preferences in video game experiences. Individual gamers may prefer in game challenges, story elements, styles of play, community interactions, solitary indulgences, and levels of immersion between the game experiences and their day-to-day lives.

Pargman and Jakobsson (2008) concluded that a distinction between "play reality" and "everyday reality" does not exist. Their research indicated that game activity is an integrated part of the gamers' everyday routine. Separating the "two realities" would be similar to separating other unique activities associated one's culture. Observing a person while attempting to separate out factors of their personality, culture, gender, and so forth, would provide an inaccurate representation of the totality of that person (Baruth & Manning, 2003). The modern understanding of culture, as being the sum of all of the facets that make up a person's individual identity, supports this notion. The American Counseling Association's ethics code (2014) emphasized the need to be culturally aware and culturally sensitive. The cultural experiences and motives of gamers are as diverse as the individual gamers themselves.

Every culture has unique strengths and weaknesses that impact its members. A phenomenon that is observed in individuals regardless of their age, gender, or cultural makeup is that of resiliency. Resiliency is the ability of individuals to positively deal

with negative life experiences (Tugade & Fredrickson, 2004). Many factors may influence an individual's resiliency. One factor thought to be a strong predictor for a person's resiliency is that individual's unique coping strategies (Campbell-Sills, Cohan, & Stein, 2006). According to Campbell-Sills et al.'s study, an individual's tendency toward task-oriented or emotional-oriented coping styles accentuates the link between that individual's personality and his or her level of coping.

The literature identifies potential motivations for individuals who identify themselves as gamers. Though research has been accomplished on gamers, this has been predominantly focused on video games connection with aggressive or negative emotional reactions. Not enough research has been completed that explores gamers from the perspective of a culture. Further, because of this lack of cultural research, very little is known about specific psychological features that are inherent and potentially useful to the counseling profession.

### **Purpose of the Study**

The purpose of this study was to investigate the relationship between gamer personality types, preferred coping strategies, and levels of resiliency as a means of beginning to understand the psychological factors making up the gamer culture. Current research on this topic supports the relationship between gamer personality measures and coping strategies. Nacke, Bateman, and Mandryk (2011) hypothesized that individuals who align closest with the "Mastermind," "Conqueror," or "Daredevil" gamer personality classes will be most closely aligned with task-oriented coping. Nacke et al. presumed this because these personality types matched closely with scores from the Myers-Briggs type indicator for being associated with "fight or flight" or "thinking" preferences.

Thinking, according to their study, is typically associated with emotionally detached decision-making, or task specific problem solving. Task-oriented coping is considered more closely related to resiliency than emotional-oriented coping (Campbell-Sills et al., 2006). Further, this study explores additional variables such as age, gender, amount of time playing video games per week, socioeconomic level, methods of play, and educational level to address any mediating factors among gamer personality, preferred coping method, and resiliency level.

### **Theoretical Basis of the Study**

The psychological concept of resiliency has seen increased focus in professional literature over recent years (Bonanno, 2004). Bonanno discussed instances of resiliency being seen as something that comes from a profound intervention; however, it is more commonly developed from more mundane, every day circumstances.

Resiliency in this study is defined as an individual's method and ability to cope with any and all unexpected life circumstances. The concept of resiliency and coping are frequently linked in existing literature. Fredrickson, Tugade, Waugh, and Larkin (2003) discussed how resilient individuals may use positive emotional traits to cope with negative life circumstances. Campbell-Sills et al. (2006) predicted that problem focused coping has a positive relationship with resiliency features, whereas emotion focused coping had a negative relationship with factors of resiliency. However, individuals like Bonanno (2004) indicated that resiliency may arise from multiple, and often unexpected, processes such as a person self-enhancing, experiencing psychological hardiness, and engaging in repressive coping.

A gamer is operationally defined as an individual who personally identifies as a member of the gamer culture, plays video games for a minimum average of one hour per week, and possesses an identifiable gamer personality preference. Existing literature, such as McGonigal (2011a), support the notion of a self-affirming component to the gamer culture. The average of one hour per week timeframe was chosen based on the ESA's 2014 Sales, Demographic, and Usage Data report that identifies 78% of gamers play video games at minimum of one hour per week. Gamer personalities have been explored by several different researchers (Bateman et al., 2011). Each researcher has posed similar, but unique titles and methods for identifying gamer personality traits. Many of the existing gamer personality measures focus on so called Massively Multiplayer Online Role Playing Games. The BrainHex Gamer Typology Measure (Bateman et al., 2011) was chosen for this study because of its ability to be generalized to all methods of video game play.

The relationship between coping strategies and resiliency (Fredrickson et al., 2003), as well as evidence to support a connection between coping strategies and gamer personality types (Nacke et al., 2011), necessitate a measurement of preferred coping strategies. Coping strategies were measured through the use of the Coping Strategies Inventory Short Form (CSI-SF) as developed by Addison et al. (2007). This test presumes that coping occurs through either emotion or problem focused methods. Within that frame there is also a presumption that individuals also approach problematic life situations from either engaging in dealing with the stressors or in disengaging from them.

## **Role of Counseling**

The intricacies of their cultural identity do not prevent gamers from experiencing life's struggles. Gamers are not immune to the same chronic difficulties, such as financial strain, challenging interpersonal relationships, and even addictions that exist within any other culture's experiences. The allure of being able to escape into virtual worlds, away from many of life's problems, can provide an opportunity for not wanting to readily return to reality. Overindulging in gaming, or becoming too immersed in the escape offered by virtual worlds can present complex pitfalls for the gaming population.

Gamers also concern themselves with positive aspects of their culture. They become interested in social engagements that focus on gaming. Many individuals, in my experience, seem to crave the social component of the gaming culture. The process of sharing stories and attempting to "out geek" one's peers is a common activity. Additionally, social storytelling seems to build strong bond between members of a gamer social group.

The field of counseling has comparatively little research to draw on when dealing with this particular culture as opposed to other, longer studied cultures. The literature that is available, as mentioned above, is somewhat limited in its scope. There has been a significant focus on the link between exposure to video games and an increase in feelings of aggression (Dill & Dill, 1998) and in negative coping strategies. Counselors could increase their understanding of the culture by having open and frank conversations with individual representatives of the culture as a means of gaining a greater understanding of the culture.

The field of counseling identifies a need to build effective relationships with our clients. In fact the counseling relationship has been seen as a primary concern in beginning the therapeutic process (Horvath & Luborsky, 1993). The field of counseling could use the imagery and storylines in video games to create metaphors that would help improve their professional relationships with their gamer clients. The creation of these sorts of interventions would likely require a greater understanding of the imagery in video games. However, given the tie between gamers' identity and the games they play (Pargman & Jakobsson, 2008), these interventions would likely be extremely effective. The significant number of people identified as gamers by the ESA's 2012 report, and the potential benefit of improving the clinical impact of therapy for this population, means that the field of counseling could benefit greatly in learning more about the gamer population.

There are a number of positive and negative components to gaming. These help to identify strengths within the culture, as well as drawbacks that would benefit from counseling's attention. Counseling's focus on wellness and understanding of human development would be an asset in beginning to sort out the global understanding of this often overlooked culture that is called for by current researchers.

### **Difficulties With Gaming**

The activities in which a culture indulges are often for the purpose of enjoyment and communal experience. However, any pleasurable activities have the propensity to be overused or abused. No individual culture is immune to its members potentially experiencing maladaptive patterns of behavior. The same concerns exist within the gaming culture.

Chappell et al. (2006) examined gamers' individual accounts of their experiences in playing the role playing game *Everquest* (1999). According to this study the gamers who developed problematic practices around *Everquest* felt as though they were not able to step away from the game. The participants in the study reported missing work and school, losing their jobs, and developing conflicts with friends and losing significant relationships. The reasons for these life choices were varied, but many focused on the sense of reward provided in the virtual world of *Everquest*, rather than the consequences that existed in the real world.

Chappell et al.'s (2006) study went on to mention the continued downward spiral, often despite negative consequences, that individuals suffering with more commonly recognized addictions also report. One of the participants in the study discussed having lost his job as well as his wife and two children because of his time spent gaming. This participant reported continuing to engage in marathon *Everquest* sessions that resulted in not taking care of his hygiene, calling his children, or maintaining his home. Another participant in the study stated having the police called to his home as his place of work had filed a missing person's report because of the amount of time he was away from his job. Many of the participants reported having lied to family, friends, and coworkers to get around the inconveniences caused by their problematic behavior. Although help groups exist in other countries for dealing with video game addiction, they are not widely available in many areas of the United States.

There has been an upswing in news reports of individuals suffering gamer related physical health problems. Little (2011) reported a case in which a young man in Great Britain died suddenly because of a deep vein thrombosis (DVT). Sitting for long periods

of time can cause this condition. According to this story the 20-year-old had no previously existing medical problems and was in good health. The report indicated that the deceased, at times, would play his *Microsoft Xbox* for up to 12 hours at a time. A marathon gaming session was being cited as the most likely cause of this DVT and, consequently, his death. DVT, according to Little's article, was typically associated with long plane flights, but has more recently been seen in individuals who spend long hours in front of computer screens (Little, 2011).

These health concerns continue to make headlines. The game industry has made efforts to teach healthier practices. The struggle for the industry remains in getting gamers to make use of their suggestions for healthy practice. I have observed changes over the last five years that include an emphasis on physical motion in games, the gaming console prompting the gamer to take a break and move around their home, and availability of increased parental controls to help promote healthy gaming habits. So little press on the topic of healthy gaming habits has led to a lack of this information reaching consumers. The ability to be open and frank with the individuals we encounter as clinicians would help with this lack of information dissemination.

### **Benefits of Gaming**

McGonigal (2011a) described the many positive applications for video game play. McGonigal discussed gamer focus, creativity, and effort as being applied in the virtual worlds of video games rather than the constraints of the real world. McGonigal (2011a) and Hardwick (2011) both described opportunities for the same focus oriented skills that gamers apply to video games as being useful in taking control of an individual's day-to-day lives. Specifically, one of the ideas presented by McGonigal described opportunities



for gamers to use their skills to increase their optimism and to engineer the lives they hope to have. The base of Hardwick's formula for life success uses criteria found in role playing games as a structure for developing a narrative for stress reduction and avoidance of procrastination.

Recently, video games have found their way into the operating room. Video games, as seen through virtual reality simulations, have been used to distract children during an intravenous placement (Gold, Kim, Kant, Joseph, & Rizzo, 2006). The games are reported to provide enough of a distraction for children that they do not attend to the pain associated with an IV placement. Hospital staff are beginning to employ video games, in this way, as a means to help cut down on the stress that sometimes punctuates these procedures.

The "*Kinect*" gaming peripheral developed for the Microsoft XBox 360 uses motion capture technology to translate the player's movements into a game. The marketing slogan for the *Kinect* is that players can become their own controllers. This has proven most true with the medical professionals who are using the motion cameras of the *Kinect* to complete difficult procedures in a safe, sterile, and realistic manner (E. A. Moore, 2012). Doctors are able to operate images of a patient's anatomy, and then manipulate the images through their gestures during a surgical procedure. This has improved accuracy with the procedures and helped to keep crowding in operating rooms to a minimum. Though this may not be seen as a "game" in a classical sense, it is the use of a gaming peripheral, and the practice earned by using a device like the *Kinect* provides the same framework for learning as what can be found in more traditional use of games.

Video games have been found to provide an increase in selective attention (Green & Bavelier, 2003). According to Green and Bavelier's study, an individual's attentional capacity is typically pre-defined. This means that each person has a certain level of mental function that can be spread out over multiple tasks. What Green and Bavelier proposed through their study is that individuals who played video games had increased their selective attention abilities, or more plainly, had increased their ability to attend to multiple stimuli and shift their focus. Their studies do report significant results for video game play influencing, and more importantly, increasing participants' attentional capacity.

### **Social Aspects**

The media has historically represented gamers as being social outcasts who prefer to isolate rather than to make friends (Browning, 2006). Though there are individuals who fit this stereotype, there are many gamers who appreciate the more social aspects of the culture. The availability of online communities like "XBox Live" and "Playstation Network" have allowed console gamers to have access to social interactions with their gaming counterparts from around the world. The ESA's 2012 report indicates that 62% of identified gamers play video games socially. This figure is representative of both in person and online social interactions.

Gaming conventions, once frequented only by industry professionals, have become a major social engagement for gamers who are willing to travel great distances to attend them. Davidson (2011) explained the basics of these types of conventions. Gamers travel to conventions to be with their peers, interact with developers, and see what major shifts in the field of gaming they can look forward to in the coming year. The

“Cons” are made up of press conferences, social engagements, and are highlighted by the “give aways” that publishers provide for individuals to remember their products and, likely, to help them feel more joined with the various virtual worlds these trinkets represent.

The draw toward social interaction goes beyond conventions. Gamers who play online establish social groups through their online presence, often using unique patterns of communication (Wright, Boria, & Breidenbach, 2002). These social groups may begin as “real world” friendships that become transferred into a virtual environment, or they may be completely established online. According to Wright et al., gamer interactions are focused around their unique communication patterns which reinforce their bond online. This communication can be used for conventional purposes, goal oriented strategy, or even insults against an opposing group of gamers, or on members of their own social group. Regardless of the communication’s chosen purpose, the flavor of it is unique to this specific culture. Clinicians who are aware of the importance of the social aspects of gaming would be able to have immediate opportunities for therapeutic joining or credibility with the gamers we encounter.

### **The Phenomenon of Resiliency**

Of particular interest to me, as researcher, is the phenomenon of resiliency. Resiliency is the ability to recover effectively from negative life events (Tugade & Fredrickson, 2004). According to Maluccio, Pine, and Tracy (2002) resiliency is thought to be characterized by attributes such as “social competence, problem-solving skills, autonomy and self-esteem, a sense of purpose, and an orientation to the future” (p. 11).

Masten (2001) defined resiliency as “good outcomes in spite of serious threats to adaptation or development” (p. 227).

Many factors seem to contribute to resiliency, but no one factor seems to have emerged as being primary. People draw strength from different experiences, which helps them to be better able to cope with stress and negative life events. One of the many theories is that resiliency is drawn from positive emotions (Tugade & Fredrickson, 2004). Another theory is that resiliency emerges from use of natural supports (Bonanno, 2004). There are many possible sources of resiliency, and it seems that no one factor is common among all people. Different individuals seem to draw strength from unique experiences to cope with the stresses and unforeseen traumatic events that occur in their lives.

Research has more recently explored personality characteristics as a common thread that may influence an individual’s level of resiliency. Positive personality traits such as openness, extroversion, and conscientiousness have been highly correlated with resiliency (Rioli, Savicki, & Cepani, 2002). These factors are also representative of an agreed upon, and prominent, representation of personality traits (McCrae & Costa, 1997) called the Big Five factors of personality. Campbell-Sills et al. (2006) elaborated on correlations between some of the traits represented in the five-factor model of personality, as well as a mediating factor associated with coping strategies and individual’s resiliency levels.

A common thread within the resiliency literature is that of coping strategies. Campbell-Sills et al. (2006) pointed out a number of personality components that seemed to be linked to resiliency. This relationship became clearer when considered as a function of an individual’s method of coping. When the researchers took into account the

effect of task-oriented and emotional-oriented coping strategies, they were able to account better for the links between personality and coping than between personality and coping alone. These results suggested a primary link between an individual's preferred method of coping and their level of resiliency.

Campbell-Sills et al. (2006) not only found that methods of coping better explained links between personality and resiliency. They also found that task-oriented coping methods were positively correlated with resiliency measures, while emotional-oriented coping strategies were found to be negatively correlated with resiliency measures. This realization further galvanized the relationship between methods of coping being predictive of an individual's level of resiliency.

Researchers have been increasingly interested in peoples' capacity to overcome difficult life circumstances. Consequently, resiliency has been a phenomenon of increasing interest (Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005). A way to help coach people to become more resilient would represent a boon to mental health interventions. Certainly, even simply knowing more about resilient characteristics would help mental health professionals to identify further opportunities for treatment planning.

### **Resiliency in Practice**

Richardson (2002) took a metatheoretical approach to defining resiliency. He reported that our modern understanding of resiliency is that it is governed by our ability to generate energies toward creating solutions to life problems. As well, resilient individuals could use positive energies to wash away negative feelings that come from their day-to-day lives. When looking at resiliency as a positive energy, Richardson

indicated that individuals can experience relief from physical signs of stress by being exposed to an external positive source of energy. This can be, as he indicated, anything that might give us joy. It could even be as simple as the visit from a loved one, or receiving good news.

A resiliency-training project was chronicled by Bickley-Green and Philips (2003). This project focused on teaching youth in at risk populations alternative coping skills around negative activities like drug and alcohol use. The initiative taught children, in an after school program, art skills and play techniques in order to foster more resilient thinking patterns. Bickley-Green and Philips referred to other studies that support the idea of play becoming a crucial part of building strengths through all age groups. They go on to say that reconstruction of, and play with imagery can help understand material previously learned. According to this description play, and more specifically, play with imagery seem to link seamlessly with Jones' (2002) thoughts on the use of video games for learning, reinforcing good patterns of behavior, and even in establishing resiliency and coping strategies.

Macedonia (2001) discussed his observations of potential benefits associated with individuals who have grown up exposed to video games. As an army scientist he discussed benefits attributed to game exposure including, but not limited to, an ability to process multiple tasks simultaneously, an extreme increase in attention span, and a shift in learning from passive listening to discovery-based experiential learning. The dynamic thinking patterns created by video games, as described by Macedonia, lend themselves to the hard working methods of coping that build resiliency discussed by Campbell-Sills et al. (2006).

## **Research Questions**

1. What is the relationship between gamer personality type and preferred coping style?
2. What is the relationship between gamer personality type and resiliency?
3. What is the relationship between preferred coping styles and resiliency?

## **Summary**

In conclusion, the literature suggests factors, primarily styles of coping, that influence resiliency in individuals. Researchers suggest connections between individuals experiencing resilient behaviors from fantasy imagery and play. Resiliency is a construct that has many definitions and methods of interpretation. Generally, resiliency can be defined as effectively being able to deal with the struggles that our lives throw at us. There are many theories as to how individuals become resilient, though a common thread in the resiliency literature is the phenomenon of coping. There are likely as many types of coping strategies as individuals who establish them. Some theorists propose that individuals may model positive life decisions, and methods of coping, from the characters that we find in fantasy stories. A more recent development of this theory is that video games may provide the next logical step in how individuals experience fantasy.

Video games have become a multi-billion dollar industry in the world, and have created a legion of followers that identify with the characters and methods of play presented in their favorite entertainment medium. These so-called gamers are a unique culture wrought with their own strengths and struggles. Video games, in the mental health literature, have not had the most inspiring track record. The literature frequently ties them with being the catalyst for violence and aggression. Recently, there are some

researchers who suggest otherwise. Despite potential problematic components, video games are reported to have positive benefits to individual learning, health, and cultural identification. Further, these studies propose that the gamer population is a microcosm with which to view human behavior, as well as a unique and understudied culture.



## CHAPTER II

### LITERATURE REVIEW

Video games seem to have transcended their place as an American cultural “component,” and are now becoming a part of a unique and individual culture (McGonigal, 2011a). Baruth and Manning (2003) defined culture as “institutions, communication, values, religions, genders, sexual orientations, disabilities, thinking, artistic expressions, and social and interpersonal relationships” (p. 9). This is supported by Daskon (2010) who identified culture as being the sum of an individual or groups values that are unique and important to them. In order to define gaming as its own unique culture it will need to mesh with these identifications of culture.

#### **Integrated Thought, Speech, and Action**

Zaharias and Papargyris (2009) investigated the possible correlation between “massively multiplayer online game” (MMOG) interactions and the dimensions of culture. They defined culture according to Hofstede’s 1997 description. MMOGs are expansive online video games that allow thousands of players to interact with one another in large social groups. The authors’ perspective was that Hofstede’s model of culture was the most widely accepted model available, and so lent itself to comparisons. Zaharias and Papargyris reported a correlation between MMOG feedback and Hofstede’s cultural trait categories of “individualism vs. collectivism” and “uncertainty avoidance.” They also indicated a correlation with Hofstede’s category of “masculinity vs. femininity” which indicated to Zaharias and Papargyris that MMOGs possess an emphasis on social roles, gender, and relationships. Though the authors admitted that the relationships between culture and usability dimensions of an MMOG were statistically

small, their correlations did in fact exist. Zaharias and Papargyris provided convincing correlations between video game play and the definition of culture.

The integrated pattern of action described in the definition of culture is commented on by Yee (2006). He described the cultural premise of action, through the video game lens of work and play. Yee described these once different terms as being dichotomous through the video game medium. He went on to describe video games as being a central component in the intersection of the social, economic and political spheres of our culture. Yee's study illustrates the uniquely blurred boundaries that may exist in video game play. Yee summarized this phenomenon through his description of video games capacity to make the player work hard at the task of gaming.

“Massively multiplayer online role playing games” (MMORPGs) possess actual social jobs that characters may choose from to be able to thrive in their virtual worlds. MMORPGs are, in my experience, the same sort of game as an above-mentioned MMOG. The difference exists only in the use of a different acronym for the same type of game. Gaming is traditionally seen as a leisurely escape from our real world lives. In MMORPGs, there are many necessary tasks that mirror our real world careers. Yee (2006) observed that some individuals will come home from their “day job” only to do similar tasks in their “virtual job.” This phenomenon of working through play, according to Yee, is an evolution of the experiences traditionally gained through work. He indicated a much larger intersection may be occurring within our American culture, where the difference between work and play may be unalterably changing. The greatest catalyst in the dichotomy shift is likely the influence of video games.

Wright et al. (2002) discussed the interactions that exist between players when observing an online “first person shooter” (FPS) video game. In their exploration of the FPS game *Counter-Strike* they noted servers containing between 23-25,000 players online at one time. Wright et al. attempted to dissect the types of dialogue unique to the experience of gaming. The earlier definition of culture emphasizes unique language as being a primary component to cultural distinctiveness. Gamer language is important for communicating with, encouraging, and intimidating other gamers. Wright et al. went on to indicate that a mastery of the gamer language is necessary in order to be seen as a peer among other players.

There appears to be an established hierarchy within the virtual world of video games. Wright et al. (2002) observed the methods in which newer gamers seek the approval of more experienced players. Connectedness within a virtual world may build as much comfort as real world acceptance. A sense of belonging can occur when newer gamers are asked to be a part of an online “clan.” A clan is the name given to a team of gamers who work together for common achievement. It was observed that senior gamers will take up the role of teachers to newer players. Wright et al. pointed out that this teaching hierarchy is not exclusive to gaming, but is actually a part of many different groups. The ability to generalize the above listed communication patterns adds more credence to gamers becoming an identifiable and distinctive culture.

Wright et al. (2002) indicated a deeper practice of gamers infusing other popular culture references into their in game dialogue. Gamers will often reference themes and quotes from other mediums in popular culture as a means of enriching their dialogue. This sort of communication, through shared cultural experiences, has recently been

named a Comical Hypothetical (Winchatz & Kozin, 2008). Winchatz and Kozin suggested that this sort of communication pattern helps to build bonds between groups of people. Comical hypotheticals originate in a desire to entertain peers. The dialogue has the additional effect of building stronger bonds by creating an “us against the world” mentality among the peers. The ability to strengthen bonds through communication of shared experiences mirrors the communication patterns described by Wright et al. (2002).

### **Artifacts**

Artifacts can be seen as present within the virtual world of gamers in two ways (Steinkuehler, 2006). The video games themselves, in the physical world, are an artifact of the gaming culture. The video games may also contain artifacts as the experiences of the gamer are in fact an artifact of the impact of the game. The idea of the game being both a part of the cultural experience and containing the cultural experience is further discussed by Kallio et al. (2011). These authors identified a need for video games to be observed from a multidisciplinary perspective. They argued that gaming is too complex of a practice to observe from any one perspective, and that each experience is unique to the individual player. The individual lived experiences of the gamers make it difficult to pinpoint the parameters of the culture, but are an important component nonetheless.

Groups of gamers possess their own in game artifacts, as I observed. Video game developers design exclusive content for the gamers who seek an increased connection to their favorite franchise. The logos and team outfits designed by unique player groups are another example of an in game artifact (Wright et al., 2002). The distinctive experiences of the gamer population help to identify one another and reinforce a sense of belonging among one another that is common in other exclusive cultures.

## **The Structure of Gaming**

A significant percentage of the American population identify themselves as “gamers.” The Entertainment Software Association (ESA) is a national foundation that compiles demographic and usage data on video games. Their 2012 Sales, Demographic and Usage Data Report indicated that 49% of United States households own a video game console. Further, 78% of identified gamers play video games at minimum one hour per week. These statistics shift the perception of the gamer as a “geek,” as described by Browning (2006), to being a major component of our American culture.

The demographic of video game players is changing. It was once reported that 85% of gamers were male (Chappell et al., 2006). The ESA’s 2012 reports indicate the split between male and female gamers to be much more equal. This study places the number of reported male gamers at 53%, with a remaining 47% identified as female gamers. It is unclear if the general public is even aware of the above described dramatic shift in the gamer demographic.

The field of video game development is ever advancing. Game designers are constantly attempting to create a bigger and better product for their consumers. Dill and Dill (1998) made the statement that modern game technology is outclassing classic games in the same way that computers outclassed stone chisels as writing implements. This increased technology can create a better product, but may also increase the impact of video games on their consumers. Dill and Dill suggested the increased graphics in games may also increase their propensity to create aggressive feelings in the players.

The overwhelming majority of attention, through research, has been focused around the proposal that video games are negative influences on those who enjoy them

(Griffiths, Davies, & Chappell, 2003). Research has been done to compile and synthesize the overwhelming number of violent video game studies. Anderson (2004), through an overview of the research at the time, concluded that the effect of exposure to violent video games on aggression was significant. He described this exposure effect between violent video games and aggression as being greater than the effect of condom use on decreased HIV risk, the exposure of second hand smoking to lung cancer, and the effect of increased calcium intake on the mass of bones.

Anderson (2004) further described his findings surrounding research methodology. According to Anderson's analysis, the effect of the methodology in violent video game studies is nothing to be concerned about. This statement seems to contradict Dill and Dill's (1998) study, which indicates a significant number of methodological concerns in video games and aggression literature. As well, Griffiths et al. (2003) called for further studies on gaming as the current literature is littered with negative perceptions of gamers. Griffiths (1999) observed that the context, more so than the methodology, is important when considering whether the games may have positive or negative influences on people. Griffiths' focus on the individual gamer is unique for the time period in which his article was written. Modern researchers, such as Yee (2006), suggest against sweeping overgeneralizations, and indicate a need to focus on individual context.

Jones (2002) discussed the "Joint Statement on the Impact of Entertainment Violence on Children," which was issued on July 26, 2000, by a number of professional health organizations including the American Medical Association (AMA), American Academy of Pediatrics, the American Psychiatric Association, the American Psychological Association, and others, and was endorsed by both houses of Congress.

He went on to describe this statement as being touted as the final word on entertainment violence by those who had penned it at the time. The article indicated that its purpose was not to identify entertainment violence as being causal in problematic behaviors, but went on to indicate that entertainment violence only appears to have negative impacts on America's youth. Jones went on to elaborate that a representative of the AMA came forward in explaining that neither he nor any of his colleagues who issued the "Joint Statement" actually reviewed any of the research before they penned the document. This mix of concerns and missteps is in line with Ferguson's (2013) challenge to scholars to be cautious in their evaluation, exploration, and reporting of research.

### **Negative Aspects**

Many studies report correlations between video game play and an increase in violence and aggression. Gentile, Lynch, Linder, and Walsh (2004) initially found no interaction between trait hostility and exposure to video game violence. However, when alternative measures of hostility were explored as mediating factors, a correlation did arise between video game violence and hostility. Gentile et al. found that there was a correlation between violent video game exposure and fighting with teachers, as well as with getting into physical fights. The authors admitted that the limitation of this study is that the correlational nature of the statistics did not allow for an inference of causality to be reported. This means that the direction of aggressive feelings is unclear. It could be that the game exposure caused the fighting with teachers and physical fighting. However, it could also be that individuals who are already aggressive are simply drawn to violent and aggressive media.

In recent years there has become more awareness of the possibility of process addictions arising out of unhealthy video game play. According to Chappell et al. (2006), the game *Everquest*, specifically, has been of primary concern. *Everquest*, over the years, has become synonymous with video game addiction. Individuals surveyed for Chappell et al.'s study reported experiencing symptoms consistent with addiction. These symptoms included an increase in playing the video game, continued play despite negative consequences, and an impact to their day-to-day lives. Reported life impacts included a loss of important relationships, loss of work, and other negative effects.

The past several years have found an increase in the number of reports that describe physical health problems associated with gaming. There was a case reported by Reuters (2007) that focused on an individual who died of exhaustion after playing his favorite game. The individual played in an Internet cafe for so long that his body eventually shut down from exhaustion. Though this was a first major report, it did not prove to be the last.

Little (2011) reported, through The Sun in the United Kingdom, a story about a young man who had been playing the game *Halo* on Xbox Live (Microsoft's online gaming network) for so long he died of a deep vein thrombosis (DVT). DVTs are caused by a lack of movement in a limb resulting in the formation of a potentially lethal blood clot. DVTs were commonly associated with international air travel. According to Little, after a weekend of marathon gaming the young man bent over to pick up a stick of gum. This resulted in the blood clot that had formed, dislodging and working its way to his heart. The excessive gaming session was cited as a contributing factor to the young man's death.



Recently, there was a report (Associated Press, 2012) of a young man collapsing after a four-day video game binge. The young man collapsed of dehydration after he played *Call of Duty: Modern Warfare 3* on his XBox 360 for four days with minimal breaks. He was revived, but this scare has caused the victim's parents to reevaluate their rules around monitoring of their son's video game play.

### **Positive Aspects**

One does not have to look far for a story about the negative effects of video games. There are instances, though, in which individuals have found positive benefits to gamer cultural experiences. Hardwick (2011) defined the "nerd" culture, as he called it, as being made up of individuals who possess an ability to focus very intensely on specific activities. He saw this intrinsic ability to focus as a typically untapped boon. Hardwick discussed a need to shift this focus toward activities that can benefit the life of the "nerd."

Hardwick related the rules in games as being applicable to helping an individual organize his or her life. The organizational structure of role playing games creates a useful framework for individuals to organize their life's goals. Hardwick stated that role playing games focus on increasing a player's character proficiency is another transferrable skill to life improvement. The intense focus that a "nerd" or gamer possesses can help to create a drive for the individual. The skills present in certain games can then help make the gamer's goals more attainable.

Green and Bavelier (2003) discussed the possibility of video games increasing an individual's selective attention. A person's attentional capacity is the amount of mental space that any individual has to track and perform multiple tasks. Selective attention is the ability to make use of attentional capacity to attend to multiple tasks. According to

Green and Bavelier individuals who are exposed to video game play far outperform individuals who do not have exposure to video game play.

Dye, Green, and Bavelier (2009) reported results that further support the claim that game players possess an increase in attentional capacity. The authors went further in describing the player's development of speed in acquiring targets. The reported ability of individuals to acquire and attend to targets quickly, according to the authors, could be seen as video games simply increasing the player's proficiency in being "trigger happy." However, Dye et al. specified that the accuracy with which video game players can acquire specific targets indicates a refinement of their selective attention.

Macedonia (2001) reported similar findings in his summary of the new generations he observes entering the military. The effects of exposure to video games, he reported, include an ability to process multiple tasks simultaneously, an increase in attention span, and a shift in learning from passive listening to discovery-based experiential learning. Macedonia described video game players as possessing an ability to transfer their practiced skill sets from video game play into very useful, real world tools.

E. A. Moore (2012) reported the use of the XBox 360 motion sensing peripheral "*Kinect*" is finding a new home in the operating room. Doctors, according to her article, are using the *Kinect's* motion sensing/scanning camera to scan components of a patient's anatomy. They then use the motion tracker on the device to move the created images into position for viewing a 3D image of the patient's unique anatomy. The use of the *Kinect* camera provides surgeons a completely sterile environment, while always keeping their

visual aid in a helpful position. This is improving surgical accuracy and cutting down the confusion of the operating room.

Evidence suggests that the gamer population is in fact a culture all to itself, full of its own language, artifacts, and patterns of interaction. This culture is wrought with benefits, drawbacks, and unique social rules. There remains one simple question, however. What draws the gamer to the game in the first place?

### **Gamer Personalities**

Researchers have begun to ask why certain people are attracted to specific video games. This information is valuable for video game developers. Bateman et al. (2011) examined the history of gamer personality measures. They discussed a first gamer personality archetype as being described by Richard Bartle. This measure, which described four primary gamer types, seemed to have reasonable theoretical validity, but possessed very little quantitative data to back its measurements. The gamer types described were called Achiever, Explorer, Socializer, and Killer. These categories, according to Bateman et al., were effectively described, and were able to be quantified through statistical analysis. A limitation of the Bartle Test, as it became known, was that it only took into account online multiplayer games.

A movement in the research, according to Bateman et al. (2011) came from Yee (2006), who discussed gamer motivations. This typology took into account a broader spectrum of gamer personalities, but used qualitative data that were gathered by more “expert” gamers. The measure also continued to draw upon the multiplayer gamer personalities exclusively. Still, this was an important step to a measure that included some supportive research.

Kallio et al. (2011) attempted to create a gamer typology measure that made use of a quantitative gamer personality questionnaire. This measure was normed in Finland so, as the authors admitted, causes some struggles with its ability to be compared to a global sample. However, it is a positive movement toward a more comprehensive gamer typology measure. The authors, through their research, challenged future researchers. They believed that further steps need to be made to the quantitative analysis that they had begun.

Bateman and Boon (2005) attempted to design a comprehensive gamer typology measure. The authors described the Demographic Game Design Model (DGD1). This typology survey employed the Myers-Briggs personality categories as a way of linking the gamer personalities to established personality types. The DGD1 was also designed to include online as well as individual gaming experiences. The authors were unsure if a design that focused on personality types was the most effective method of classifying gamer personalities.

Bateman et al. (2011) described the second Demographic Game Design Model (DGD2) as being more tied to temperament than to personality. They made use of Berens Temperament Theory, which they indicated as being closely tied to the Myers-Briggs personality categories. They believed that this would help make the data more generalizable. The new categories described in this typology were called Logistical, Tactical, Strategic, and Diplomatic.

The DGD2 was abandoned, however, in favor of a study that established its own gamer personality measures. Instead of linking the gamer personality archetypes to existing personality or temperament categories, Bateman et al. (2011) described

neurological underpinnings to their new seven factor gamer measure. They named this new quantitative measurement tool “BrainHex.” The BrainHex categories were called Seeker, Survivor, Daredevil, Mastermind, Conqueror, Socialiser, and Achiever. These categories were designed to describe both individual and multiplayer gamers, and were meant to encompass both hardcore and casual gamers alike. Again, the authors indicated this measure as a stepping-stone in designing a comprehensive gamer typology measure. It does, however, provide a useful cornerstone in beginning to understand what exactly draws individuals to the various genres of video games.

### **Fantasy Immersion**

The literature discusses the idea of immersion as being primary in video game player experience (Lankoski, 2011). Achieving immersion would be a driving force for video game designers. Their ability to help to transport the player somewhere else and make them forget they are actually sitting in front of a television screen is their most important challenge. Video games provide an opportunity for the player to develop a personal relationship with the characters whose personality they adopt (Dill & Dill, 1998).

Lankoski (2011) suggested that immersion may not be the only quality necessary for players to transfer their presence into a game. He cited the impact of identifiable characters as being equally critical. Lankoski explained that the most likely contributing factor to a player’s emotional investment in gaming characters has to do with empathy. The construct of empathy, in this context, resonates with existing observations of an individual’s ability to experience other people’s emotions. The ability to feel other people’s feelings, according to Lankoski, goes further than just experiencing a similar

sensation to the emotions we see other people experiencing. The phenomenon of empathy implies that we unconsciously imitate these observed feelings. Lankoski suggested that this goes as far as triggering the areas of the brain associated with smiling.

Lankoski (2011) referenced studies that indicate evidence of individuals feeling the same emotions that they see portrayed in a film. He proposed the next logical step from these studies. If individuals are able to subconsciously experience an emotional connectedness to the emotions they view in a movie, then they likely experience the same phenomenon with video game character experiences. The unconscious relationship between player and character, according to Lankoski, is the same no matter what the genre of entertainment medium. This connectedness allows the player to feel emotions “for” the character that they are portraying in game. The emotional connectedness has to do with the player accepting the goals of their representative character. This process allows emotions and context from the game to become a part of the real emotions of the player. The merging of goals is where the empathic transference process is unique to the video game medium. In other forms of entertainment, Lankoski indicated, the emotional connectedness is only mimicry. In games, the identification with goals creates a linking between player and character.

Jones (2002) blended the themes, characters, and archetypes present in all fantasy stories with the video game medium. Jones focused on the effect of play as a distinguishing characteristic, which separates video games from other forms of fantasy. Many theorists identify the benefits present in exposure to fantasy, but Jones’ suggestion is unique. However, before going deeper into Jones’ theory on the importance of play and fantasy, it is important to consider the general archetypes of fantasy and its benefits.

Jung (1968) and Campbell (1949) have focused on the archetypal imagery present in fantasy that they suggested present a metaphor for the average person's life. Their belief is that the archetypes present in fantasy present embedded blueprints for leading a good life in their symbolic imagery. Jung identified symbols such as The Shadow, which is representative of the inner, and hidden, components to our personality, and The Anima, or the feminine side that exists within men. Campbell shifted some of these symbols to fit into his metaphor of a hero's journey. Campbell identified steps taken by heroes in fantasy, such as meeting a mentor and learning a particular skill or acquiring a weapon. He suggested that these story components are metaphors for the experiences that are common in our day-to-day lives. Vogler (2007) interpreted Jung and Campbell's theory into a formula that can be used in modern storytelling. Vogler identified the archetypal elements presented by Jung and Campbell as being primary in our attraction to fantasy storytelling.

Bettelheim (1976) proposed that fantasy and metaphorical storytelling are useful for human development. He suggested that children are able to transition their magical thinking into more productive factual thinking through fantasy stories. Bettelheim (1976) and Campbell (1949) both draw the conclusion that individuals are able to pull courage and strength from the protagonists in their cherished fantasy stories. Campbell, and later Vogler (2007), identified the components in the heroes' journeys and compare the symbols present to basic human lived experiences. According to all of the above-mentioned authors, individuals who are able to relate to the characters in fantasy stories are able to pull life lessons from the stories. Bettelheim noted this, particularly, with

children who are less experienced in life and so can make better use of the archetypal imagery to subconsciously deal with their struggles.

The archetypes and imagery are the primary vehicles for the transferring of the lessons present in fantasy material (Bettelheim, 1976). Symbolism within fantasy and a connection to the story are the primary components necessary for this method of learning. Jung might describe this transference of information as tapping into the information present in the collective unconscious. According to Bettelheim, the individual is able to understand that although the stories are “unreal, they are not untrue;” and although what the story tells does not happen in life, it should happen as an “inner experience and personal development” (p. 73).

According to Bettelheim (1976) the individual’s focus while experiencing fantasy stories is not a focus on any aspects of the outside world, but a process that goes on within the participant. The individual nature of these experiences means that a single story can have different meanings for anyone who reads it. The combination of individual meaning with globally acceptable archetypes means that fantasy stories are rich with opportunity for unique learning experiences.

An individual’s interpretation of a fantasy story may help the person in building hope according to Black (2003). She noted that any child who can understand the ideas and imagery in a story can transfer the outcomes into their own lived experiences. Given this, the imagery of a hero defeating a monster can be transposed onto the child’s own experience. Vicariously experiencing the battle a beloved hero experiences may help a child to gain strength in their own “battle” with a bully on the school playground.



This ability to individualize the meaning of the story becomes critical in transferring the strength of the archetype into the lived experience. Black (2003) explored this principal through a study, which examined two cases of young women who were able to create equilibrium in their life experiences by relating to fantasy stories. She asserted that there is a difference between reading a realistic adventure story and reading a fantasy adventure. When reading a realistic adventure, one of her subjects was able to experience the adventure and work through the events with the characters. When she finished the story, however, it was concretely finished. In a fantasy story, because of its abstract nature, Black's other subject was able to pull on the themes in varying contexts. Black believed that the archetypal themes found in fantasy stories are able to be transferred over multiple situations, where other, more realistic storytelling, has limits to its transferability. The abstraction allows us to draw simply on the emotions and themes, rather than the specific instances in a more factual story.

Our own lives may mirror the journey, or quest, that many of the heroes depicted in fantasy stories have to undertake. Campbell (1949) suggested that people are able to relate to fantasy stories because they see themselves living, to a lesser degree, the life that the hero lives. The story of the hero usually begins as the hero is living in obscurity leading a difficult life. The hero then comes upon advisors and finds himself or herself able to perform extraordinary feats with his or her newfound knowledge. The hero's every day experiences may not be so different from our own. The identification with the character means that the hero's triumphs are felt by the fantasy consumer and compared to their own life accomplishments. Campbell noted that the individual is able to attain "fantastic" and "unreal" triumphs through his or her exposure to the fantasy. The

triumphs are less about the physical accomplishments described, and more about the psychological rewards that they possess.

Fantasy stories cross demographics, cultures, and forms of media. Through Campbell's (1949) analysis it can be noted that all heroes, no matter their country of origin or specific experiences, share the same common traits. Whether classical or modern, all fantasy stories have the same basic components. Whether purposefully or by a form of serendipity storytellers have identified and used the characteristics that make heroes beloved by so many. These same characteristics also mean the fantasy story is imbued with admirable traits.

The hero's journey is described as having specific steps by Campbell (1949) and Vogler (2007). Every hero starts off as a young boy or girl who leads an ordinary or, more frequently, persecuted existence. As the young hero grows, however, he or she finds ordinary ways to cope with adversities. Around the time of the young hero's teenage years, an old man or woman (often depicted as a wizard) shows the teenager that he or she is in fact someone special and more powerful than the young hero had previously imagined. The teenager is taken to a place where he or she can be taught skills that will help him or her to become a powerful and virtuous champion. The young hero is at this point often given a special weapon (this is usually a weapon that belonged to or was made by one of his or her ancestors). The hero then tries to use his or her newfound knowledge and strength for good, but oftentimes succumbs to ordinary human desires and pays for his or her mistakes. In the end, however, fantasy heroes are always depicted as having learned from their mistakes and have become, in essence, legends.

The average person goes through similar transformative processes in his or her development. The ability to relate, in profound ways, to the character meshes with Lankoski's (2011) research discussing player and character identification in video games. If the gamer is able to empathize with their in game avatar, they may be able to draw strengths from the game characters in the same way that Bettelheim, Campbell, Jung, Vogler, and Black described people as being able to draw strength from fantasy characters.

### **Video Games as the New Fantasy**

Many popular video games contain similar archetypal elements to fantasy appearing in books and movies. Jones (2002) indicated that there are few individuals who would argue with heroes in most forms of media being useful to people. However, he indicated that other professionals see problematic elements to video games as overshadowing any benefits. Jones' assertion, though, is that video games contain the same beneficial and timeless elements as any other forms of storytelling and play.

Jones (2002) pulled together much of the existing theory on the benefits of archetypes and fantasy and shifted to a discussion of fantasy play. He combined Campbell's (1949) theories associated with the archetypes of meaning with Bettelheim's (1976) belief on the importance of fantasy imagery. Jones proposed the next step in the usefulness of fantasy by exploring fantasy play. Jones stressed the importance of fantasy play in children's (as well as adults') ability to make sense of archetypal imagery. He identified the component of play as the child's method of gaining control over his or her own emotional states.

The above-mentioned theories suggest an ability to transfer emotional states and values from fantasy, unconsciously, into the individual recipient. The connection between this literature and the study at hand is whether or not the phenomenon of resiliency is a transferrable trait. Black (2003) and Campbell (1949) asserted that exposure to fantasy heroes instills strengths within a person. The possibility of being able to teach positive characteristics through imagery presents new possibilities to the field of counseling. The question at hand for this study is focused around what sort of personalities and play styles may lend themselves to resilient characteristics.

### **Resiliency**

The construct of resilience has been broadly defined as an ability to recover from negative life events effectively (Tugade & Fredrickson, 2004). However, there is a lack of consensus on aspects of operationalization, variations of terminology, and measurement of key constructs of resilience (Luthar, Cicchetti, & Becker, 2000). Specifically this lack of consensus arises from the use of the terms “resilience” and “ego-resilience.” The term resilience is most appropriately used, according to Luther et al., as encompassing a process that arises when an individual is faced with significant adversity. Ego-resilience is most appropriately used when describing a personal characteristic of an individual. Individuals who have strong levels of ego-resilience would be generally resourceful, sturdy in their character, and flexible in their functioning for varying environmental circumstances. The terms resilience and ego-resilience are used interchangeably in the literature; however this review focuses specifically on the construct described above as ego-resilience, regardless of each study’s choice in terms.

Masten (2001) identified resiliency as being characterized by the “ordinariness of the phenomena” (p. 227). Masten explained that studies on resiliency typically focused on high-risk children, who show signs of resiliency. He indicated that the most fascinating findings about resiliency exist when we peel away all of the aspects of crisis. Masten’s focus on the ordinariness of resiliency led to his conclusion that resiliency is basically a product of basic human adaptational processes. Though no conclusion is offered, the real question posed by Masten is not on the prevalence of these processes, but on what makes them occur.

Fredrickson et al. (2003), similar to Masten, discussed resilience as being developed through basic human adaptational systems. They believe that one of the basic adaptational systems is the ability to experience positive emotions. Fredrickson et al. described literature that suggests resilience may be a reciprocal process with positive emotions. The authors’ belief is that the association between positive affects and resilience may be a relationship that has existed since the creation of the concept of resilience. They pondered whether positive emotional states are a primary building component of resiliency.

Fredrickson et al. (2003) found that individuals who scored high on resiliency scales did feel negative emotional states like their lower scoring peers. However, the individuals scoring high in resiliency experienced positive emotional states intermixed to a greater degree than their lower scoring peers. Fredrickson et al. were able to conclude from their results that positive emotions seem to be a core component in buffering resilient individuals from depression. The ability to, essentially, insulate oneself around

negativity can become particularly important during and immediately following a crisis situation.

The idea that a positive outlook on life fosters resilient qualities in individuals is explored further by Cohn, Fredrickson, Brown, Mikels, and Conway (2009). They stated that positive emotions help to build broad-ranging constructs that may not be immediately helpful to critical life situations. However, these constructs come together over time, and within a person, to create resources that can be a strength to an individual in the future. Cohn et al.'s study not only strengthened the evidence surrounding positive emotions helping to build stronger resiliency measures, but also indicated that positive emotions predict growth better than overall life satisfaction. They indicated that the short-term positive emotional states are what gradually lead to long-term growth. Cohn et al. indicated that living circumstances increases life satisfaction, but does not generate positive emotional states. Further, they indicated that an increase in resilience scores did not require significantly positive change, but higher resiliency was more closely linked with exposure to smaller more basic positive emotional states.

Resiliency seems to come from many positive experiences. Bonanno (2004) discussed how most instances of everyday trauma and loss are dealt with reasonably well by the majority of individuals. Bonanno agreed with the idea that resiliency likely comes from positive life experiences, but made the suggestion that future research ought to focus on how positive life experiences may help in the construction of resiliency.

A resiliency-building program was studied by Bickley-Green and Phillips (2003). They established a coping skills development program that focused on use of play and art as a means of fostering positive thinking patterns in youth. The hope was that children

would develop secondary skills through this program that would get them involved in more positive pursuits than drug and alcohol use that was common in their communities. This study, again, indicates the likelihood of developing resilient life skills as a product of the exposure to otherwise basic positive experiences like play and art.

Studies have attempted to compare the process of resiliency with individual's existing personality traits. Many of these studies have identified the Five Factor (or Big Five Factors) model of personality as a means of measuring personality. The Big Five Factors is the answer to personality psychology's need for a taxonomy of overarching principles and is outlined by John, Naumann, and Soto (2008). These five factors are measurements of neuroticism, extraversion, openness, agreeableness, and conscientiousness. John et al. indicated that the Big Five are generalizable over different samples, and reliable when referenced by different researchers. They pointed out that these five factors paint a broad picture of personality, and as such may miss nuances of personality features. However, according to John et al., a measure of personality that encapsulates this broad of a spectrum also allows individuals to effectively make initial rough distinctions of personality.

A relationship was explored between the Five Factor Model of personality and the construct of resilience (Campbell-Sills et al., 2006). It was found that there was a strong inverse relationship between resilience and the factor of neuroticism. However, there were strong positive correlations between resilience and extraversion and conscientiousness. Extraversion appeared to be linked with resiliency on its own, whereas conscientiousness required the mediating variable of task-oriented coping strategies. There was also a significant (though smaller) correlation between openness

and resilience. The measure of agreeableness was not found to have a significant relationship in either direction with the construct of resilience. Huey and Weisz (1997) had found similar correlations between what they described as the more well adjusted poles of each of the Five Factor personality components. The authors suggested that Ego control and Ego resiliency models may complement personality structures that underlie childhood psychopathology.

Campbell-Sills et al.'s (2006) study presented a unique perspective. Though there was found to be a link between some personality characteristics and resiliency, one personality trait required a mediating factor to completely link it with resiliency. The authors compared their personality variables against two types of coping. These coping methods were delineated by the terms task-oriented coping, and emotion-oriented coping. Conscientiousness was found to be linked with resiliency when mediated by task-oriented coping strategies. Conscientiousness is described as being a hard working style of personality and, according to the researchers, would lend itself well to task-oriented coping strategies.

Coping strategies are frequently tied to the concept of resiliency, and may help in the measuring of resiliency. Fredrickson et al. (2003) discussed the impact of positive emotions on resilience. In their article they described the use of positive emotions as a method of coping with what can be significantly traumatic life events. The implication is that these common methods of coping are what identify people as being more or less resilient.

Bonanno (2004) described coping strategies as the building blocks of resiliency. He referenced a broad spectrum of possible coping methods that individuals may draw



upon to deal with the day-to-day struggles of our lives. This spectrum of coping strategies includes self-enhancement, positive emotions, laughter, repression, and psychological hardiness. Bonanno suggested that resiliency may be much more common than researchers previously believed. He posed that day-to-day coping methods, if effective, can help to make a person resilient.

### **Summary**

This chapter provided a current literature review on the constructs and methodology that supported this study, including an overview of existing research on the gamer culture, information on theories of individual personality, the significance of preferred coping strategies on an individual, and the construct of resiliency. The following chapter will explore the research methodology of this study. This will include information such as participant selection information, operational definitions of the variables including gamer personality type, preferred coping strategy, and resiliency, as well as informed consent and debriefing procedures.

## **CHAPTER III**

### **METHODS**

The purpose of this study is to explore the relationship among individual gamer personality types, preferred coping style, and level of resiliency. The study also considers additional variables such as age, gender, amount of time spent gaming in a week, socioeconomic level, methods of play, and educational level to address any mediating factors in the relationships found among gamer personality, coping style, and level of resiliency.

This study has been designed from the quantitative research frame. This chapter explores the participants, instruments being used, design, procedure with which the study was conducted, statistical measurements, hypotheses, and a summary of the methodology process.

#### **Participants**

The sample for this study was drawn from individuals attending the Penny Arcade Expo (PAX) East Convention in Boston, Massachusetts. PAX East is the largest venue focusing on the gamer community on the east coast of America and provides a strong representative sample of hardcore, hobbyist, and casual gamers. The participants were solicited through a booth set up in the lobby of the convention. A small pin indicating participation is the only incentive offered to participants in this study. An informed consent document was used to inform participants of their right to withdraw from the study at any time with no penalty.

Inclusion criteria for participation in this study included that participants be 18 years of age or older; reported a minimum average of one hour per week of video game

play; and identified themselves as a gamer. Kallio, Kaipainen, and Mäyrä (2007) used a similar restrictive sampling when testing the gamer typology measure of their design. Previous studies using the BrainHex (Bateman et al., 2011) typology survey have also made use of a restrictive population of self-identified gamers.

The PAX East development group, ReedPop, provided space at the PAX East convention for this research (Appendix G). Given the seven categories present in the BrainHex survey, a large population was necessary to presume variance. The minimum acceptable sample for any individual BrainHex category was determined to be 20 participants. Having estimated the impact of gamer type on coping skills to be large, a minimum of 20 participants would be necessary in each gamer personality class to attain a Power equivalent to 75% or greater. The largest reported sample size (Appendix H) for the BrainHex survey was 50,422 participants. The smallest sample represented in that population was reported to be 2,931 individuals. The equation proposed for determining the minimum number of participants was as follows  $(N * 20) / c$ , where “N” represents the largest available BrainHex sample size and “c” represents the smallest category represented within that sample. Given this equation, it was determined that the minimum number of participants necessary for this study would be 345 individuals.

### **Instruments**

Gamers, for the purpose of this study, were defined as individuals who self-identified as a gamer. However, much like any other population, it is presumed that there are differences, which exist even among self-identified gamers. Bateman et al. (2011) identified approximately five different typology measures designed to understand gamer personality types. Many of these studies were designed to examine specific types of

game play, such as online gaming, or multiplayer gaming. The BrainHex Gamer Typology Survey (BrainHex) was chosen because it was reported to have no preconceived restrictions for method of game play (Bateman et al., 2011). The purpose of BrainHex is to measure a respondent's gamer personality type irrespective of his or her platform of choice.

BrainHex is made up of two rating groups. The first rating group consists of 21 statements that define experiences an individual may encounter in most video games. Examples of these statements include "Hanging from a high ledge" and "Feeling relief when you escape to a safe area" with each of these statements being tied to a letter that is representative of the typology that the question represents. The participant reads each statement and ascribes a check mark on a corresponding score sheet under a numerically designated column. The choices include "I Love It," "I Hate It," and "It's Okay" which are scored as a "+1," "-2," and "+0," respectively, when calculating the sum of each of these responses for each set of questions representing one of the seven BrainHex personality types.

The second BrainHex rating group is a set of seven statements that the participants are to rank order from six, being "the best," to zero, being "the worst." Each of these seven statements corresponds to an associated gamer personality category. These numbers are then added to the previous rating group scores to create a numeric representation for each gamer personality category. The seven personality categories are denoted as "Seeker," "Survivor," "Conqueror," "Daredevil," "Mastermind," "Socialiser," and "Achiever." Though an individual may enjoy playing many different types of games,

the personality category with the highest score is considered the individual's primary gamer personality type.

According to Nacke et al. (2011), an individual's primary gamer personality can be categorized with an alternative interpretation between one of two gamer preference categories. These two categories are described as "Fight-or-Flight Play" and "Experiential Play." The authors explained that Fight-or-Flight players are described as Conqueror, Mastermind, and Daredevil personality types. These gamer personalities are characterized by a greater prevalence of "thinking" responses in the BrainHex survey. Similarly Experiential players are described as the Seeker, Survivor, Socialiser, and Achiever personality types. These gamer personalities are typically characterized by more "feeling" preferences in the BrainHex.

According to Bateman et al. (2011), BrainHex was based upon two previous gamer typology measures. The Demographic Game Design Model version 1 (DGD1) was developed as a method of classifying gamer personality types by linking them with Myers-Briggs personality typology (Bateman & Boon, 2005). The next evolution of this gamer typology measure was the Game Design Model version 2 (DGD2). This version focused on a link between gamer personality types and temperament rather than gamer personality types with psychology personality types. This was a reasonable shift as the Berens measure of temperament was used. According to Bateman et al., the transition between personality types and temperament was made easier because the Berens measure and the Myers-Briggs have similar foundations.

BrainHex was developed as an evolution of these two previous (DGD1 and DGD2) measures. Bateman et al. (2011) proposed a further evolution of their gamer

typology measure, which now focuses on neurobiological archetypes in order to move toward a more robust measure of gamer typology. Rather than use existing measures of personality and temperament, Bateman et al. proposed that gamer typology should move toward the neurobiological underpinnings of player personality factors and away from pre-existing psychometric measures. BrainHex is also considered to be more robust than other gamer typology measures because it is inclusive of experiences that may be encountered in all types of games. This varies from other gamer typology measures as previously instruments focused on specific types of gaming such as online multiplayer games, single player adventure games, consoles, or personal computers. Descriptive statistics from the 50,000 participant sample used to norm the BrainHex are provided in Appendix H.

The Coping Strategies Inventory–Short Form (CSI-SF; Addison et al., 2007) was used to measure a participant’s preferred method of coping. The CSI-SF was designed to measure an individual’s propensity toward one of four methods of coping (i.e., “Problem-Focused Engagement,” “Problem-Focused Disengagement,” “Emotion-Focused Engagement,” and “Emotion-Focused Disengagement). These four categories are considered “Second Tier Coping Measures.” Each of these categories is made up of a combination of two of what are considered the eight “First Tier Coping Measures.” These eight primary measures are designated as “Problem Solving,” “Cognitive Restructuring,” “Express Emotions,” “Social Supports,” “Problem Avoidance,” “Wishful Thinking,” “Self Criticism,” and “Social Withdrawal. Each of these eight First Tier Coping Measures is made up of two of the 16 questions in the CSI-SF.

The CSI-SF employs 16 statements related to coping that individuals score by circling one of the responses on a five point Likert scale. Examples of the coping statements include “I make a plan of action and follow it,” and “ I hope for a miracle.” The five point Likert scale records the frequency with which the participant feels they make use of each coping statement. The Likert scale numbers and options are 1 = *Never*; 2 = *Seldom*; 3 = *Sometimes*; 4 = *Often*; and 5 = *Almost*. The 16-item survey is made up of two questions each of the First Tier Coping Measures. Aside from the above-mentioned First Tier Coping Measures, and the Second Tier Coping Measures (i.e., “Problem-Focused Engagement,” “Problem-Focused Disengagement,” “Emotion-Focused Engagement,” and “Emotion-Focused Disengagement”), the CSI-SF can also be used to measure what are considered Third Tier Coping Measures, which are called simply “Engagement,” and “Disengagement.” The Third Tier categories are made up of four each of the First Tier measures, which allows for a comprehensive understanding of an individual’s coping preferences. These categories are described in Appendix J. Higher scores on each question represent a stronger relationship to the factor the question represents.

The CSI-SF was modified from the original Coping Strategies Inventory developed by Tobin, Holroyd, Reynolds, and Wigal (1989) and was found to have strong reliability and validity measures, despite a less than lengthy set of questions. Permission was given to use this short form measure by the principal investigator of the research group that adapted the original Coping Strategies Inventory into the CSI-SF, Clifton Addison (Appendix I). Reliability coefficients (Cronbach’s alpha) were calculated for each of the four coping scale measurements (problem-focused engagement, problem-

focused disengagement, emotion-focused engagement, and emotion-focused disengagement) and showed marginal to acceptable levels of internal reliability (alpha = 0.58–0.72). Addison et al. (2007) indicated that the CSI-SF fit indices indicate an adequate and reliable measure of coping.

A Chi-Square test was used to measure the relationship of the four factors of coping represented in the CSI-SF. According to Addison et al. (2007), relationships of these factors were found to be significant  $\chi^2(78) = 1455.9406, p < 0.0001$ . Confirmatory factor analysis produced a Root Mean Square Residual (RMSR) of 0.05 and Root Mean Square Error of Approach (RMSEA) of 0.06. It is noted that  $<0.08$  is indicative of a sound model fit. PGFI and PNFI were reported as 0.76 and 0.66, respectively. These scores indicate that the questions on the CSI-SF actually correlate well with the proposed constructs of coping strategies and so support the measures validity.

The final measure used in this study is the ER-89 Ego Resiliency Scale (Appendix D), which was developed by Block and Kremen (1996). The ER-89 is used to measure resiliency by assessing an individual's management of fluctuations that occur in day-to-day life. The ER-89 consists of 14 questions associated with daily functioning, such as "I quickly get over and recover from being startled." Each question is associated with four possible responses which are 1 = *Does not apply*; 2 = *applies slightly, if at all*; 3 = *applies somewhat*; or 4 = *applies very strongly*. A response of 1 represents a low resiliency and a response of 4 represents a high resiliency. Thus the maximum possible score is 56 and the lowest is 14. A high score indicates a higher level of resiliency and a low score indicates a lower level of resiliency.



The ER-89 does not have a metric to identify low, medium, and high levels of resiliency. In order to compare Resiliency Levels in this study the means of several other studies were explored. In this way, the sample population of this study can be compared to this existing data.

In a study completed by Al-Naser and Sandman (2000), the ER-89 was used in order to determine resiliency patterns across variables among individuals who had suffered trauma in Kuwait. The Mean resiliency scores were calculated by using a tertile grouping method that separated participant scores into groups that were identified as low scores and then two groups labeled as high scores 1 and 2. These groups were then compared lowest against highest in order to establish a score that took into consideration the overall span of scores. In this study the Low Group indicated a Mean ER-89 score of 34.73, High Group 1 had a Mean of 45.96, and High Group 2 indicated a Mean score of 46.62. The groups were then sorted, and the Mean scores were recorded for specific variables. The Gender variable in Al-Naser and Sandman's study had ER-89 scores of 41.15 for Males, and 39.66 for Females. The Family Type variable indicated scores of 41.34 for Extended Family types, and 40.04 for Nuclear Family types. Type of College attended was also a variable of interest in this case, and indicated scores of 39.95 for Schools of Art and 41.06 for Schools of Science. The Marital Status variable had recorded scores of 40.58 for Single participants, and 40.60 for Married participants. In comparing this study's Mean Resiliency score across all of the reported scores in Al-Naser and Sandman's study, the Mean score of this study (44.19) compares well, and falls in line with the higher group scores recorded in this other study. It also tends to fall

as comparable or higher than many of the other Mean resiliency scores when comparing to specific variable groups in Al-Naser and Sandman's study.

Holmes (2013) completed a study that compared resiliency scores against participant stress levels as a function of participant race. In this study, Mean Resiliency scores were indicated through Caucasian participants as 41.97, African American as 43.21, and Hispanic/Latino as 43.71. These scores were identified as being "high" resiliency scores in this study as well. There was one other study by J. L. Moore, Linnville, and Segovia (2013) that focused on resiliency and hardiness in repatriated prisoners of war and identified resiliency scores. The Mean Resiliency score in this study was identified as 46.1, and was again indicated to be a high resiliency score.

### **Procedure**

Volunteers interested in participating in this research were provided an informed consent document (Appendix E) detailing the background of the study and instructions on participation, including the participant's right to withdraw from the study at any time and with no consequence.

After the volunteer signed the informed consent document, it was stored in a separate container from the test sample packets. Each subject was offered a copy of the informed consent document for his or her own records. Once the signature page was secured, the participants were given the data collection packet which consisted of a brief demographic survey page (Appendix A) which asked for the participant's age, gender, education level completed, whether he or she identified as a gamer, which platforms were used in game playing (i.e. PC/Laptop, Microsoft Xbox, Sony Playstation, Nintendo Wii, etc.), estimated annual income, and estimated number of hours spent playing games per

week. The second portion of the data collection packet was the BrainHex gamer typology inventory (Appendix B) consisting of a series of Likert scale questions, and a numbered response scale to measure gamer personality traits. The third component of the data collection packet was the Coping Strategies Inventory Short-Form (Appendix C), which consisted of 16 items designed to measure an individual's level and method of coping. The final component of the data collection packet was the ER-89 Ego Resiliency Scale (Appendix D) consisting of 14 questions associated with how an individual deals with daily life struggles and is designed to be a measure of a person's level of resiliency. The entire packet took participants approximately 10 minutes to complete.

Once the data collection packet was completed the participant handed it back to me and it was stored in a separate container from the informed consent forms. The participant was then given a debriefing document (Appendix F) that explained, again, the purpose of the study, how the data were to be used, further details about the hypothesis of the study, and a method to receive information about the study once it has been completed. This concluded the study's data collection procedures.

### **Data Analysis**

The data collected in this study were used to determine if there is a relationship between the seven gamer personality types and participant's preferred method and level of coping. The first step considered in statistical design was a report of the means and standard deviations recorded by the participant demographic questionnaire. These included descriptive statistics for participant age, gender, education level completed, whether he or she identified as a gamer, which platforms were used in game playing, estimated annual income, and estimated number of hours spent playing games per week.

There was also a report of the prevalence of each type of gamer personality and coping method. An Analysis of Variance (ANOVA), pairwise, and post hoc comparison was run on the demographic variables with gamer types and coping methods. This within and between groups comparison helped to discern the above mentioned demographic variables impact on gamer personality, coping styles, and resiliency.

A participant's individual BrainHex category (Seeker, Survivor, Conqueror, Daredevil, Mastermind, Socialiser, or Achiever) was compared to the first, second, and third tier coping scale from the CSI-SF (Problem-Focused Engagement, Problem-Focused Disengagement, Emotion-Focused Engagement, and Emotion-Focused Disengagement) and the individual's resiliency level. The Chi Square test is a non-parametric statistical analysis, which means that, unlike a parametric test, the categories being measured do not have to have a numerical value associated with them (Gravetter & Wallnau, 2009). The gamer personality measures are easier represented in category form, rather than the associated numeric values that corresponds with the categories. In this way a nonparametric test, like the Chi Square test, is a better fit for this analysis. The Chi Square helped to determine if certain levels of resiliency and methods of coping have a higher proportion of specific gamer types than would be expected by chance.

One of the benefits to the BrainHex survey is that its seven-category system can be measured using an alternative two-category system. In the event that a sufficient number of participants were not reached, this provided an alternative method of analysis. The statistical analysis for the two-category measure would be completed in the same way as the seven-category system. A Chi Square test could have been used to compare the two variables of gamer personality (Thinker or Feeler) to the four-second tier styles of

coping (Problem-Focused Engagement, Problem-Focused Disengagement, Emotion-Focused Engagement, and Emotion-Focused Disengagement), and the individual's resiliency score.

In both of these cases, if significant findings from the Chi Square test were observed, Cramer's measure of association would be used to compare the BrainHex category (Seeker, Survivor, Conqueror, Daredevil, Mastermind, Socialiser, or Achiever) with the first tier coping scores (engagement and disengagement). This would result in two specific correlations being compared (BrainHex X Emotion or Problem Focused Coping and BrainHex X Engagement or Disengagement). This would help determine the relationship that gamer personality type and coping styles have to one another.

### **Hypotheses**

1. Individual gamer personality types will be related to specific types of coping and levels of resiliency.
2. Individuals with the Gamer Personality Types of "Mastermind," "Conqueror," or "Daredevil" will prefer problem oriented coping styles.
3. Individuals with the Gamer Personality Types of "Seeker," "Survivor," "Socialiser," and "Achiever" will prefer emotion oriented coping styles.

### **Summary**

This chapter has focused on the exploration of gamer personality measures and their relationship to individuals' methods of coping and resiliency. The planned procedures in the study, participant demographics, method of data analysis, and hypotheses were also described. Method of data collection, and the background of the instruments were also reported.

## **CHAPTER IV**

### **RESULTS**

The purpose of this study is to explore the relationship among individual gamer personality types, preferred coping style, and level of resiliency. This chapter reports the results of the statistical analysis of the data. Data packets including a participant demographic questionnaire, gamer personality inventory, coping strategies inventory, and resiliency test were obtained from participants who volunteered their information at the Penny Arcade Expo (PAX) East 2013 event in Boston Massachusetts.

#### **Hypotheses**

1. Individual gamer personality types will be related to specific types of coping and levels of resiliency.
2. Individuals with the Gamer Personality Types of “Mastermind,” “Conqueror,” or “Daredevil” will prefer problem oriented coping styles.
3. Individuals with the Gamer Personality Types of “Seeker,” “Survivor,” “Socialiser,” and “Achiever” will prefer emotion oriented coping styles.

#### **Demographic Information**

The participants in this study were volunteers who were attending the Penny Arcade Expo (PAX) East 2013 gaming convention. Though 496 data packets were completed, 23 of these packets were missing information in at least one of the metrics and were thus considered invalid, leaving the total number of available participants at  $N = 473$ . Participants’ ages ranged from 18 to 59 years, with a Mean age of 26.72. Additional participant demographic information is represented in Tables 1 and 2.

Table 1

*Participant Demographic Information*

	Percent of Participants
<b>Gender</b>	
Male	66%
Female	31%
No Response	3%
<b>Gamer Identification</b>	
Identifying as Gamer	92%
Not Identifying as Gamer	6%
No Response	2%
<b>Race</b>	
Black / African American	4%
Hispanic	6%
Caucasian	78%
Asian	8%
Other	4%
<b>Educational Level</b>	
Some High School	1%
High School Graduate	9%
Some College	31%
College Graduate	38%
Some Graduate School and beyond	19%
<b>Socioeconomic Level</b>	
< \$20,000	31%
\$20,000–\$30,000	20%
\$30,000–\$40,000	12%
\$40,000–\$50,000	7%
\$50,000–\$60,000	9%
\$60,000–\$70,000	5%
\$70,000–\$80,000	5%
> \$80,000	11%
<b>Time Spent Gaming</b>	
1-5 hrs.	12%
6-10 hrs.	27%
11-15 hrs.	21%
16-20 hrs.	16%
> 20 hrs.	24%

Note.  $N = 473$

<sup>a</sup>The Other category, under Race, includes variable options that contained less than 10 participants. Platforms that were combined into this category were American Indian, Egyptian, Indian, Middle Eastern, Pacific Islander, Bi Racial Hispanic, Bi Racial Asian, Bi Racial Non Specific, Filipino, and Arabic.

Table 2

*Gaming Platform Preference Demographics*

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	Percent of Participants
<b>Gaming Platforms</b>	
PC	83%
Steam	64%
Original Xbox	19%
Xbox 360	60%
Original Playstation	18%
Playstation 2	30%
Playstation 3	48%
Playstation Portable	14%
Playstation Vita	12%
Original Nintendo	3%
Super Nintendo	2%
Nintendo 64	4%
Nintendo Gamecube	20%
Nintendo Wii	37%
Nintendo WiiU	11%
Nintendo DS	13%
Nintendo 3DS	15%
TableTop Games	4%
Android	4%
Apple iPhone	5%
Other	11%

---

<sup>a</sup> Items in the Gaming Platforms variable group were not mutually exclusive and so percentages identified total greater than 100%.

<sup>b</sup>The Other category, under Gaming Platforms, includes variable options that contained less than 10 participants. Platforms that were combined into this category were Nintendo GameBoy, Nintendo GameBoy Color, Nintendo GameBoy Advance, Sega Master System, Sega Dreamcast, Atari, NeoGeo, Board Games, Emulators, Other Vintage, Tablet, Apple iPad, Windows 8, Other Mobile, Flash Games, Intellivision, and Linux.

**Hypothesis One**

The first hypothesis considered in this study was:

1. Individual gamer personality types will be related to specific types of coping and levels of resiliency.



## **Personality and Coping Strategy**

In order to address this hypothesis, coping strategies were explored using the Coping Strategies Inventory–Short Form (CSI-SF). This metric allows for several ways in which to measure coping strategies. Tier One coping strategies are identified in the CSI-SF as being basic components to what are more complex concepts among coping strategies. Specific Tier One coping strategies are combined to make up Tier Two coping strategies. Likewise, Tier Two Coping Strategies are combined to make up Tier Three coping strategies. As an example, Problem Solving and Cognitive Restructuring are two Tier One coping strategies. The scores associated with these Tier One coping strategies can be added together to ascertain an individual’s level of Problem Focused Engagement coping, which is a Tier Two coping strategy. If an individual’s scores on Problem Focused Engagement and Emotion Focused Engagement (both Tier Two coping strategies) are combined, then the individual’s overall Engagement coping level (Tier Three coping) can be ascertained.

The design of this study was to explore Tier Two coping strategies primarily, with an option to explore Tier Three coping strategies if needed. Tier Two coping strategies were chosen because the literature more closely aligns with the categories (i.e., Problem Focused Engagement, Problem Focused Disengagement, Emotion Focused Engagement, and Emotion Focused Disengagement) identified in this tier of the CSI-SF. Tier Three coping strategies were identified as being a reserved option in case the study sample was too small to presume variance among groups at the Tier Two coping level. However, a complication arose when exploring the Tier Two groups. It was observed that some participants did not fall into a mutually exclusive category of coping, but instead scored

equally among multiple groups. As a result of this grouping, discriminate validity was too low for statistical comparisons. The clusters were identified as “Multi-Strategy Coping” for the purpose of organization in this study. The percentages of participants divided by groups are represented in Table 3. The Multi-Strategy group was considered for statistical analysis as its own group in this study; however the literature does not support a multi-strategy option. Since the multi-strategy group diverges from the literature, the Tier One and Tier Three coping strategy options were considered for analysis. Tier Three coping groups, because of their focus on Problem Focus versus Emotion Focus and Engagement Focus versus Disengagement Focus were used because these were more closely aligned with previous studies than the structure of Tier One coping strategies.

Table 3

*Coping Strategies Group Percentages*

	Percent of Participants
Tier Two Coping Strategies	
Problem Focused Engagement	37%
Emotion Focused Engagement	18%
Problem Focused Disengagement	4%
Emotion Focused Disengagement	25%
Multi-Strategy Coping	16%
Tier Three Coping Strategies	
Engagement Focused	67%
Disengagement Focused	30%
Engagement/Disengagement Equal	3%
Problem Focused	38%
Emotion Focused	55%
Problem/Emotion Equal	7%

For Tier Three coping strategy comparisons, BrainHex Personality Types were compared to both Problem versus Emotion Focused coping, and Engagement versus Disengagement Focused coping styles using Chi Square equations. In the first comparison it was found that use of an Engagement versus Disengagement coping style did not statistically vary based on BrainHex personality type ( $\chi^2 (12) = 8.298, p = .761$ ). The Chi Square is represented in Table 4. Percentages were calculated in order to determine if any non-significant but observable trends were present when comparing coping strategies to personality types. This comparison is represented in Table 5.

Table 4

*Engagement Versus Disengagement Focused Coping Compared to Personality*

	Chi-Square Tests Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.298 <sup>a</sup>	12	.761
Likelihood Ratio	8.888	12	.712
Linear-by-Linear Association	1.074	1	.300
N of Valid Cases	473		

<sup>a</sup>7 cells (33.3%) have expected count less than 5. The minimum expected count is .36.

Table 5

*BrainHex Comparisons to Coping Strategies*

BrainHex	Problem	Emotion	Percent of Participants			
			Equal	Engage	Disengage	Equal
Seeker	36%	58%	6%	72%	27%	1%
Survivor	30%	67%	3%	56%	37%	7%
Socializer	43%	52%	5%	61%	34%	5%
Achiever	38%	50%	12%	64%	34%	2%
Daredevil	40%	50%	10%	80%	20%	0%
Mastermind	33%	61%	6%	69%	27%	4%
Conqueror	48%	45%	7%	64%	31%	5%

BrainHex personality types were then compared to Problem versus Emotion Focused Coping styles. The Chi Square is represented in Table 6. It was noted that coping style did not statistically vary based on personality type ( $\chi^2(12) = 11.956, p = .449$ ). Hypothesis One was not supported, as there is no clear link between specific personality types and specific coping strategies. Percentage of individuals identified by their coping style were calculated for each of the personality types and represented in Table 5.

Table 6

*Problem Versus Emotion Focused Coping Compared to Personality*

	Chi-Square Tests Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.956 <sup>a</sup>	12	.449
Likelihood Ratio	11.682	12	.472
Linear-by-Linear Association	.371	1	.543
N of Valid Cases	473		

<sup>a</sup>5 cells (23.8%) have expected count less than 5. The minimum expected count is .74.

## **Personality and Resiliency**

The ER-89 Ego Resiliency Scale has a minimum score of 14 and a maximum possible score of 56. This sample yielded a Mean resiliency score of 44.19. The Median for this sample was found to be 44, and the Mode was found to be 46. The similarity between all three of the measures of central tendency, and particularly between the Mean and the Median, suggests that there are few outliers in this sample.

Unfortunately, as was mentioned in the discussion of instruments, there are no recorded normed descriptive statistics for this test. The ER-89 assumes that lower numbers on the scale would indicate a person had lower levels of resiliency; consequently higher scores indicate higher levels of resiliency. In order to get a better understanding of how this study's sample fared with regard to resiliency, a different comparison would have to be completed. The Mean resiliency score of this sample was compared to several other studies that had used the ER-89 and reported sample Means.

The Mean score for the two high level groups in Al-Naser and Sandman's (2000) study were 45.96 and 46.62. These scores were able to be classified as "high" because of Al-Naser and Sandman employing a tertile grouping method. In this way resiliency scores were broken separated into groups of "low," "medium," and "high" scores, with these scores falling into the high resiliency group. Holmes' (2013) study indicated Caucasian participants had a Mean score of 41.97, African American participants as 43.21, and Hispanic/Latino participants as 43.71. These scores were compared through test-retest reliability and was found to be  $r = .78$ , and the internal reliability was  $\alpha = .72$ . Lastly, the study completed by J. L. Moore et al. (2013) indicated a Mean Resiliency score of 46.1. This was also identified as being a high resiliency score by comparing

internal consistency of the ER-89 with their current sample against the internal consistency of another test of resiliency with known norms, the Bond Ego Resilience Scale. The internal consistency of the ER-89, as determined through a Cronbach's Alpha, was 0.78, and from the Bond Ego Resilience Scale was 0.76. These sample studies provide indicators of what has been identified as high levels of resiliency, and are congruent with the current study's Mean resiliency score of 44.19.

A Median Test was performed to determine if there was a relationship between Gamer Personality Types and Resiliency. The results are provided in Table 7. A Median test was used in order to determine if an individual's BrainHex personality type was in any way predictive of their resiliency score. The Median score for this population was found to be 44. When the Median was compared across personality types it was not found to be significant,  $\chi^2 = 2.496$ ,  $p = .869$ . Cramers V is useful in providing information about the strength of an association, but is not impacted by sample size and can be used when any significant relationship may be the effect of a large grouping of participants rather than a substantive relationship. A Cramer's Measure of Association was conducted in order to determine the relationships between BrainHex and Resiliency. The test indicated Cramer's  $V = .073$ . This means that, by squaring Cramer's V, an individual's BrainHex personality type was only 0.5% predictive of their resiliency score. This does not support Hypothesis One, that personality type would be predictive of resiliency levels.

Table 7

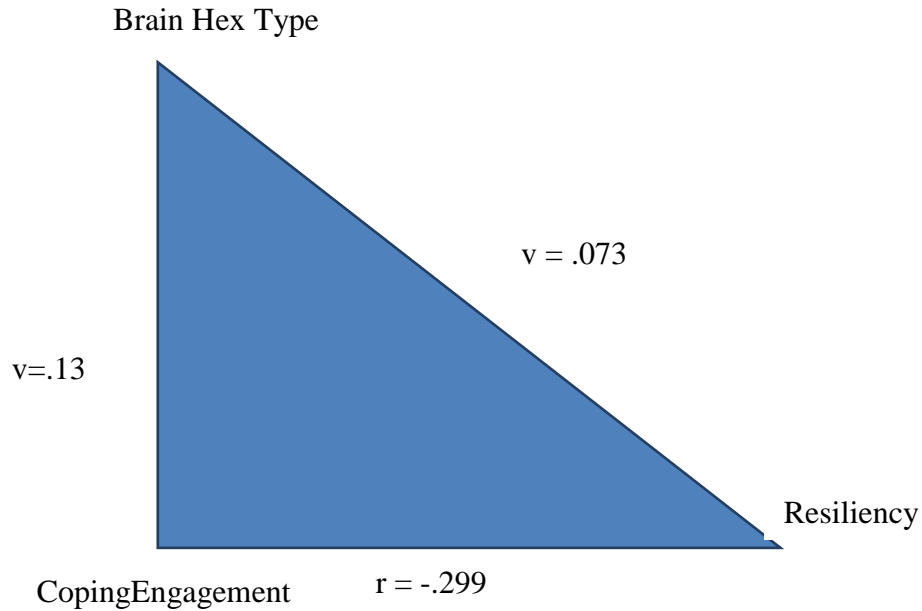
*BrainHex Comparisons to Resiliency Median Test*

	Percent of Participants						
	Seeker	Survivor	Socializer	Achiever	Daredevil	Mastermind	Conquerer
Resiliency > Median	9%	2%	4%	7%	2%	16%	9%
Resiliency ≤ Median	8%	3%	5%	6%	1%	17%	11%

**Mediation Effect**

Multiple regressions were used to help in determining if an individual’s coping style was a mediator for any relationship that may exist between a gamer’s personality type and their level of resiliency. Multiple regression equations were calculated for both Problem and Emotion Focused Coping and Engagement and Disengagement Focused coping.

In a Mediation Analysis the independent variable is compared to the dependent variable while taking into account a third mediating variable. In this case the triangle created by this Mediation Analysis (Figure 1) first took into account the relationship between BrainHex Type and Engagement versus Disengagement Coping, which was not found to be a significant relationship ( $\chi^2(12) = 8.298, p = .761$ ). A Cramers V Association analysis was completed to better understand the strength of the relationship between BrainHex Type and Engagement Coping for the purpose of exploring mediation. It was found that BrainHex had minimal predictive power for Engagement Coping,  $V = .132$ . Second, BrainHex Types ability to be predictive of resiliency was calculated



*Figure 1. Mediation Analysis Engagement vs. Disengagement Focused Coping*

through a Median Test. It was found that BrainHex Types were not highly predictive of resiliency,  $\chi^2(6) = 2.496, p = .869$ ; Cramer's  $V = .073$ . Shared variance with regard to this Median Test was .5%. Finally a Point Biserial Correlation was used to determine the relationship between Engagement Coping and Resiliency. It was found that there was a moderate negative relationship between this method of coping and Resiliency,  $r = -.299, p < .01$ . After these relationships were explored individually a Multiple Regression was used to determine whether Engagement Coping was more predictive of the relationship between Personality Type and Resiliency than was found between this relationship alone. Engagement versus Disengagement oriented coping predicts 8.9% of resiliency ( $Y = 48.06 + .01(\text{BrainHex}) - 2.85(\text{Coping}), R^2 = .09$ ). The change in  $R^2$  is .01. The Multiple Regression model predicted 9% of Resiliency. This represents a 0.01% change in  $R^2$ .



Therefore, this incremental change does not significantly explain more variance in resiliency.

Similarly, the triangle created by the second Mediation Analysis (Figure 2) began with an exploration of the relationship between BrainHex Type and Problem versus Emotion Focused Coping (may require further stats). Cramers V was used to understand the relationship between variables. Similarly to the first Coping versus BrainHex analysis, it was found that BrainHex was not predictive of Problem Focused Coping, ( $\chi^2(12) = 11.956, p = .449$ ). Cramers V was again calculated in order to understand the strength of the relationship, and was found to be  $V = .112$ , which is not a strong correlation. The Median Test which explored BrainHex Types' ability to be predictive of resiliency was taken into account. BrainHex Types were not actually predictive of resiliency,  $\chi^2(6) = 2.496, p = .073$ . Shared variance with the Median Test was .5%. Lastly a Point Biserial Correlation was used to determine the relationship between Problem Focused Coping and Resiliency. There was not a significant relationship between Problem Focused Coping and Resiliency,  $r = -.052$ . A Multiple Regression was used to determine if Problem Focused Coping was more predictive of the relationship between Personality Type and Resiliency than was found among these variables alone. The multiple regression calculated for Problem versus Emotion Focused Coping indicated the predictive variables explained .1% of variance ( $Y = 45.12 - .04(\text{BrainHex}) - .46(\text{Coping})$ ,  $R^2 = .01$ ). Change in  $R^2$  from a straight prediction was .003. This was not a significant amount of variance explained by the interaction of Gamer Personality and, in this case, Problem Focused Coping. There is no mediating effect, with regard to coping strategy, for the relationship between Gamer Personality and Resiliency.

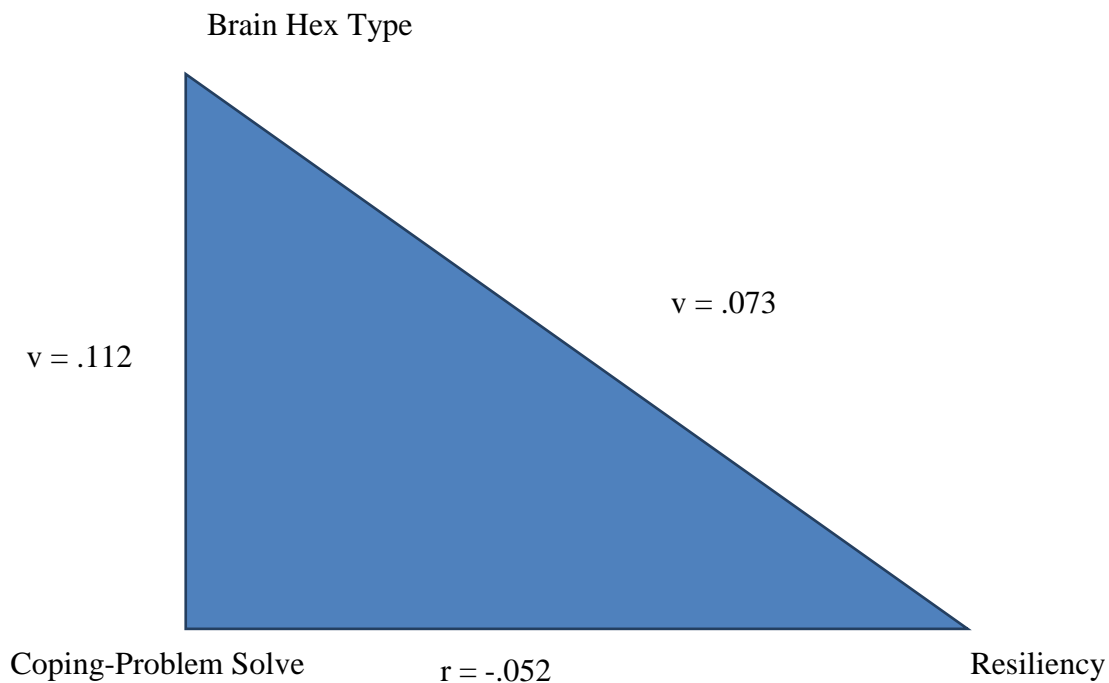


Figure 2. Mediation Analysis Problem vs. Emotion Focused Coping

## Hypothesis Two

The second hypothesis considered in this study was:

2. Individuals with the Gamer Personality Types of “Mastermind,” “Conqueror,” or “Daredevil” will prefer problem oriented coping styles.

BrainHex personality types were compared to Problem versus Emotion Focused Coping styles through the use of a Chi Square. It was noted that coping style did not statistically vary based on personality type ( $\chi^2(12) = 11.956, p = .449$ ). However, percentages were calculated to note if any trends arose among the personality and coping style data. These percentages are shown in Table 1. It was observed that 48% of individuals in the Conqueror personality group preferred Problem Focused Coping styles.

This was 3% larger than the Conqueror personality types who preferred the Emotion Focused style. Mastermind and Daredevil personality types had greater preferences toward Emotion Focused Coping styles. Given this information, the data did not provide significant support to this hypothesis.

### **Hypothesis Three**

The third hypothesis considered in this study was:

3. Individuals with the Gamer Personality Types of “Seeker,” “Survivor,” “Socialiser,” and “Achiever” will prefer emotion oriented coping styles.

BrainHex personality types were compared to Problem versus Emotion Focused Coping styles through a Chi Square. As was mentioned in the previous hypotheses coping style did not statistically vary based on personality type ( $\chi^2 (12) = 11.956, p = .449$ ). Percentages as represented in Figure 1 did show a slight trend of Seeker (58%), Survivor (67%), Socialiser (52%), and Achiever (50%) personality types having slightly greater preferences toward Emotion Focused Coping styles. Although the lack of a clear relationship does not support this hypothesis, the observation of these trends is noteworthy.

### **Summary**

Many of the descriptive statistics and measures of central tendency provided noteworthy information about the Gamer Culture. The BrainHex personality types are a window into player motivation. Trends observed with the Tier Two and Tier Three Coping Strategies offer unique considerations for the field. High levels of resiliency and consistency among these scores present implications that were not previously considered. However, given the data presented there was no indication that Gamer Personality Types

were predictive of preferred methods of coping. It was also noted that neither Personality Type nor Coping Strategy was very predictive of Resiliency scores. This data in mind, all three of the hypotheses for this study were rejected.

## **CHAPTER V**

### **DISCUSSION**

This chapter provides an exploration of the research findings. The discussion section investigates the results of the study. The conclusion section compares current findings to past research. The chapter then considers implications and limitations with the study. Finally a discussion on recommendations for future research concludes the chapter.

#### **Findings**

The study explored data collected at the Penny Arcade Expo (PAX) East gaming convention in March 2013 in Boston, Massachusetts. Data were gathered by volunteers at the convention using a test packet consisting of a demographic questionnaire, the BrainHex Gamer Personality Test, the Coping Strategies Inventory Short Form (CSI-SF), and the ER-89 Ego Resiliency Test. Data gathered in this study were considered through the three following hypotheses.

#### **Hypothesis One**

1. Individual gamer personality types will be related to specific types of coping and levels of resiliency.

This study was the first of its kind to consider multiple psychological variables when exploring the gamer culture. Given the lack of scholarly articles exploring the positive psychological effects of this culture, there was little direction on which of the variables discussed in the extant gaming literature should be considered. Based on studies related to the relationships among general personality types, coping strategies,

and resiliency, this study focused on the presumption that these relationships also existed in the gaming culture.

Bonanno (2004) found that coping strategies were related to an individual person's resiliency. Cohn et al. (2009) also identified coping strengths and positive attitude as being related to the development of resiliency in individuals. However, in the current study's population there was no significant relationship discovered with regard to a person's primary coping strategy and that person's resiliency. The lack of a relationship could be related to the method for delineating coping strategies in the CSI-SF. This metric has a tendency to capture whatever coping strategies that a person may use, meaning that each indicated coping strategy is not necessarily mutually exclusive. The CSI-SF's focus on understanding coping with a lack of mutually exclusive categories makes it a useful clinical tool, but may have complicated the analysis. As an adaptation, this study was able to use the CSI-SFs Tier Three coping levels, as they also have a connection to the literature. Tier Three coping methods (Problem Focus, Emotion Focus, Engagement Focus, and Disengagement Focus) are the building block components of Tier Two coping methods (Problem Focused Engagement, Emotion Focused Disengagement, etc.). The literature focuses on the compounds of Tier Two coping methods relationship with specific personality types rather than these building blocks, but as the components they are still related to existing literature.

Gamers, as a culture, have not been explored as thoroughly in the literature as other cultures. There may be some other aspect of the gaming activity that is related to the higher resiliency scores found in this sample, rather than the personality types or a presumed correlation with coping strategies. In order to determine gamers' own

perceived benefits with gaming, an opportunity to have participants write in additions to their responses may shed more light on gamers' belief systems. Approximately 5% of participants had chosen to write in additional notes on their test forms. These notes could not be accounted for in the study structure, but show individuals' desires to explain in greater detail and complexity their feelings about the significance of gaming and their personal motivations. Thus the instrument construction appeared to be inadequate for these participants.

The literature indicated that specific personality characteristics and levels of resiliency were correlated (Riulli et al., 2002). It was interesting to note that there was a moderate negative relationship between Engagement Coping and Resiliency. This would mean that the more aligned a person was with Engagement Focused Coping the less resilient they would be. This goes directly against existing literature relating to resiliency. This could mean that in this population, Engagement Focused Coping is negatively related to resiliency. It could also be related to the CSI-SF's propensity to allow for nonmutually exclusive coping skills groups. Further exploration would have to take place in order to better understand this contradictory finding.

It is interesting to note that this population was found to have rather high resiliency scores with a Mean of 44.19, when compared to other samples. However, among this sample population resiliency and personality types were not correlated. Gamer personality tests are being refined. At the time this study was being conceptualized, there were only three personality assessments that proposed to be specifically designed for the gamer population. Personality, which typically correlates with resiliency, may not be well represented through the available tests. It is also

possible that there simply is no relationship that exists between player personality type, coping methods, or resiliency levels as measured in this study.

## **Hypothesis Two**

2. Individuals with the Gamer Personality Types of “Mastermind,” “Conqueror,” or “Daredevil” will prefer problem oriented coping styles.

Given that the first hypothesis presumed there was a relationship between the test variables, this second hypothesis presumed a specific relationship between certain gamer personality types, and specific coping styles. Campbell-Sills et al. (2006) had indicated a relationship between specific personality types, and specific styles of coping. In this study, however, there was not an indication of significance between these variables.

Trends among the variables were explored by using percentages of individuals identifying as specific personality types who had selected certain coping strategies. When these percentages were reviewed, a majority did exist for problem oriented coping within the Conqueror personality type.

It is important to note that a limitation in this study, as mentioned under the previous hypothesis, was the CSI-SF’s tendency to allow for grouping of coping strategies, rather than requiring them to be mutually exclusive. Another point to consider is that the personality types may not have been the most accurate way to identify player motivation. This is unclear, given the lack of overall information on the gamer culture. However, as more information is gathered, it would be beneficial to see specific hypotheses like this revisited.



### **Hypothesis Three**

3. Individuals with the Gamer Personality Types of “Seeker,” “Survivor,” “Socialiser,” and “Achiever” will prefer emotion oriented coping styles.

This hypothesis presumed, as in Hypothesis Two, that there were other specific relationships between gamer personality types and coping strategies. As was the case in the previous hypothesis, the relationships were not strong enough to identify significance among these variables. However, again, there were trends among the percentages that showed a majority of participants identifying within the proposed parameters. In this case these percentages were accurate, though small, across the four proposed personality types.

Additionally, however, it should be considered that 5% of individuals wrote in additional information on their test forms. These write in responses were not catalogued in this study. However, the presence of this participant feedback provides further information to consider for future studies. It is noted that the participants found it important to make sure that their motivations for game play were appropriately represented. In many cases participants identified the situational nature of their gaming preferences. Some responses alluded to participants’ preference for certain game titles, or with certain systems. Other participants wanted to share short stories with how helpful gaming had been to them in different situations. All of this information was very relevant to gaining a better understanding of the gamer culture. In future studies, a mixed methods design could be considered in order to capture this anecdotal information about this culture.

## Analysis of the Sample

Gathering demographic information in this study was of particular importance to describe the sample. As with many studies, the demographic variables were necessary to explore in conjunction with the test variables to account for any possible extraneous variables, or trends among variables. Secondly, and in this case more uniquely, there is not a great deal of data on the gamer population from a cultural perspective in scholarly research. In this way it was hoped that this study would be able to promote a deeper understanding of this particular cultural group.

The analysis of the test variables did not yield any noteworthy statistical correlations; however it was found that the demographic variables themselves provided some noteworthy, and unexpected, information. This study's population's Mean score for age ( $M = 26.7$  years) was similar, though slightly younger, than the Mean age reported by the Entertainment Software Association's 2014 data report ( $M = 31$  years). The male-female split for this study's sample population was noticeably different from the ESA's reported population statistics. This study's population contained a noticeably higher percentage of Male participants than Female participants. This may be related to the stigma that is still attached to gamers being more dominantly male. Even though this demographic has shifted dramatically, it may be because a larger population of males attend these sort of conferences, because female gamers may not feel as welcome as men yet at conventions, or it may be that men who play games are more comfortable with readily identifying as gamers and participating in a study like this because of the existing stigmas. More research will need to be conducted in order to better understand the effect gender has on identification as a gamer.

The ESA's report identifies a noticeably more even split between Male and Female gamers. The Gamer Identification variable, which focused on a participant's self-identification as a gamer, was not considered by other studies. The data gathered from this variable, however, provided interesting information to consider. The majority of participants identified themselves as gamers on the demographic questionnaire. Only a very small margin of individuals indicated that they did not identify as gamers. When initially considering this information, I did not understand why individuals would not identify as a "gamer" while at PAX East. After consideration it became clear that I had initially viewed this question as possessing an obvious response for the population being sampled. However, the participants may have seen the question differently. Participants may see this self-identification from the perspective of representing themselves as a gamer to other non-gamers. Individuals may not choose to do this, because of the continued stigmas associated with gaming. Individuals may also classify themselves as another term other than gamer, such as "Geek" or "Nerd," for example, which are also terms that are at times attributed to this culture. Self-identification as a gamer may be a much more important aspect to the definition of a gamer than had originally been considered.

Several variables in this study had not been observed in other scholarly articles during the literature review process. In addition to Gamer Identification these new variables included a participant's preferred platform, participant's race, socioeconomic level, educational level, and time per week spent playing video games. The preferred platform variable became difficult to measure because of the volume of additional consoles written in by other participants. Many individuals wrote in game platforms such

as “tabletop” or “board games” which were not originally considered in the design of the study. However, I can verify from personal experience that crossovers regularly exist in gamers’ activities. This still provided insight into the variety of methods that individuals in this culture utilize in order to enjoy their activity. Affinity towards one’s favorite consoles and games can sometimes result in heated debates, and despite console choice’s importance to many gamers, this has not been considered in previous studies. The other newly considered variables showed unique patterns among participant responses.

Many of the demographic variables showed clustering with regard to participant responses. The participants elected to write in additional classifications for the Race demographic variable. However, these write in items often had only one or two participants attached to them. The clustering of this variable occurred around four different races, which were the “Black/African American,” “Hispanic,” “Asian,” and “Caucasian” categories. There were 20 individuals who identified as being a part of 12 additional races. Gaming is popular in countries around the world, and though this study has representation from a number of races, there is opportunity to consider that a larger cross sampling at different conventions or through online sampling may have yielded a more diverse sampling of race.

The Educational Level variable showed a cluster of scores around two options. These responses were “Some College” and “College Graduate.” The Socioeconomic Level demographic variable had a similar group of participants surrounding “<\$20,000” and “\$20,000–\$30,000” with regard to a person’s annual income. The number of participants identifying as earning the lowest annual yearly income was noticeably high. Initially it seems odd that this particular population would be so well represented at a

convention that can be very costly to attend. Many participants had passively identified that they had traveled across several states or, in some cases, from other countries to attend PAX East. Such sacrifices seem to pale in comparison to the social and interpersonal experiences that subjects reported anecdotally while interacting with the researcher during data collection. As well, a number of participants were college students, or had indicated that they were recently graduated. The Mean Age for this population was 26.7 years, and so individuals may still be pursuing their careers. In a number of cases individuals had identified their interest in becoming independent game developers. This career can require a great deal of time, but does not immediately produce an income. So individuals may be earning less in the short term for a hope of long-term gains. It is also possible that attendees of PAX gaming conventions may be unique in other ways. Attendees at these conventions seem to have an attitude of community that is different from other similar conventions. The tone of the show is best exemplified in the number of banners near the entrance to the show identifying “Welcome Home” to attendees. It is also possible that the draw to a show like this to socialize for gamers may have become greater as gaming in general has become more of a social activity. Still, an observation like this lends itself to considerations in future studies, as the gaming culture has little scholarly attention.

Finally, it was observed that the variable options around Time Spent Gaming in a week clustered around the “6-10 hrs.,” “11-15 hrs.,” and “16-20 hrs.” choices. This is discussed further in the Limitations section of this chapter; however this seems of note as it may speak to the Gamer population at large, or it may be a characteristic of gamers

who attend the PAX East convention, as was mentioned above. PAX attendees may be a unique community of gamers.

### **Conclusions**

During the review of the literature it became clear that, though there were a number of studies focused on video game playing, there were few studies completed that had considered what characteristics helped to define the grouping of individuals who regularly engaged in playing video games from a counseling perspective. Market research studies like the ESA's (2014) Market Research identify features of the culture, but do not account for psychological variables that are explored in this study. These individuals, referred to as "gamers," are often negatively perceived by the mainstream news outlets and individuals unfamiliar with the gaming community. However, with such little scholarly research completed on gamers, it became important to develop a greater understanding of them from a cultural perspective.

The Mean age of participants was 26.72, which compared to the recorded average age of a gamer identified by the Entertainment Software Association (2014) as 31 years. Though this was reasonably in line with expectations, there was a slight deviation from reported data on genders. Researching gaming and gender is a difficult task since studies vary greatly in their ability to obtain representative samples of males and females. Additional research that specifically targets a stratified sample of males and females may be useful in understanding this dynamic better.

There was no reliable statistical information in the reviewed literature with which to compare the rest of the demographic variables. However, much has been said about the test variables' (i.e., personality, coping strategies, and resiliency) relationships in

other populations. Yet, only one significant relationship was found among the test variables in this study. This relationship, between Engagement Coping and Resiliency, was moderately negative, which is the opposite of what is reported in the literature. The deviation in correlation is likely related to the test variables of personality and coping skills not being important factors in predicting resiliency among the individuals in this population. The negative relationship between Engagement Coping and Resiliency may be related to the amount of time spent gaming detracting from successful coping.

McGonigal (2011b) reported on studies that indicate 21 hours of gameplay per week was predictive of life successes, but moving into the range of 28 hours caused a steep downturn in this relationship. There were 24% of participants who indicated that they played more than 20 hours per week and would have fallen into this threshold.

McGonigal suggested that an optimal goal is to aim for roughly one hour of gaming a day in order to get the most benefits from the gaming experience. Additionally, there have been a number of research studies performed surrounding video games. However, studies done on the gamer culture are still rather few, and so the demographic information collected provided unique opportunities for consideration that will hopefully add to counseling's understanding of this culture.

The Race demographic clustered around four primary categories, which were "Black/African American," "Hispanic," "Asian," and "Caucasian." The Educational Level variable showed a grouping around "Some College" and "College Graduate." The largest clustering in the Socioeconomic Level group was around "<\$20,000" and "\$20,000–\$30,000" for annual income. Lastly, the demographic variable focused on

Time Spent Gaming (weekly) showed clustering on the “6-10 hrs.,” “11-15 hrs.,” and “16-20 hrs.” options.

Gamer personality types did have a tendency to cluster in the same way as they had in the normed sample for the BrainHex (Appendix H). The majority of participants in this sample fell into the Mastermind Personality Types (Type D). This personality type is correlated with individuals being focused on strategy and problem solving. A majority of gamers being identified as problem solvers makes sense, given the structure of most games. Regardless of the type of video game there tends to be an objective presented to the player. Opportunities are then afforded to the player to try and work towards that objective. However, they must use restrictions designed to be challenging to the player. Though the CSI-SF is an effective clinical tool, and provided useful information, the lack of mutually exclusive scoring restricted opportunities for different data analysis.

In Campbell-Sills et al.’s (2006) study, it was found that personality sometimes showed a greater correlation with resiliency when other mediating factors were considered. This study also attempted a method of mediation analysis to see if any of the relationship (though again, not a significant relationship) found between Gamer Personality, Coping Style, and Resiliency could be accounted for by other mediating factors. In addition to comparing each test variable to one another, a set of Multiple Regressions was completed in order to consider the possibility of a mediating variable. Though some relationship between Personality and Resiliency was explained by Coping Strategies, these relationships were insignificant. These findings do not necessarily debunk a mediating relationship between personality and resiliency. However, it does



tell us that within this population, a mediating variable between these particular variables seems unlikely.

The high resiliency scores are interesting considering several studies' identification (Al-Naser & Sandman, 2000; Holmes, 2013; J. L. Moore et al., 2013) that gamers are believed to have problematic methods of dealing with life. Griffiths et al. (2003) spoke to the majority of existing studies placing a focus on video games being a negative influence in player's lives. Though causation cannot be presumed in this case, it is significant to me that this sample population was comprised of a group of individuals who were attending a convention specifically focused on gaming, and possessed a high Mean resiliency score ( $M = 44.19$ ). These findings will require further research in order to better understand the relationship between the gamer population and these rather high resiliency scores.

### **Limitations**

A particular limitation in this study was found surrounding the use of the Coping Strategies Inventory Short Form (CSI-SF). This tool was chosen because it appeared to have noteworthy validity and reliability data supporting it. Though these components still hold true, the inability of the instrument, in some cases, to determine a mutually exclusive measure of a person's coping preference became cumbersome in statistical analysis. There were many individuals that scored equally in two or more Tier Two Coping strategies, thus both were primary. Though the CSI-SF provides useful information about the potential versatility of an individual's coping methods, it does not lend itself to the data comparisons that were being used in this study.

The ER-89 is a well organized and user friendly measure of resiliency. However, the lack of normative data for this metric makes drawing conclusions difficult. Mean resiliency scales from other established studies were used to help identify benchmarks that could be used for comparison. A resiliency measure with normed data, however, would provide greater opportunities for drawing information from a sample that would be more reliable and valid.

Very few studies have attempted to capture aspects of the gamer culture, as has been mentioned throughout this study. This study, in particular, was attempting to capture as many possible defining characteristics of gamers. The purpose was to begin to gain a greater understanding of this very large cultural group. With this exploratory nature in mind it seemed necessary to attempt to explore as many conditions for each variable as possible. In some cases, such as the “Platforms Played” and “Race” demographic sections, all possible options could not be accounted for, and so a “write in” option was available. The volume of options written in, especially to the different gaming platforms that are routinely played, was unexpected. This information has been valuable in obtaining a better understanding of the culture, but some of the items written in had very few additional individuals who also opted to write in these platforms or races. It is possible that by not having these options available at the start meant that some participants may not have considered some possible options to write in (e.g., board games and table top games). Additionally, many participants had chosen to write additional information into the margins of some of the test pages. This feedback could not be recorded because it was not manageable given the resources available to conduct the

study. However, it does speak to this population's desire to be understood at a deeper level.

The population sampled were volunteers from the PAX East gaming convention. It has been presumed that because this is specifically a gamer centric convention, that these participants' responses can be generalized out to the gaming culture at large. A venue that provided access to as large a population of gamers as possible was needed in order to attain an appropriate sample size. Additionally it was unclear how many individuals might be willing to volunteer for a study on gamers. Many individuals in this culture are aware of the negative image that has been created by previous research and the mainstream media. Several participants during the data collection process questioned the goals of this study before they felt comfortable in participating.

Though generalizability of the sample population is still presumed to be representative of gamers in general, the reality is that the sample may be a better representation of individuals who attend PAX conventions. After attending PAX East to gather this data it became clear to me that the tone at PAX is one of a community of gamers gathering together to share in the activities that they love. The community atmosphere promoted at this convention may attract a unique type, or sub-group, of gamer. The cost of attending a convention may contribute to a bias in the sample. Additionally, even though a sample population of 473 individuals is appropriate for statistical analysis, this culture is extremely large and may be disproportionately represented at this national convention.

The paper and pencil method of testing used was necessary because of limitations in resources while carrying out this study. The volume of individuals who were

interested in participating in this study was unexpected, and so there were not enough sample packets transported to Boston to accommodate the number of interested individuals at the convention. Additionally, though individuals managed the size of the test packet in order to provide their information, a paper and pencil method was somewhat cumbersome on the convention show floor. The results of these data collection methods may have resulted in a biased sample by systematically excluding individuals who may not have felt as though they had enough time to commit to filling out the test packet.

### **Recommendations for Future Research**

The three hypotheses that were proposed in this study were rejected because of a failure to find a significant relationship among gamer personality type, coping strategies, and level of resiliency. These hypotheses were based exclusively on the literature that exists surrounding these variables, and their relationships in other populations. Since there is still very little known about the cultural components of gamers, and since there were limitations in this study, there still is a need to investigate the strength of these relationships. Moreover, since so little research into the gamer culture has been published, the primary recommendation resulting from this study is that there be a continued focus on research exploring the structure and dynamics of the gamer culture. This research should include different methods of sampling the population, additions made to the variables being explored, and diverse methods to allow further opportunities for gamers to provide feedback on their gaming experience.

Future studies should consider incorporating more open-ended questions to provide deeper information than the scaled questions alone. Questions could include

items such as: “What is your favorite type of game and why?,” “What is the biggest factor you take into account when deciding whether or not to play a game?,” or “Do you have a favorite character in games and what draws you to them?” A mixed methods examination of gamers may help in understanding motivations at a deeper level. In some cases participants in this study felt the need to add qualifiers to their data. The study was not designed in such a way to take into account these notations. Establishing an initial framework around the gamer culture was necessary in this study, but follow up research should take this into consideration when establishing the direction of the data being pursued.

Additional technological resources, like having the test packet available on a tablet device, would have streamlined the testing process. This would have also made data collection and calculation much more efficient, and provided an opportunity for a greater number of individuals to participate in data collection. Many large gaming companies were collecting market data in innovative ways on the show floor. New methods of data collection should be considered in future studies.

Player preference was explored in this study from the perspective of gamer personality and console preference. However, gamer preferences could be approached differently taking into account information gained from this sample. Gamer preference around consoles was explored in this study, but will need a better design in future studies. The data gathered in this research was useful; however the amount of write in information and combinations of preferred consoles was unexpected. The diversity of console options including retro systems, board and tabletop games, and handheld systems were not considered in the structure of the data packet. Additionally, this study did not

consider additional gaming preferences such as an affinity toward solo or multiplayer games. In addition a follow-up study could explore whether or not a person prefers to play games cooperatively or competitively. The different genres of video gaming were thought to be accounted for by assessing player motivation; however genres of games, as well as method of gaming in general (i.e., board games, table top games, video games, etc.) are more complex ideas that could be explored differently in future research.

Video games are incorporating more sophisticated methods of interaction between the gamer and the console of their choice. An advanced Kinect camera, for example, was packaged with the Xbox One console, which was released in November of 2013. It allows individuals to provide voice commands to their consoles as well as use motion controls to interact with the system. So called “Next Gen” consoles incorporate features like cable network access and DVR capabilities to become more central in an individual’s home entertainment. Use of video game systems for purposes not including the playing of video games would be appropriate to explore in future studies.

Individuals who attended the PAX East convention may represent a unique subgroup of the general gamer culture. While data were being collected, I observed that individuals attending the convention were particularly attuned to the convention’s desire to be like a second home to gamers. This may not be a completely representative mindset of all gamers. Further studies will need to be conducted in order to understand the boundaries and practices that are common among gamers generally. In order to ensure generalizability, additional venues should be considered. Additional options for collecting data could be in the form of attending additional conventions, using online data

collection through consoles and PCs, or gathering data through video game stores or online retailers.

Video games are considered to be one of the highest grossing forms of entertainment today (Browning, 2006). However, a new method of consuming this form of media has come into focus over the past several years. This observation was made during the data collection period of the study, as there were many individuals at the PAX East convention who spoke about online game viewing. Individuals at times choose to watch others play games rather than play games themselves. YouTube channels may focus on an individual playing walkthroughs of new games, or strategies to earn special achievements within difficult levels of a game. Entire online networks, mimicking television stations, are available for individuals to “stream” themselves playing games, while thousands of viewers watch the channel live. This has become a routine method of consuming games. Modern consoles (launched during the time between this study transitioning from proposal and data collection to completion) include opportunities for live streaming within apps available on the system. Individuals can now make their careers out of playing video games professionally, as the companies who provide the network may contract for a cut in advertising revenue with the player. The motivation to watch someone play instead of playing themselves seems counter intuitive to data currently available to me. However, its popularity cannot be denied and requires attention in future studies focused on exploration of this new facet of the gamer culture.

Additionally, so called “E-Sports” have become an increasingly more prominent part of the gaming landscape. Again, this was an area of gaming that became clearer in discussions with participants of this study during the data collection period at the PAX

East convention. E-sports events, short for electronic sports, are similar to professional sports. In E-Sports, gamers compete individually or on teams against other gamers for large cash prizes, sponsorship by gaming companies, and prestige found similarly by professional athletes. Attention surrounding E-Sports continues to grow and at this time no research has been completed on this facet of the gamer culture. The methods by which an individual can consume gaming centric products are continuing to increase. Future research will need to continue to explore these shifts to take into account all of the facets of this ever flourishing culture.

Though conventions are a convenient way of accessing large numbers of gamers interested in volunteering, the data can only really be generalized to the members of the gamer culture who are willing or able to attend conventions. Conventions often require financial obligations, travel, and time that many members of the gamer culture may not be willing to spend or cannot afford. Additionally, individuals may prefer to consume their games independently, and simply may not be interested in convention attendance. Another option to improve sampling procedures would be to include the online gaming communities hosted on consoles and through PCs. Though not all gamers are interested in online play, this would still reach a significant majority of the gamer population. Support from gaming retailers could be considered as a means of reaching a majority of consumers regardless of their preferences for attending conventions or playing online. Another option for data collection would be to seek industry or company support for scholars interested in gathering data at conventions, as well as assisting in data collection through online communities like Xbox Live or Playstation Network, and through retailers. As well collaboration with companies that have access to technology could help



provide assistive technology, like tablet devices, to provide greater accessibility to participants.

### **Summary**

This study provided useful information for beginning to establish a structure to the gamer culture. The exploration of psychological traits was useful to begin to tease out both the benefits and drawbacks to game play. The study's strengths in exploring new ground in this culture were tempered by several concerns that should be explored or restructured in future studies. High resiliency scores show some potential benefits within the gamer culture; however correlations were not found with regard to personality types and coping skills as they were found in existing literature. In this way further studies should be completed that continue to explore this culture. Understanding the potential benefits found in this culture can be leverage by counselors, while knowing the pitfalls that might be inherent within this culture will allow clinicians to be more prepared to render care.

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**Appendix A**

**Gaming and Coping**

**Participant Demographic Information**

**Please Report Your:**

**Gender: (Circle One) Male Female**

**Age: \_\_\_\_\_**

**Do you identify yourself as a “gamer?”**

(Circle One)

**YES or NO**

**What platform(s) do you prefer to use when you play?: (Circle all that Apply)**

PC/Laptop      Microsoft Xbox      Sony Playstation      Nintendo Gamecube

Steam      Xbox 360      Playstation 2      Wii

Playstation 3      WiiU

Other: \_\_\_\_\_

PSP

(Please Identify)

Playstation Vita

**Race: (Circle One)**

American Indian  
or Native Alaskan

Black  
or African American

Hispanic or Latino

Caucasian

Other: \_\_\_\_\_

**Please Indicate your Highest Level of Education Completed: (Circle One)**

Some High School      High School Graduate      Some College      College Graduate

Some Graduate School      Earned Masters Degree  
or Professional Equivalence      Earned Doctoral Degree

**What is your current estimated yearly income: (Circle One)**

< \$20,000      \$20,000–\$30,000      \$30,001–\$40,000      \$40,001–\$50,000

\$50,001–\$60,000      \$60,001–\$70,000      \$70,001–\$80,000      \$80,001–\$90,000

\$90,001–\$100,000      \$100,001–\$110,000      \$110,001–\$120,000      \$120,000 >

**Approximately how many hours do you play video games in an average week?**

(Circle One)

1–5 hours      6–10 hours      11–15 hours      16–20 hours

21–25 hours      26–30 hours      30–35 hours      More than 35 hours

## Appendix B

### BrainHex

## 1. Quiz

**Instructions:** Please circle the response that most represents your feelings to each statement.

**Exploring to see what you can find.**

“I love it!” “I hate it!” “It’s okay.”

**Frantically escaping from a terrifying foe**

“I love it!” “I hate it!” “It’s okay.”

**Working out how to crack a challenging puzzle.**

“I love it!” “I hate it!” “It’s okay.”

**The struggle to defeat a difficult boss.**

“I love it!” “I hate it!” “It’s okay.”

**Playing in a group, online or in the same room.**

“I love it!” “I hate it!” “It’s okay.”

**Responding quickly to an exciting situation.**

“I love it!” “I hate it!” “It’s okay.”

**Picking up every single collectible in an area.**

“I love it!” “I hate it!” “It’s okay.”

**Looking around just to enjoy the scenery.**

“I love it!” “I hate it!” “It’s okay.”

**Being in control at high speed.**

“I love it!” “I hate it!” “It’s okay.”

**Devising a promising strategy when deciding what to try next.**

“I love it!” “I hate it!” “It’s okay.”

**Feeling relief when you escape to a safe area.**

“I love it!” “I hate it!” “It’s okay.”

**Taking on a strong opponent when playing against a human player in versus match.**

“I love it!” “I hate it!” “It’s okay.”

**Talking with other players, online or in the same room.**

“I love it!” “I hate it!” “It’s okay.”

**Finding what you need to complete a collection.**

“I love it!” “I hate it!” “It’s okay.”

**Hanging from a ledge.**

“I love it!” “I hate it!” “It’s okay.”

**Wondering what’s behind a locked door.**

“I love it!” “I hate it!” “It’s okay.”

**Feeling scared, terrified, or disturbed.**

“I love it!” “I hate it!” “It’s okay.”

**Working out what to do on your own.**

“I love it!” “I hate it!” “It’s okay.”

**Completing a punishing challenge after failing many times.**

“I love it!” “I hate it!” “It’s okay.”

**Co-operating with strangers.**

“I love it!” “I hate it!” “It’s okay.”

**Getting 100% (completing *everything* in a game).**

“I love it!” “I hate it!” “It’s okay.”

## 2. Rate

**Instructions:** Arrange the following experiences into a sequence from 6 (Best) to 0 (Worst). Use each number only once

- "A moment of jaw-dropping wonder or beauty."
- "An experience of primeval terror that blows your mind."
- "A moment of breathtaking speed or vertigo."
- "The moment when the solution to a difficult puzzle clicks in your mind."
- "A moment of hard-fought victory."
- "A moment when you feel an intense sense of unity with another player."
- "A moment of completeness that you have strived for."

## 3. Score

FOR RESEARCHER USE ONLY

Letter	I Love It (+1)	I Hate It (-2)	It's Okay (+0)	Rating (+0 to 6)	Total
A					
B					
C					
D					
E					
F					
G					

Version 0.99

Designed by international hobo

## Appendix C

### Coping Strategies Inventory–Short Form

Instructions: People often experience events that are unpleasant or stressful. We are interested in how you TYPICALLY HANDLE OR COPE with stress. The items below represent thoughts or behaviors that people use to cope with stress. Circle a number next to each item to show how often you cope with stress in that way. If a number is circled incorrectly, mark through it with an “X” and circle the correct response.

	Never	Seldom	Some- Times	Often	Almost Always
1. I make a plan of action and follow it . . . .	1	2	3	4	5
2. I look for the silver lining or try to look on the bright side of things. . . . .	1	2	3	4	5
3. I try to spend time alone . . . . .	1	2	3	4	5
4. I hope the problem will take care of itself . . . . .	1	2	3	4	5
5. I try to let my emotions out . . . . .	1	2	3	4	5
6. I try to talk about it with a friend or family . . . . .	1	2	3	4	5
7. I try to put the problem out of my mind . .	1	2	3	4	5
8. I tackle the problem head- on . . . . .	1	2	3	4	5
9. I step back from the situation and try to put things into perspective . . . .	1	2	3	4	5
10. I tend to blame myself . . . . .	1	2	3	4	5
11. I let my feelings out to reduce the stress . . . . .	1	2	3	4	5
12. I hope for a miracle . . . . .	1	2	3	4	5
13. I ask a close friend or relative that I respect for help or advice . . . . .	1	2	3	4	5
14. I try not to think about the problem . . . .	1	2	3	4	5
15. I tend to criticize myself . . . . .	1	2	3	4	5
16. I keep my thoughts and feelings to myself . . . . .	1	2	3	4	5

## Appendix D

### ER-89 Ego Resiliency Scale

Please respond to the following questions by circling the response that best applies to you.

Use the following scale:

1 = Does not  
apply at all

2 = Applies  
slightly if at all

3 = Applies  
somewhat

4 = Applies  
very strongly

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I am generous with my friends.  | 1 | 2 | 3 | 4 |
| 2. I quickly get over and recover from being startled.                         | 1 | 2 | 3 | 4 |
| 3. I enjoy dealing with new and unusual situations.                            | 1 | 2 | 3 | 4 |
| 4. I usually succeed in making a favorable impression on people.               | 1 | 2 | 3 | 4 |
| 5. I enjoy trying new foods I have never tasted before.                        | 1 | 2 | 3 | 4 |
| 6. I am regarded as a very energetic person.                                   | 1 | 2 | 3 | 4 |
| 7. I like to take different paths to familiar places.                          | 1 | 2 | 3 | 4 |
| 8. I am more curious than most people.   | 1 | 2 | 3 | 4 |
| 9. Most of the people I meet are likeable.                                     | 1 | 2 | 3 | 4 |
| 10. I usually think carefully about something before acting.                   | 1 | 2 | 3 | 4 |
| 11. I like to do new and different things.                                     | 1 | 2 | 3 | 4 |
| 12. My daily life is full of things that keep me interested.                   | 1 | 2 | 3 | 4 |
| 13. I would be willing to describe myself as a pretty<br>“strong” personality. | 1 | 2 | 3 | 4 |
| 14. I get over my anger at someone reasonably quickly.                         | 1 | 2 | 3 | 4 |

## Appendix E

### Consent to Participate in a Research Study

Duquesne University  
600 Forbes Ave. Pittsburgh, PA 15282

YOU MUST BE AT LEAST 18 YEARS OF AGE TO  
PARTICIPATE IN THIS STUDY

- Title:** The Gamer Culture: An Exploration of Gamer Archetypes Relationship with Coping Strengths
- Investigator:** Dr. David Delmonico  
Department of Counseling, Psychology, and Special Education  
Duquesne University  
412-396-4032
- Student Co-Investigator:** Stephen Kuniak  
326 Concord Ave.  
Greensburg, PA 15601  
stephen.kuniak@gmail.com
- Source of Support:** This study is being performed as partial fulfillment of the requirements for the doctoral degree in Counselor Education and Supervision at Duquesne University.
- Purpose:** You are being asked to participate in a research project that seeks to investigate the possible relationship between level of video game play and preferred coping styles. You will be asked to complete a brief survey packet asking you questions about your experience in playing video games and facets of your personality which should take you no longer than 10 minutes.
- These are the only requests that will be made of you.
- Risks and Benefits:** There are no risks, within this study, greater than those encountered in everyday life. The potential benefit in volunteering for this study is that the results of this study will increase our understanding of video games and what sort of effect they may have on our lives.
- Compensation:** Individuals participating in this study will receive a souvenir button out of gratitude for their participation. Participation in the study will require no monetary cost to you.
- Confidentiality:** Your name will never appear on any survey or research instruments. No identity will be made in the data analysis. The survey packet contains no identifying questions that could link you with your survey responses. All written materials and consent forms will be stored in a locked file in the researcher's home. Your responses will only appear in statistical data summaries. All materials will be retained for five years and then destroyed.



**Right to Withdraw:** You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time. You can simply place a large X over the first page of the data collection document, and I will destroy that document without recording any of the provided data. There is no penalty for withdrawing from this study. Your participation in this study is finished once you submit the packet to the researcher, and again you may withdraw from this study at any time up to the submission of the packet.

**Summary of Results:** A summary of the results of this research will be supplied to you, at no cost, upon request. You may also retrieve a copy of the study from the student co-investigators professional web page at your convenience:  
<http://www.stevекuniak.com>

**Voluntary Consent:** I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

**I understand that should I have any further questions about my participation in this study, I may contact Stephen Kuniak, the student co-investigator, at [stephen.kuniak@gmail.com](mailto:stephen.kuniak@gmail.com), Dr. David Delmonico, the investigator, at 412-396-4032, or Dr. Joseph Kush, Chair of the Duquesne University Institutional Review Board at 412- 396-6326.**

If you wish to participate in this study, please review the statement below, sign and date the form. Then please place this signed consent form in the marked Informed Consent Box. My sincerest thanks in assisting me with this study.

I hereby give my informed consent to participate in this study:

Print Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Researcher: \_\_\_\_\_

Stephen F. Kuniak MEd NCC LPC

## **Appendix F**

### **Debriefing Statement**

#### **The Gamer Culture: An Exploration of Gamer**

##### **Personality's Relationship with Resiliency**

Thank you for taking the time to participate in my study. The study itself is rather straightforward. The first questionnaire, detailing your age, platform preferences, educational level etc. was a tool designed to record your basic demographic information. The second questionnaire asking questions about your preferred gaming activities was an instrument designed to measure your primary gamer personality. The third and final questionnaire asking you about how you deal with life stressors was a measure of your preferred coping strategies. Coping strategies were used as a representative of resiliency as previous research has shown a relationship between a person's preferred coping style and how resilient they are.

I believe that a popular presumption in modern day mainstream culture is that all video games are the same, they're mostly problematic, and that the people that play them are at some sort of significant risk. My belief about the gamer population, however, is that each person is part of a "gamer culture." Our modern understanding of culture is that each individual person is a representative of many cultures and that culture is made up of the institutions, communication, values, religions, genders, sexual orientations, disabilities, thinking, artistic expressions, and social and interpersonal relationships of every person. We know that every culture has certain components that are particularly important to that culture. My belief is that, not only may the gamer population not be as "at risk," as popular opinion, but that certain personality traits represented in this culture may be related to positive methods of coping and, consequently, resiliency

It was hypothesized in this study that there would be a relationship between gamer personality measures and styles of coping. It was also hypothesized that individuals who would score high on gamer personality measures more closely aligned with “thinking” traits would be more closely related to “task” or “problem-oriented” methods of coping. Consequently, it was also hypothesized that individuals who would score high on gamer personality measures more closely aligned with “feeling” traits would be more closely related to “emotion-oriented” methods of coping.

Again, I want to thank you for your time in helping me to complete my study. If you are interested in reviewing the results they will be posted, free of charge, on my professional website. The web address for this site is: [www.stevекuniak.com](http://www.stevекuniak.com)

**Appendix G**  
**Exhibitor Permission**

Jan 11

Marsden-Kish, Kyle (RX)

Hey Stephen,

Sounds like an interesting paper, as a team we have discussed your idea and while we all agree you're not a show floor fit I could sell you a kiosk in our lobby which is basically a 10x10, other non-endemic are placed there as well as an alternative to show floor space as well. The cost would be 3K and that would get you a carpet, 1 6ft table 2 chairs and 5 exhibitor badges for your crew. Let me know if this is something that works for you and we can proceed from there.

Regards,

Kyle Marsden-Kish

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**Appendix H**  
**BrainHex Permission**

Chris Bateman

Jan 8

Hi Stephen,

Having a large enough pool of respondents is always an issue. Here's how the data looked when we cleared 50,000 respondents; you should be able to use this to perform your calculation (as you can see, 'Survivor' is the least represented class):

Conqueror	14178
Seeker	9370
Mastermind	10016
Achiever	5359
Socialiser	5223
Survivor	3351
Daredevil	2931

Male	44685
Female	5737
Male %	88.62%
Female %	11.38%

Respondents	50422
-------------	-------

All the best,

Chris Bateman

Jan 9

Hi Stephen,

Yes, sorry, I misread—it is the Daredevil with the lowest representation, although both Daredevil and Survivor are the rarest types in general and in a small sample \*either\* could be the smallest.

I'm not sure if these results are in any of the published papers—my Canadian researchers who were supposed to be analysing the data did not get very far, alas. If it's anywhere it would be in the "Preliminary results" paper, which is included among the references within the BrainHex pack I sent you.

All the best,  
Chris.

**Appendix I**  
**CSI-SF Permission**

8/23/12

Clifton Addison <clifton.addison@jsums.edu>

Hi Steve,

Thank you very much for your interest in our work. I would be happy to help in any way. I fully support what you are doing. The CSI-SF is a shortened form of the original 75-item CSI developed by David Tobin. So additional information regarding reliability and validity of the instrument, in addition to what we have in our paper, could be found there.

You can find the instrument and all JHS forms at the following website:

<http://jhs.jsums.edu/jhsinfo/ForResearchers/FormsManuals/Exam1Forms/tabid/109/Default.aspx>

Select CSI-F

In addition, I am attaching a copy of the instrument as was administered in the JHS.

Let me know how you are progressing. I would be delighted to see your work.

Thanks.

*Clifton Addison*

Dr. Clifton C. Addison  
Research Liaison/Science Officer  
Chair, Research Training Appointments Subcommittee  
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