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The Effect of Narrative Elements within Video Games:

Localized Setting and Character Motivation on Audience Arousal

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The Effect of Narrative Elements within Video Games:
Localized Setting and Character Motivation on Audience Arousal

by

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Dedication

I dedicate this thesis to my parents for their love, protection, and teachings and to my siblings for their continual support and inspiration. I would be lost without y'all.

With all my love,

Thank you

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I am so very grateful to the many people that have aided me in the completion of this memorable year-long project. First and foremost, I sincerely thank Dr. Matt Eastin for his continual guidance, enthusiasm and teachings. It has been an honor to work with you these past two years and I look forward to the next round. To Dr. Vinnie Ciccharillo, thank you for your encouragement and collaboration on this project; I hope the first of many. Last, but not least, thank you to my friends and family for your support throughout this process.

Abstract

The Effect of Narrative Elements within Video Games:
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The creative possibilities of video games have been energized by the continual advancement of technology in the twenty-first century. Extensive research has been conducted to better understand the effects of video game audio-visual components, gaming platforms, and computer-mediated communication. The research that has investigated the influence of narrative elements has focused primarily on their interaction with aggressive game play and increased aggression. After investigation into the literature pertaining to narrative, human motivation, and arousal, this thesis discusses study results indicating a subtle, yet significant, influence character motivation manipulation has increasing audience arousal, specifically in a narrative involving a near future war plotline. Additionally, the results indicating that the localization of a narrative's setting does not increased audience arousal any more so than a narrative setting ambiguously defined. These concepts can be useful to advertising strategists interested in developing advergames or product placements within video games, and

therefore the implications of this thesis' results and future research suggestions will be presented.

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Chapter 1: Introduction

As consumers continue to flock to digital platforms for information and entertainment, digital media tactics are becoming more complex. Industry expectations of marketing campaign effectiveness are readily evolving as digital metrics become more accessible. The relationship between consumers and digital mediums is an extremely popular topic within various fields of marketing, advertising, communication studies, psychology, neuroscience, and sociology.

The use of narrative elements within marketing messages has been common practice especially with campaigns placed in tradition media, such as television commercials and print ads. Technological advances in graphic design and human-computer interaction devices have sparked interest in a reinvigorated video game industry. This extremely unique and interactive medium has vast potential for persuasive communication. Many game genres inherently incorporate narrative elements such as plot, setting, and characters. The vast majority of research related to video games' effects on audiences has focused on audio-visual elements, whereas little attention has been given to the effects of various narrative elements used within video games. Many people within the gaming industry believe narrative is the new frontier for gaming development. Advanced in technology, especially computer processing power, speed, and memory capacity, provide game designers the opportunity to create increasingly complex and ornate virtual worlds.

This thesis will examine two narrative elements – setting location and character motivation. More specifically, how a setting the same as the one the game player lives in compares to the effect of an ambiguously relevant setting, on audience arousal. Additionally, how the narrative's rational for character motivation, such as war presented

as either an initial attack effect or an act of retaliation, effects audience arousal. The primary concepts explored include message-relevance, post-exposure arousal, state hostility, and recall. While heavily influenced by the fields of psychology, neuroscience, communication studies, and other social sciences, the research presented in this thesis was conducted within a department of advertising. Discussion is primarily driven by concerns most relevant to media psychology, advertising strategy, and campaign effectiveness measures.

Chapter 2 presents popular literature related to video game narrative, innate human motivation, emotional-arousal and attention-arousal. They are relevant to this study's interest in the effect of narrative elements, such as setting location relevance and character motivations, on audience arousal. This thesis hypothesizes that setting localization will have a greater influence increasing audience arousal than the manipulation of character motivation elements. Chapter 3 will describe in depth the research methodology used for this thesis. In chapter 4 the study results will be broken down in a statistical fashion, applied to the hypothesis, then discussed, and finally considered for future research and discourse.

Chapter 2: Literature Review

NARRATIVE

At present, a vast majority of the effort to increase the realism of computer-mediated narrative entertainment focuses on enhancing the sensory experience, especially with better graphics (Newman, 2002) and sounds (Kramer, 1995). (Shapiro, Pena-Herborn, & Hancock, 2006) Currently, game developers and designers know a great deal more about how to make game elements look real than they do about how to make an audience think or feel it is real. Research and discussion related to video game narratives has centered on narrative realism, perceived realism, and the essential narrative elements necessary for creating realism. (Shapiro, Pena-Herborn, & Hancock, 2006) This is especially true of perceived realism, which may influence mental processing, beliefs, attitudes, and behavior. (Potter, 1988) There is some evidence that increased realism leads to increased enjoyment for dramas. (Shapiro & Chock, 2003; Shapiro, Pena-Herborn, & Hancock, 2006) Some academics have argued that many games are more like theatrical drama than like narrative books. (Laurel, 1998)

This thesis will argue that as an important element of video games, the effects of narrative elements on audience emotions, arousal, attention, and information processing should be thoroughly investigated. Considering the emerging popularity of in-game advertising tactics, it is probable that this area of research will continue to flourish in the near future. As is with any popular area of research, a debate of terminology is a continuous issue with video game research. One such argument related specifically to narratology of video games is presented by Fransca (2003). It is his opinion that "narrative" is the wrong classification for video game story-audience interaction. He has

worked to shift the terminology used within ludology from "narrative" to "simulation." Ludology can be defined as a discipline that studies games in general and video games in particular. Frasca specifies that ludology, by nature, "does not distain the [narrative] dimension of video games but claims that they are not held together by a narrative structure." He argues that ludology is a formalist discipline that should focus on the structure and elements – especially rules – in order to create typologies and models for explaining the mechanisms of games. Not only does Fransca caution the inaccuracy of applying narratology to video games, he also elaborates on why simulation is a more suitable for identification of the stories and rules within video games, rather than narrative. (Frasca, 2003)

Simulation versus Representation

Narrative, has been understood as a particular form of structuring representation - a form of communication relied on for both understanding and explanation of reality. Mark Turner (1998) stated that narrative mechanisms are cognitive structures deeply hard-wired into the human mind. According to Frasca's definition of simulation, "to simulate is to model a (source) system through a different system which maintains (for somebody) some of the *behaviors* of the original system," the difference between representation and simulation is that simulation, unlike representation, includes a model of its behaviors that must operate within a set of conditions, such as rules within a game. The main medium characteristic differentiating video games from audiovisual media is interactivity – the player's involvement and influence on the games story. In the case of narratives such as a film or book, the audience could interpret it (the story) in different ways but cannot manipulate or influence how the story will unfold. By contrast, a simulation presents the audience (or in the case of gaming, player) the ability to perform

actions that will influence the direction the game's story takes. An important note should be made, this level of influence and simulation interactivity is loosely applied to gaming, and differs drastically between story based games and non-story based games. It is this level of interaction that Frasca used as support for terming video games as simulations, containing elements of narrative as well as rules and the potential for behavior trials, rather than purely narratives. Similarly, a narrative's weight [power] comes from the casual logical and inevitability that binds together a sequence of events, whereas a story within a video game draws power from the player's influence on present events (within the innate logistical limitations of the video game medium.) (Juul, 2001)

The purpose of this thesis is not to determine which terminology – narrative or simulation – more accurately applies to video games, but it is important to recognize that the influence of narrative on game play is more complex than pure story-telling. Just as Juul differentiates the relationship between a reader and the non-interactive story being different from that of a player and a game, Frasca stressed the interactive nature of gaming sets it apart from pure narrative elements and models.

This thesis explores whether or not possible variation of a game's narrative elements has an effect on audience arousal. In other words, do different narrative elements presented in video game cutscenes[1] have a significant overall effects on audience arousal. This particular study with explore the influence of localizing a narrative's setting to that of the audience (player) versus that of the character behavioral motivations. This is an important media effect for video games to marketers and strategic advertising planners, as arousal (discussed in depth later on in this character) is a powerful indication of attention, memory, and other cognitive processes.

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[1]Definition of "cutscenes": non-interactive, narrative-centered sequences within video game context. Video games can be broken down into cutscenes and "gameplay": interactive, action-centered sequences. Source: Jakub Majewski. 2003. *Theorising video game narrative*. Bond University, School of Humanities and Social Sciences, Master of Film & Television; Minor Thesis.

As an interesting aside, Frasca postulates that advergames[2] are "likely to be the petri dish for simulation rhetoric," and supports this hypothesis by state that "most advocates of the narrativity of games always compare them to novels, films, or drama." This statement is related to the purpose of this thesis - to identify what elements of narrative have a great enough effect on game player arousal to be strategically considered by marketers when developing an advergame or selecting a gaming narrative/simulation for virtual product placement. Novels, films, dramas, and many other platforms have become popular locations for product placements. It is therefore logical that video games have become popular product placement platforms, given that video games have the potential to produce a much greater level of cognitive involvement and attention between the audience and the game's messages.

Viewing video games as simulations, rather than narrative exercises, is also extremely useful for marketers looking to rationalize media planning strategies incorporating video game product placements for brands, products, people, specific beliefs or attitudes (such as political campaigning). As a simulation, a video game environment allows the audience to interact with the product placement in a structured environment that can be controlled by developers' rules. This is important for several reasons, for example it is vital to create realistic expectations by consumers of products they interact with in gaming simulations. The counterproductive effects of not doing this are extremely expensive, damaging, and dangerous to a product/brand/message in the non-virtual reality.

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[2]Definition of "advergame": the advertisement of a product, brand or organization by using video games; a term combining 'game' and the abbreviation of 'advertising'; regarded as a game with an advertisement purpose. Term was first used by Anthony Giallourakis in January 2000. Source: Kalpaklioglu & Toros. 2011. Viral Marketing Techniques within Online Social Networks. *Journal of Yasar University* 2011. 24(6), 4112-4129.

MOTIVATION

Herbert Petri (1996) describes motivation as, "The concept used to describe the forces acting on or within an organism to initiate and direct behavior." But, most relevant to this paper, is Abraham Maslow's definition of motivation as, "That which is derived from the needs of the person." Applied to the context of video games, motivation plays a significant role in several way, including but not limited to: how and why game players actively attend to the video game medium, how the game player will interact with the game's environment on a cognitive, physical and emotional level, as well as how the relationship between game player and character will dynamically play out. In order to understand an audience's innate motivations, Maslow's Hierarchy of Needs should be thoroughly investigated. In addition, modern interpretation and elaboration of Maslow's need for love and belonging presented by Tay and Diener (2007) help apply socialization needs of the twenty-first century to the basic hierarchy. Based on these innate motivations, continually influencing the emotions, attitudes, and reactions of the audience of the video game cutscenes, this thesis hypothesized that audience (personal) motivations will influence how they emotionally react to narrative elements, that those reactions will vary based in relation to character motivation and setting location.

The understanding of motivation is essential to this thesis' exploration into the effect of motivation manipulation, within video game narrative presentation, on audience post-exposure arousal. In order to understand how different motivational elements differ in their media effects, it is first necessary to understand what motivation is, what the defining characteristics of a motivational element are, and what motivations will be manipulated and appealed to the current experimental design.

Maslow's Hierarchy of Needs Model

In his 1943 article, *Motivation and Personality*, behaviorist Abraham Maslow published what he believed to be the hierarchy of needs that universally exists in human nature regardless of cultural context or age. (Maslow, 1943) Maslow's theories regarding human motivation, while lacking empirical evidence in support of the hierarchy, have become a widely accepted foundational model used through the social sciences. (Huitt, 2007).

Maslow's theoretical point of view was unique because it fundamentally viewed, "the human being as motivated by a number of basic needs which are species-wide, apparently unchanging, and genetic or instinctual in origin." Also, the needs are both psychological and psychological in nature, "the true inner nature of the human species, but weak, easily distorted, and overcome by incorrect learning, habit or tradition." Contrary to popular ancient belief that instincts are strong, unchangeable, and bad, Maslow argues that needs are "easily ignored or suppressed" and are "not bad, but either neutral or good." (Goble, 1970)

This model makes several assumptions regarding human nature based on what Maslow found necessary for a sound theory of motivation: (1) the individual is an integrated, organized whole, (2) desires and drives of the individual are interrelated, and (3) needs are universal regardless of race and culture. (Goble, 1970)

There are five conditions an innate human characteristic of need must follow, according to Maslow, in order for it to be valid. Firstly, the absence of the characteristic must breed illness. Secondly, its' presence must prevent illness. Thirdly, its' restoration must cure illness. Fourthly, in certain, complex, free-choice situation, the characteristic must be preferred by the deprived person over other satisfactions. Fifth, and lastly, the

characteristic must be found inactive, "at low ebb," or functionally absent in a healthy person. (Goble, 1970)

Maslow cautions that viewing the hierarchy of needs too precisely, as a finite order, is incorrect. Many, if not most, people have partially satisfied their basic needs, but may still have some characteristic of their basic needs remaining and unsatisfied. It is most important to understand that unsatisfied needs have the greatest influence on behavior. Once a need has been fulfilled or temporarily gratified, it has a minute effect as a cognitive motivation. (Maslow, 1943, 1970) Here is a more in depth description of each level of the hierarchy as described by Maslow and reviewers of his work since. (Maslow, 1943, 1970; Huitt, 2007; Green, 2000; Goble, 2004)

Physiological Needs

Physiological needs are the fundamental motivation of human nature, that if left unfulfilled or threated will monopolize cognition and over-ride all other motivations. These most basic human needs include air, water, food, sleep, and shelter. While separated and more easily identified than higher level needs, physiological needs are not completely independent and should not be studied in an isolated fashion. (Maslow, 1943) To this end, if a person thinks they are hungry they may actually feel a lack of another, higher level need. Conversely, some people attempt to satisfy basic physiological needs by alternative actions, such as smoking when hungry. In most cases, if unsatisfied, these most basic needs of human nature will override all other cognitive motivations in the interest of self-preservation.

Safety Needs

Safety needs represent the second level of Maslow's Hierarchy of Needs. Once the basic physiological needs are satisfied, cognitive motivation shifts to the objective of safety. By its' most basic definition an organism's chief purpose for existence is survival. An organism may apply all available capacities to the goal of safety. This extremely fundamental principle can be applied to nearly all living things. Its' manifestation in human nature is readily apparent through a person's lifetime and within many complex interpersonal relationships. Today, a healthy, normal, fortunate adult living in The United States is largely satisfied in their safety needs. A broader application of the need for safety can be observed in, "the innate desire for the familiar rather than the unfamiliar, or for the known rather than the unknown." (Maslow, 1943, 1970) Mainly, within the U.S., the need for safety becomes a leading motivation only in emergencies such as war, disease, natural catastrophes, immediate crime or violence, and or injury. (Maslow, 1943; Green, 2000; Goble, 2004)

L*ove and Belonging Needs*

The middle level of Maslow's list of needs is the need for belonging and love. Once the physiological and safety needs are met, motivation shifts to acquiring love, affection, and belongingness. Maslow (1943, 1970) described this stage as, "a hunger for affectionate relations with people in general, namely, for a place in [a] group." Carl Rogers' definition of love as "that of being deeply understood and deeply accepted," was the definition of love preferred by Maslow, who specifically separated need for sex from that of love, contrary to Freudian psychology. (Goble, 2004) Maslow (1943) found that the absence of love stifles growth and the development of potential. It is important to recognize love as a mutual, interpersonal interaction involving mutual trust and that there

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is an innate need to both give and receive love. Broadly applied, the innate need for belonging and love can be applied to the need for socialization. In other words, one's definition and perception of self will grow to include identification with a group, something more complex than the individual self.

Esteem Needs

Maslow's fourth level of need, esteem, can be broken into two main categories-self-respect and esteem from others. The need for self-esteem includes specific characteristics such as, but not limited to, desire for confidence, competence, master, adequacy, achievement, independence, and freedom. Additionally, the need for respect from others includes concepts such as prestige, recognition, acceptance, attention, status, reputation, and appreciation. According to Alfred Adler (1938), a person who is adequately esteemed is more confident and capable, thus, more productive. On the other hand, when self-esteem is inadequately fulfilled, feelings of inferiority and helplessness are experienced, which may lead to discouragement and the possibility of neurotic behavior. It should be noted that deserved respect, rather than unwarranted adulation for fame or celebrity, is the healthiest self-esteem. (Goble, 1970)

Self-Actualization Needs

At the summit of Maslow's hierarchy of needs pyramid is the need for self-actualization. Maslow has described this need as "the desire to become more and more what one is, to become everything that one is capable of becoming." Characterized by the psychological need for growth, development, and utilization of potential, self-actualization generally emerges after "reasonable satisfaction" of the love and esteem needs.

Growth Needs

Maslow published an expansion upon his foundational conversation regarding basic need theory. Here, Maslow theorized an additional higher level group of need characteristics, which he termed "growth needs." He referred to the growth needs as "being-values" or "b-values", whereas he referred to the first four levels of the original hierarchy the "basic, deficiency needs." Maslow articulated that higher needs only become intrinsic motivators once the basic needs are satisfied. He termed this as *metamotivation*. Maslow's additional list of "growth needs" includes, in no particular hierarchy or order, characteristics such as wholeness, perfection, completion, justice, aliveness, richness, simplicity, beauty, goodness, uniqueness, effortlessness, playfulness, truth, honesty, reality, and self-sufficiency. (Maslow, 1943, 1970; Green, 2000; Huitt, 2007)

Tay & Diener's Socialization Needs

It is plausible that Maslow's (1954) needs model is derivable from evolutionary theory (Tay & Diener. 2011; Kendrick, Griskenvicius, Neuberg, & Schaller, 2010; and Hill & Buss, 2007). Veenhoven and Ehrhardt (1995) present the "livability theory," arguing the idea that some societies have characteristics that are innately more desirable based on universal human needs, and therefore people in these cultures have a higher quality of life. This perspective postulates that there are universal circumstances that are innately required for high quality of life, regardless of an individual's immediate environment. More recently, subjective well-being (SWB) has become popular as universal needs were criticized by researchers whom believe socialization uniquely influences the development and perception of well-being for each person, with an emphasis on significant differences between cultures.

Focusing on the universal aspects of human nature (Konner, 2002), "happiness" has become a focal point for research. Tay and Diener (2011), conducted worldwide survey research on adult perception and self-report of human universal needs' and societal needs' fulfillment. In an effort to better understand the influence of societal norms on subjective well-being, characteristics of economics, political climate, standard lifestyle expectations, and cultural norms were considered as potential environmental influences on personal expectations for "happiness."

The most relevant finding, in the human innate needs discussion, involves the support Tay & Diener found for an innate level of societal need. As described in their 2011 publication of their study results, Tay and Diener believe that in addition to Maslow's (1943) list of needs - physiological, safety, love/belonging, esteem, and self-actualization – that a natural need for societal stability and social interaction (socialization) is also innately desired. Additionally, just as Maslow believed the more basic needs must be fulfilled in order for higher level motivations to be considered, Tay and Diener purpose that societal needs co-exist as a motivation along with Maslow's need for love and belonging.

These two models could be organized based on intrinsic and extrinsic needs. While Maslow's list of needs centers about self-concept, Tay & Diener's societal needs broaden the universal needs perspective to include one's identity within society. Maslow's belonging need has been commonly interpreted as a need for immediate belonging within personal relationships and communities, whereas Tay & Diener's societal need recognizes an innate concern for at large community identity, and the individual's need to identify with a broader metaphysical community.

Video games allow players to fulfill this innate need for community identity by creating ornate communities through cutscenes and reinforced with game play. This study

will focus on the influence of narrative elements' influence on the audience arousal. Prior research has examined the influence of various gaming features on aggression (Eastin, Appiah, & Cicchirillo 2009; Eastin 2006, 2007; Eastin & Griffiths, 2006; Farrar, Krcmar, & Nowak, 2006) but mainly in the context of actual game play. Trait and culturally-based norms have been found to influence how players are affected by game play and aggression-related outcomes. (Eastin, Appiah, & Cicchirillo, 2009) By narrowing the audience exposure to cutscenes, prior to expected game play, the subtle manipulations to character psychological motivations and setting can be examined in terms of how they interact to product arousal and state hostility. Within the scope of this study, state hostility is treated as an unpleasant emotion evoked by the audience through exposure to video game narrative.

AROUSAL

Difficult to define, (Lang, 1994; Zillman, 1981; Shapiro, Caldwell & Sorensen, 1997; Russell, 2003; Enns, Jefferies, Smilek, & Eich, 2008; Greenwald, Cook, & Lang; 1989) arousal is closely related in research to attention, learning, memory, emotion, and cognition. That said, from a media perspective, arousal can be defined as, "a state of responsiveness to sensory stimulation or excitability; the act or state of waking from or as if from sleep; the act of stimulating to readiness or action." [3] Within neurology, arousal is defined as "a state of behavioral or physiologic activation which may be accompanied by increased tonic EMG activity and heart rate." [4] Determining the specific definition of arousal is beyond the scope of this thesis, but an overall understanding of the physical

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[3]Dorland's Medical Dictionary for Health Consumers. 2007. Saunders, an imprint of Elsevier, Inc. Referenced February 2012 from medical-dicationary.thefreedictionary.com/arousal
[4]McGraw-Hill Concise Dictionary of Modern Medicine. 2002. By The McGraw-Hill Companies, Inc. Referenced February 2012 from medical-dicationary.thefreedictionary.com/arousal

manifestations of arousal, the psychological processes associated with arousal, and the relationship between emotions and arousal is extremely relevant.

Psychophysiology of Arousal

The autonomic nervous system, a division of the central nervous system that controls many of the automatic functions of the body, controls the heart. The autonomic nervous system is split into two systems: the sympathetic division and the parasympathetic division. Arousal may result in a speeding up or slowing down of the hart depending on what a person is doing. The sympathetic division is responsible for the speeding up of the heart, whereas the parasympathetic division is responsible for the slowing down of the heart. Parasympathetic arousal causes the heart to slow down and is associated with attention. Sympathetic arousal speed the heart and is associated with emotional arousal.

Arousal and Attention

How much attention a person is paying to something can be determined by heart rate at the time of exposure.

There are two types of attention; long term or tonic attention and short term or phasic attention. (Rosenzweig et al., 1996; Lang, 1994; Kalat, 2013) Phasic attention is associated with short-term changes in attention that involve the orienting response – short-term attention reaction brought about by stimuli that are novel, learned, intense, complex, and/or surprising. When a personal orients to something they experience specific physiological changes, specifically their heart slows down two to five beats immediately following the exposure to orienting stimuli. Such analysis of short-term

changes in heart rate to discover which aspects of a media exposure bring about orienting responses allows more precise understanding of what causes shifts in direction and intensity of attention. Tonic attention is associated with long-term changes in attention often associated with vigilance, concentration, or thinking. Generally, as long as the task is continued, the increase is heart rate attributed to tonic attention will be maintained and is therefore easily observed with heart rate analysis. (Lang, 1994, Kalat, 2013)

In summary, short-term attention slows-down the heart rate and long-term cognitive work speeds-up heart rate. Even more specifically, tasks that involve paying attention to an external stimulus result in slower heartbeat, while tasks of a more intrinsic nature, focusing on internal thoughts, cause a faster heartbeat. (Lang, 1994)

Arousal and Emotion

Heart rate can to some extent provide insight into the feelings of an individual, though not as directly as heart rate to type of attention. (Greenwald, Cook, & Lang; 1989) Both, arousal and emotion are extremely difficult to define and there is much debate over what they are or what stimuli induces them. (Lang, 1994; Lang, Newhagen, Reeves, 1996; Kalat, 2013) Joseph LeDoux (1996) eloquently said, "Unfortunately, one of the most significant things ever said about emotion may be that everyone knows what it is until they are asked to define it."

Among emotional theorists, the general agreement is that core mood states can be organized using the dimensions of valence and arousal. (Enns, Jefferies, Smilek, & Eich, 2008) These two major dimensions of emotion – arousal and valence (or direction) – are defined in terms of ranges from excited to calm (for arousal), and happy versus sad or pleasure versus displeasure for valence. (Lang, 1994) Theorists disagree mainly on whether they label the dimensions "please-misery" and "sleep-arousal" (Barrett &

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Russell, 1999) or "pleasant-unpleasant" and "activation" (Larsen & Diener, 1992). While useful, measure of heart beat is not a sound measure of the sympathetic arousal (usually associated with emotion) alone (Lang, 1994; Greenwald, Cook, & Lang, 1989; Zillman, 1981) and therefore should be cautiously appraised for value and combined with addition measures of arousal, attention, emotion, and cognition.

It is imperative to understand that different emotional experiences, while producing similar states of arousal or valence, do not necessarily imply the same feel or cognitive processes. As Lang explains (1994), "anger, fear, jealousy, grief and contempt are all unpleasant high-arousal states, but this does not imply that they feel the same way. Emotional experiences are differentiated by attribution processes individuals make to interpret the causes of a given mood state (Russell, 2003)."

In a study conducted by Enns et al. (2008) moods were compared varying independently in valence (negative versus positive) and arousal (low versus high). Their study examined the relationship between visual attention and the self-reported mood of participants. Instead of finding separate influences of arousal or valence, the results indicated that it was specific combinations of these emotional dimensions that best predicted performance in secondary-reaction exercise post exposure to visual stimuli. Most notably, sadness (low-arousal & negative affect) produced the highest levels of performance, anxiety (low-arousal − negative affect) led to the lowest levels of performance, and calm and happy states (low and high arousal combined with positive affect) were associated with intermediate performance. These finding led to the authors' argument that emotion may be linked to attention through connections that are unique to specific attributed emotional states such as sadness, anxiety, happiness, etc. This is in alignment with the position long held by theorists studying the neural basis of various emotional attributions. (Ekman, 1999; LeDoux, 2000; Enns, Jefferies, Smilek, & Eich,

2008) Now, most relevant to this thesis' scope, according to a study conducted observing attentional blink reactions within group settings, effects of arousal can be seen in the greater efficiency of processing when stimuli are emotionally relevant to the participant. (Shapiro, Caldwell, & Sorensen, 1997)

Nabi (1999), purposes that emotions determine information-processing style. She cites several studies suggesting motivation, rather than ability, to be the mediator in the relationship between emotional arousal and cognitive processing. It is understood that unpleasant emotions heighten cognitive processing. In the case of unpleasant message exposure, Forgas's (1992, 1995) affect infusion model (AIM) says that if the receiver (audience) believes a message might somehow help achieve the motivating objective to elevate displeasure, said message is more likely to be processed instead of ignored.

That said, the purpose of the thesis is to identify how specific narrative elements used in video game cutscenes (character motivation and setting location relevance) influence audience arousal, and therefore potentially influencing audience attention, information processing, and recall. These findings support the hypothesis that localization of narrative setting – making the setting more personally relevant to the audience - will increase audience arousal. Based on the literature related to motivation, as well as the character elements that influence on arousal and state hostility in video game play, and understand of emotion and arousal; this study hypothesizes that the localization of narrative setting – making the setting more personally relevant to the audience based on setting location – will increase audience arousal more so than the manipulation of character motivation – situational factors influencing character motivation to participate in hostile war efforts.

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To this end, the following interaction is hypothesized:

> **H1:** There will be a significant narrative localization by motivation interaction such that for participants in the ambiguous narrative will have a smaller arousal effect for motivation compared to participants in the local narrative setting.

Chapter 3: Research Methodology

The videogame used for narrative content was *Home Front*, by Kaos Studios[5] and published by THQ Inc.[6] A narrative introduction sequence video from the actual game was used as inspiration for the creation of new narrative videos, each uniquely edited to communicate the manipulations specific to the four conditions of the study. Video and audio clips from real news reports were combined with video graphics from the game's introduction narrative. This was done to maintain the esthetic presented in the video game environment while priming the audience with the study conditional manipulations.

The study design was a two-by-two conditional matrix, Table 1 (below), consisting of Local versus Ambiguous setting manipulations and Attack versus Retaliation character motivation manipulations.

	Attack	Retaliation
Local	Local Attack (LA)	Local Retaliation (LR)
Ambiguous	Ambiguous Attack (AA)	Ambiguous Retaliation (AR)

Table 1:   Condition Matrix

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[5]Kaos Studios was an American video game developer based in New York City. Formed in 2006, the studio focused on first-person shooter video games. Kaos Studios closed permanently in June 2011. (Source: Eurogamer.net)
[6]THQ stands for "Toy Head-Quarters". The American developer and publisher of video games was founded in 1989 in the United States. The company develops products for video game consoles, handheld game systems, personal computers, and wireless devised. The company holds exclusive, long-term agreements with leading sports and entertainment content creators including WWE, Games Workshop, Ultimate Fighting Championship (UFC), Nickelodeon and Disney-Pixar.

Local versus Ambiguous: Setting Manipulation

Participants were exposed to one of two setting manipulations. The "Local" condition incorporated messages, visually and textually, that reinforced the setting of the narrative to be taking place in Austin, Texas, USA. It should be noted, Austin was picked for the localized setting because The University of Texas, and therefore the student participants, were current residents. The main point of this manipulation was to position the narrative's location as the same as the audience's current city of residence. The "Ambiguous" condition presented the location of the narrative as taking place in a city of a border state and quickly moving inland within the United States. Based on the contextual information they were given, participants would not be able to identify the exact location of the story, other than that it was taking place in the United States of America.

Of the 82 participant assignments, 20 were AA (24.4%), 20 were AR (24.4%), 21 were LA (25.6%) and 21 were LR (25.6%). This was also broken down by manipulation variable; ambiguous versus local narrative setting and attack versus retaliation character motivation. 51.2% (n= 42) were exposed to the localized narrative setting condition, whereas 48.8% (n= 40) were exposed to the ambiguous narrative setting condition. The participant were evenly distributed (50% and 50%, n= 41) to the character motivation conditions – attack versus retaliation.

Narrative Setting Recall Accuracy

The "Local" condition incorporated messages, visually and textually, that reinforced the setting of the narrative to be taking place in Austin, Texas, USA. The "Ambiguous" condition presented the location of the narrative as taking place in a city of a border state and quickly moving inland within the United States.

In the post-survey, participants manually reported "where [they] believed the story was taking place." In post-analysis, these responses were recoded into a new recall accuracy variable and coded as either "correct" or "incorrect" identification of their specific conditions narrative setting.

Of the participants, 53.6% (n= 44) correctly identified the location of their narrative, 30.4% (n= 25) incorrectly identified the location of their narrative, and 16% (n=13) did not respond and indicated they did not believe they could accurately respond.

Attack versus Retaliation: Character Motivation Manipulation

Participants were exposed to one of two character motivations manipulations related to hostile actions in a war situation. The "Attack" condition presented the narrative with the story being that the United States had declared war on Korea and had initiated hostility by bombing a large Greater Korean Republic city, killing 300,000 civilians, soldiers, and government officials. The GKR had retaliated and had brought the war's front line to the United States. The specific location was dependent upon which setting condition the participant was assigned to. The "Retaliation" condition was exposed to a narrative involving the GKR declaring war on the USA and initiating violent acts of war against the USA. The narrative's characters were now part of the citizens' army leading the retaliation against the GKR army now occupying the USA. Once again, the specific location was dependent upon which setting condition the participant was assigned to. With these character motivation manipulations in mind, it was hypothesized that:

STUDY DATA COLLECTION PROTOCOL

Data collection was conducted in a lab located in The College of Communications' building on campus. Participants were recruited from various classes, signed up for specific appointments through on online system, and arrived at the study with no prior knowledge of the

study content, other than the title of the study as the "Video game study" as it was commonly referred to in the department by student, faculty, and lab proctors. Regular data collection took place during weekdays between the hours of 9am and 5pm. The study was available to students for several weeks throughout the semester.

Once in the lab, participants were assigned an identification number and randomly assigned to one of four conditions. After being briefly prepared by a lab proctor that the study consisted of a pre-survey, watching a video, and ended with a post-survey, the participant was randomly assigned to one of ten computers in the lab. Once the pre-survey, was completed, the participant was promoted by the survey conclusion screen to have the lab protocol start the next step of the study. The lab proctor would come to the student's computer station and ask the participant to wear headphones while watching a full screen video. It should be noted that the participant was not given control over the pre-set volume of the video's audio. The participant was then left alone at their computer station to watch the video which lasted roughly two and a half minutes.

The lab proctor would return to the computer station at the end of the video. Participants were specifically asked if they had been able to complete the video and offered more time if not. With headphones removed, the participant was presented with the post-survey. The lab proctor informed the participant that to read the survey questions carefully, as this survey was more detailed than the previous one. Participants were then left to complete the post-survey.

Once they had completed the final survey, participants were thanked for their help and given the opportunity to address the lab proctor with any questions or concerns they might have had regarding the study.

The study included a pre- and a post-exposure online survey. The pre-exposure survey was designed to collect basic information such as gender, age, birth place, "hometown", video game play experience, video game play frequency, and video game platform usage. The post-exposure survey included scales for post-exposure arousal, state hostility, and narrative setting (localization manipulation) free-recall questions. The exact scales used in the surveys can be found in *Appendix A: Survey Scales – Arousal Scale & Appendix B: Survey Scale – State Hostility Scale.*

Dependent Variable

Arousal Scale

A bipolar semantic differential scale consisting of seven levels of separation between terms was used. The semantic differential pairs used included "relaxed : stimulated," "calm : excited," "sluggish : frenzied," "dull : jittery," "sleepy : wide-awake," and "unaroused : aroused."

Control Variable

State Hostility Scale

Consisting of 32 items, state hostility was measure using "I feel" statements. Participants identified their level of agreement or disagreement with the statement using a seven point likert scale. The thirty-four descriptive elements used in the state hostility scale included: furious, aggravated, tender, stormy, polite, disconcerted, like banging on a table, irritated, frustrated, kindly, unsociable, outraged, agreeable, angry, offended, disgusted, tame, like I'm about to explode, friendly, understanding, amiable, mad, bitter, burned up, like yelling at somebody, cooperative, like swearing, cruel, good-natured, disagreeable, enraged, and sympathetic.

Chapter 4: Study Results

The study participant sample consisted of 82 participants.

Of those who completed the study, 52.4% (n= 43) were male, and 47.6% (n= 39) were female. The age of the participants ranged from 18 to 32 years old, with a mean age of 20.5 years old, forty-four percent. 43.9% (n= 36) were Freshman, 22% (n= 18) Sophomores, and 34.1% (n= 28) Juniors.

Player Gaming Experience: 96.3% (n= 79) of participants had played a video game before, whereas only 3.7% (n= 3) of participants had never played a video game prior to the study. Further, 13.4% (n= 11) never play video games, 31.7% (n= 26) play less than once a month, 8.5% (n= 7) play one a month, 18.3% (n= 15) play 2-3 times a month, 3.7% (n= 3) play once a week, 12.2% (n= 10) play 2-3 times a week, and 12.2% (n= 10) play video games daily. Overall, 72% play video games less than once a week and 87.8% play less than daily.

RESULTS

Although a significant interaction was detected, it was not as hypothesized. After controlling for gender $F(1, 81) = .166$, $p > .05$, and state hostility $F(1, 81) = 17.59$, $p > .05$, a significant interaction was detected for the manipulation of character motivation, attack versus retaliation, on arousal $F(5, 81) = 4.90$, $p > 0.5$, $\eta_p^2 = .24$ (Figure 1). Here, greater arousal ($F(1, 81) = 7.05$, $p < .05$, $\eta_p^2 = .09$), was experienced by those exposed to retaliation character motivation (M= 5.72, SE= .81), compared to those exposed to attack character motivation (M= 4.88 , SE= 1.32) within the ambiguously defined setting location manipulations. However, within the localized setting manipulations, audience arousal did not differ ($F(1, 81) = .034$, $p > .05$) between those exposed to retaliation character motivation (M= 5.28, SE= 1.19) and those exposed to attack character motivation (M= 5.33, SE= 1.35).
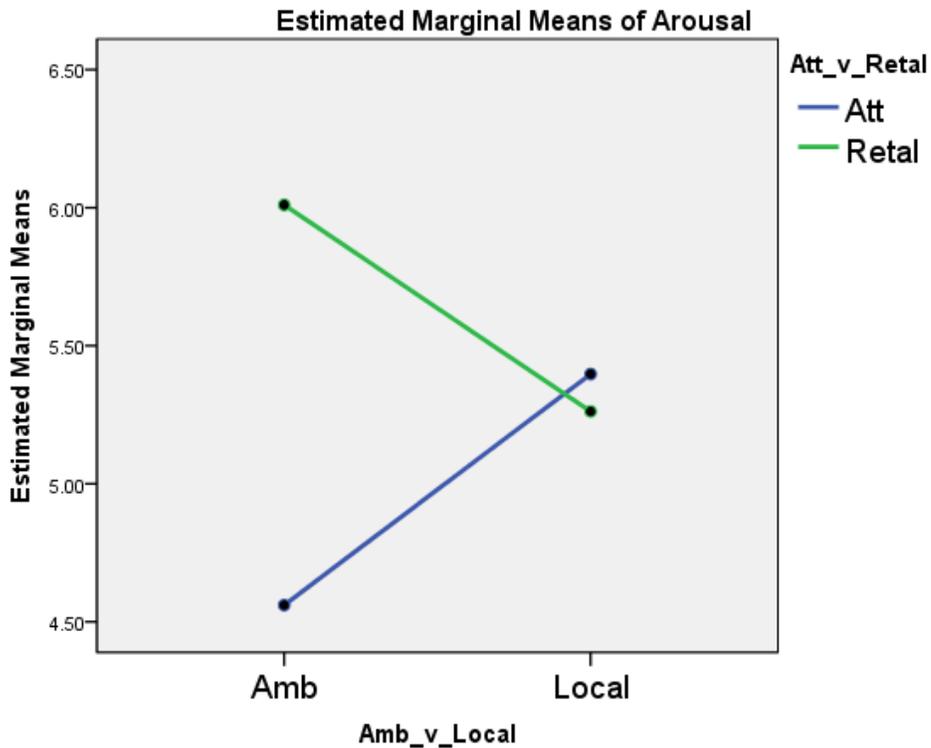
Figure 1: Statistically Significant Arousal Results

DISCUSSION

The findings indicate that character motivation has a greater influence on audience arousal when placed in an ambiguous setting rather than a localized setting. It was hypothesized that localization of the narrative setting - increasing personal relevance - would increase the motivational elements of the narrative. The results do not support this hypothesis and interestingly, the opposite seems to be the case. Instead of being a matter of the personal relevance of location, it may be the audiences' emotional response to the characters psychological profile has the greater influence on arousal. Meaning, once the narrative was localized the motivational elements became less relevant. In the ambiguous setting participants

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were left to "fill in the" narrative which, based on this data, increases message elements such as motivation. Further phases of this study should incorporate methods to identify what specific emotions are being experiences by the audience, what narrative elements are evoking those emotions, and how those combined elements effect audience arousal, attention, and recall ability. In order to validate the type of arousal being experiences, a mixed-methodology of heart rate data collection and surveys containing scales on a variety of emotions should be used. The psychophysiological data, consisting of at least heart rate, will allow researchers to more accurately identify the arousal experienced by each of the character motivation manipulations as associated with either phasic attention (external environment) or tonic attention (internal thought). Because the concepts of arousal, attention, emotion, and cognitive processing are so closely related, it is most likely impossible to isolate them for individual research.

This is all relevant to the pursuit of identifying what elements marketing strategists should consider when developing advergames and product placements within games, in order to maximize message effectiveness. While research has been done to better understand the effectiveness of in-game advertising, little research has examined the power of narrative elements to effect the emotional state of the audience and in turn foster increased attention, arousal, information processing capacity, attitude change, behavior change, and recall (or not).

Greater understanding of the relationship between emotion and information processing is extremely valuable to advertising strategists. If the emotions invoked by narrative elements have an impact on the audiences' potential for attitude change, behavior change, and message recall, branding messages could be crafted so as to not purposefully evoke emotional responses that will hinder the placements effectiveness. Specific to video game product placements and advergame development, strategists would have greater insight as to where to place their products/brands/messages within the gaming environment based on narrative elements. As the evolution of technology continues to drive the creation of increasingly complex advertising tactics, understanding of the interaction between brands and audiences becomes increasingly

complicated. Therefore, research of this nature is not only relevant and necessary, but increasing in popular demand.

Appendix A: Survey Scales – Arousal Scale

I felt that during the game introduction I was...

	1	2	3	4	5	6	7	
relaxed	○	○	○	○	○	○	○	stimulated
calm	○	○	○	○	○	○	○	excited
slugglish	○	○	○	○	○	○	○	frenzied
dull	○	○	○	○	○	○	○	jittery
sleepy	○	○	○	○	○	○	○	wide-awake
unaroused	○	○	○	○	○	○	○	aroused

Appendix B: Survey Scales – State Hostility Scale

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel furious.	◎	◎	◎	◎	◎	◎	◎
I feel willful.	◎	◎	◎	◎	◎	◎	◎
I feel aggravated.	◎	◎	◎	◎	◎	◎	◎
I feel tender.	◎	◎	◎	◎	◎	◎	◎
I feel stormy.	◎	◎	◎	◎	◎	◎	◎
I feel polite.	◎	◎	◎	◎	◎	◎	◎
I feel disconcerted.	◎	◎	◎	◎	◎	◎	◎
I feel like banging on a table.	◎	◎	◎	◎	◎	◎	◎
I feel irritated.	◎	◎	◎	◎	◎	◎	◎
I feel frustrated.	◎	◎	◎	◎	◎	◎	◎
I feel kindly.	◎	◎	◎	◎	◎	◎	◎
I feel unsociable.	◎	◎	◎	◎	◎	◎	◎
I feel outraged.	◎	◎	◎	◎	◎	◎	◎
I free agreeable.	◎	◎	◎	◎	◎	◎	◎
I feel angry.	◎	◎	◎	◎	◎	◎	◎
I feel offended.	◎	◎	◎	◎	◎	◎	◎
i feel disgusted.	◎	◎	◎	◎	◎	◎	◎
I feel tame.	◎	◎	◎	◎	◎	◎	◎
I feel like I'm about to explode.	◎	◎	◎	◎	◎	◎	◎
I feel friendly.	◎	◎	◎	◎	◎	◎	◎
I feel understanding.	◎	◎	◎	◎	◎	◎	◎
I feel amiable.	◎	◎	◎	◎	◎	◎	◎
I feel mad.	◎	◎	◎	◎	◎	◎	◎
I feel bitter.	◎	◎	◎	◎	◎	◎	◎
I feel burned up.	◎	◎	◎	◎	◎	◎	◎
I feel like yelling at somebody.	◎	◎	◎	◎	◎	◎	◎
I feel cooperative.	◎	◎	◎	◎	◎	◎	◎
I feel like swearing.	◎	◎	◎	◎	◎	◎	◎
I feel cruel.	◎	◎	◎	◎	◎	◎	◎
I feel good-natured.	◎	◎	◎	◎	◎	◎	◎
I feel disagreeable.	◎	◎	◎	◎	◎	◎	◎
I feel enraged.	◎	◎	◎	◎	◎	◎	◎
I feel sympathetic.	◎	◎	◎	◎	◎	◎	◎
I feel vexed.	◎	◎	◎	◎	◎	◎	◎

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