ABSTRACT

An Exploration of Flow through the Leisure Pursuits of Adult Science Fiction Fans

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The purpose of this ethnographic, cross case study analysis was to a) explore why individuals have a sustaining interest in science fiction-related leisure activities, b) describe the role, if any that Csikszentmihalyi’s theory of flow plays in the continuation of these activities, c) explain how these interests initially developed, and d) determine if science fiction related knowledge transfers to other domains. Results from interviews with 10 adult science fiction fans revealed that elements of flow were found across cases and that science fiction-related knowledge transferred to other domains. Patterns found relating to flow, development, change and evolution and transfer clustered into one of three overarching categories that contributed to the development of and sustaining interest in science fiction-related leisure activities. Practical significance as it relates to the role of interest in learning as well as possible avenues for future research was discussed.
An Exploration of Flow through the Leisure Pursuits of Adult Science Fiction Fans

by

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CHAPTER ONE

Introduction

Adult Leisure Pursuits and Flow

The following study was an exploration of flow through the leisure pursuits of adult science fiction fans. According to Neulinger (1981), leisure pursuits are activities that are freely chosen and pursued for their own sake. Freedom and intrinsic motivation are their hallmarks. Because of the integral role of freedom of choice, personal interest and intrinsic motivation in leisure pursuits, the main theoretical framework supporting the current study was Csikszentmihalyi’s theory of flow (Csikszentmihalyi, 1982, 1990; Csikszentmihalyi & LeFevre, 1989; Csikszentmihalyi & Rathunde, 1992; Kubey & Csikszentmihalyi, 1990).

Over the past 30 years, Mihaly Csikszentmihalyi has conducted numerous studies on what motivates individuals to pursue activities that are not rewarded by tangible reinforcers (Csikszentmihalyi, 1982, 1996; Csikszentmihalyi & LeFevre, 1989; Kubey & Csikszentmihalyi, 1990; Csikszentmihalyi & Rochberg-Halton, 1981; Moneta & Csikszentmihalyi, 1996). In essence, his theory of flow is the culmination of decades of research on the positive aspects of the human experience--joy, creativity and the process of total involvement with life (Csikszentmihalyi, 1990). According to Csikszentmihalyi (1990), people who learned to control their inner experience were able to determine the quality of their lives. This higher quality of life was obtained through the stretching of one’s mind in a voluntary effort to accomplish something difficult and worthwhile which
in turn resulted in intense enjoyment and increasing cognitive complexity
(Csikszentmihalyi, 1990).

In Beyond Boredom and Anxiety, Csikszentmihalyi stated that the goal of the
study presented in the book was to explore activities that appeared to contain rewards
within themselves, did not rely on material incentives and were essentially unproductive;
meaning playful. For this reason, leisure pursuits such as rock climbing, social dancing,
chess and basketball were studied (Csikszentmihalyi, 1982). One premise of the study
was that the gap between work and leisure was a bridgeable one. Hence, through the
study of play one might learn how work can be made more enjoyable and how to
decrease dependence on tangible rewards in other areas of life (Csikszentmihalyi, 1982).
Csikszentmihalyi found through his research that every flow activity had a number of
things in common: a sense of discovery, a creative feeling of transporting the person into
a new reality and achievement of higher levels of performance. In short, it transformed
the self by making it more complex (Csikszentmihalyi, 1990).

Flow activities are the perfect blend of challenge and skill level since they keep an
individual from experiencing anxiety when the challenge is beyond an individual’s
abilities or from experiencing boredom when the challenge is below an individual’s
abilities. For example, when a person is learning how to play the piano, they will most
likely be frustrated at first because the challenge is greater than the individual’s skill.
However, as the person practices, the skill level eventually matches the challenge,
creating an enjoyable state of flow. In contrast, if the challenge is not increased, the
person will become bored. Challenges must continue to increase as skills increase and so
on. This cycle creates a setting for personal growth and fosters ever increasing cognitive
complexity because the individual is in constant pursuit of the flow state (Csikszentmihalyi, 1990).

Csikszentmihalyi further explained that this phenomenology of enjoyment has nine major components:

*The activity has clear goals each step of the way.* When something is enjoyable, it has clear goals. In a flow state individuals always know what need to be done next. There is no ambiguity.

*There is immediate feedback to one’s actions.* Individuals are always aware of how they are doing. For example, the musician hears right away whether the note played is the right one.

*There is a balance between challenge and skill.* Individuals know when abilities are well matched to the opportunities for action. If there is a mismatch, boredom or anxiety results.

*Action and awareness merge.* In a flow state, an individual’s mind does not wander from the task at hand. This intense focus is a requirement for the matching of challenges and skills and made possible by the clarity of goals and constant feedback.

*Distractions are excluded from consciousness.* This is an awareness of what is relevant in the here and now. Flow is the result of intense concentration on the present which temporarily relieves an individual from the usual worries of everyday life. For example, if the musician is thinking about financial or health problems, she is more likely to hit the wrong note.
There is no worry of failure. While in a flow state, an individual is too immersed in the task at hand to be concerned with failure. Another reason why failure is not usually an issue is due to the matching of challenges and skills.

Self consciousness disappears. In everyday life, individuals are concerned with how they appear to others. They are on the alert for potential slights and anxious to make a good impression. This awareness of self disappears in the flow state. For example, the athlete moves at one with the team or the reader of the novel “lives” for a few hours in a different reality.

The sense of time becomes distorted. Generally in a flow state an individual “forgets” time. Hours may pass by in what seem like a few minutes. The sense of time comes to depend not on the clock but on what the individual is doing.

The activity becomes autotelic. Whenever most of these conditions are present, individuals begin to enjoy whatever it is that produces such an experience. The activity is being engaged in simply for its own sake. It becomes autotelic, which is Greek for something that is an end in itself (Csikszentmihalyi, 1996).

Csikszentmihalyi stated that flow could be found in many different types of activity. The athlete finds flow in movement and athletic skill, the reader finds flow in the immersion of a good book and the scientist finds flow in playing with abstract ideas. Flow can even be found in good conversation (Csikszentmihalyi, 1990).

There are also hints of flow-like behavior in the literature on science fiction fans. Jenkins (1992a), when referring to science fiction fans, noted that “when one wins some space within the social formation, it has to be filled with something; presumably
something one cares for passionately” (p. 283). Science fiction fans are engaged in activities simply for their own sake (i.e., autotelic). Jenkins noted that science fiction fans react against unsatisfying situations by establishing a weekend-only world. This creation of new worlds is also reminiscent of another condition of flow--the disappearing of awareness of self. These individuals are able to live for a weekend in a different reality without fear of how they appear to others. One science fiction fan explains it another way:

Some people change jobs, move to another city or seek a new significant other in hopes of making their lives more meaningful and creating a more satisfying self. These fans self-create the place they prefer. We are all looking for the same place--one in which our lives are validated. Part of what you’re doing is looking for your own place, trying to find something you’re good at, something that validates your existence (Hazlett, 2002, p. 74).

At the very core of the theory of flow is the idea that individuals are able to control their inner experience and create meaning in their lives through various activities. Or, as in the words of the science fiction fan previously quoted, it is all about creating a more satisfying self.

*Adult Interest and Knowledge Acquisition*

According to a study conducted by Johnson, Alexander, Spencer, Leibham and Neitzel (2004), intense individual interests were ongoing, deepening relations within particular domains. These relationships were characterized by full engagement, positive affect and a rich and expanding declarative knowledge base. Johnson et al. (2004) further elaborated by noting that interests were relationships with objects or domains that were personally meaningful and could be fostered through either internal factors such as prior knowledge or subjective value or external factors such as the influence of others or world
experiences. These researchers went on to state that acquiring expertise in any domain of information was a manifestation of cognitive competence. Thus, having more knowledge about a domain may make an individual more confident about learning new information (Johnson, et al., 2004). These researchers also believed that sustained interest was likely to promote the acquisition of rich networks of knowledge. Examining whether a relation exists between an individual’s cognitive abilities and the degree to which interests are sustained over long periods of time will help others better understand the basis for previously reported relations between expertise and intelligence (Johnson & Eilers, 1998). Investigations are crucial for understanding the mechanisms through which intense interests are sustained and how such interests impact learning (Johnson, et al., 2004).

Studies on adult intelligence also highlight the role of domain relevant knowledge acquisition as it pertains to both personal interests and intelligence. Reeve and Hakel (2000) conducted a study that assessed the relationship between individual interests and knowledge acquisition within specific domains. The researchers argued that learning in any domain cannot be fully understood as a purely rational, coldly cognitive enterprise. Motivational or affective factors such as interests play a critical role in human learning and development (Reeve & Hakel, 2000). In a study by Rolfhus and Ackerman (1999), twenty academic knowledge tests were developed to locate domain knowledge within a network of traits. One of the findings was that domain specific knowledge correlated positively with personal interests. Finally, Alexander, Jetton and Kulikowich (1995) argue that recent perspectives on adult intellectual development and talent generally stress “that it is the continuous integration of new knowledge and increasing
specialization of procedures for handling information within knowledge domains that are at the core of cognitive development throughout the adult life span” (Alexander, Jetton & Kulikowich, 1995, p. 559).

**Summary of Flow, Interests and Knowledge Acquisition**

Csikszentmihalyi (1990) postulated that people who learn to control their inner experience will have greater control over the quality of their lives and that this was obtained through the stretching of one’s mind in an effort to accomplish something difficult and personally meaningful. This process resulted in intense enjoyment and increasing cognitive complexity. Johnson et al. (2004) also argued that acquiring expertise in a specific domain of knowledge was a manifestation of cognitive competence and that sustained interest was likely to promote the acquisition of rich networks of knowledge. These researchers additionally stated that having more knowledge about a domain may make an individual more confident about learning new information (Johnson et al., 2004). This idea was also supported by Csikszentmihalyi’s (1982) earlier work that stressed through the study of play one might learn how work can be made more enjoyable and how to decrease dependence on extrinsic rewards in other areas of life. Personal interests play a critical role in human learning and development as the continuous integration of new knowledge and increasing specialization of procedures for handling information within knowledge domains are at the core of adult cognitive development. It is also noted in the literature that increased quantity and sophistication of domain specific knowledge not only leads to better decision accuracy but also facilitates more efficient and adaptive knowledge acquisition strategies (Alexander, Jetton & Kulikowich, 1995; Reeve & Hakel, 2000). The following section will highlight
how adult science fiction fans acquire and use domain specific knowledge in their leisure activities.

**Adult Science Fiction Fans**

There is a great deal of literature on individuals who pursue science fiction related leisure pursuits (Bacon-Smith, 2000; Harris & Alexander, 1998; Hassler, 1983; Hazlett, 2002; Jancovich, Reboll; Jarvis, 1985; Jenkins, 1988; Jenkins, 1992a; Jindra, 1994; Kozinets; 2001; Lewis, 1992; Obst, Zinkiewicz & Smith, 2002; Sanders, 1994; Stringer & Willis, 2003; Wooley, 2001). Many of the studies described leisure activities of science fiction fans and explained what takes place at science fiction conventions, however, none of the studies examined science fiction related leisure pursuits within the context of flow. Thus, studying a new leisure pursuit within the context of flow may yield new insights into the theory as well as new insights into why and how science fiction fans initially develop and in turn sustain their interest in this particular domain.

Science fiction related knowledge spans several areas of cognitive competence. Many science fiction fans are motivated not simply to absorb text found in either written or electronic media, but to translate it into other types of cultural and social activity. Reception goes beyond transient comprehension of a viewed episode or read book towards some more permanent and material form of meaning production (Lewis, 1992). These individuals use their experiences as the basis for other types of artistic creation--writing new stories, composing songs, making videos, creating elaborate costumes and producing original works of art (Lewis, 1992). Science fiction fans are consumers who also produce, readers who also write and spectators who also participate. They produce artwork, communities and alternative identities that draw on materials from the dominant
media and employ them in ways that serve their own interests and facilitate their own pleasures (Lewis, 1992).

Hazlett (2002), reported that science fiction fans experienced popular stories as purposeful, imaginary-yet-real journeys. They engaged in reflective thought, both about home and about the people they encounter on the journey. One individual in this study mentioned creating mental maps of familiar universes found in science fiction media as a part of his imaginary journey. “I like universes that I know…I can go in there and get the whole universe mapped out in my head--every story that’s a part of that universe builds onto that” (Hazlett, 2002, p. 38).

The Purpose of this Study

In addition to revealing new information on flow, interests and knowledge acquisition in certain domains, the results of this study may aid in the education of children and youth. According to Winner (2000), many highly intelligent children have powerful interests in domains in which they have high ability. They can focus so intently on work in these domains that they lose sense of the outside world. Winner further stated that this “rage to master” characterized many children who traditionally have high intelligence and excel in school. It also characterized children who have traditionally been classified as talented and have excelled in a specific domain such as art, music or athletics (Winner, 2000). According to Winner, these children would be better educated if teachers sought to find out what motivates and excites individual students and then harness this drive towards learning other subjects (Winner, 2000).

A study by Hong, Whiston and Milgram (1993) also highlighted the importance of studying personal interests in children and youth. The researchers used the Tel-Aviv
Activities Inventory to study whether leisure pursuits predicted adult accomplishment better than conventional predictors such as intelligence or school grades in highly intelligent junior/senior high school students. According to Hong, et al., leisure activities are intrinsically motivated out-of-school hobbies and activities that people do for their own enjoyment. Even though these activities are not formally related to school work, they may be highly intellectual endeavors. The results of the study revealed that adolescent leisure activities were valid predictors of adult occupational choice.

Researchers also believed that sustained interest was likely to promote the acquisition of rich networks of domain relevant knowledge (Johnson & Eilers, 1998). Thus examining an individual’s motivation for developing and sustaining a certain interest may help others better understand the role that interest plays in adult learning and cognition (Ackerman & Heggestad, 1997; Ceci & Liker, 1986; Johnson & Eilers, 1998; Reeve & Hakel, 2000).

In summary, there have been numerous studies conducted on the role of flow in leisure activities such as rock climbing, social dancing, chess and basketball (Csikszentmihalyi, 1982; 1990) however, none has been conducted on the role of flow in the leisure activities of science fiction fans. There also has not been any studies conducted that examine individuals’ motivations for developing and sustaining an interest in science fiction and whether or not the knowledge gained from that interest transfers to other domains. Therefore the main purpose of this study was to address these gaps in the literature and hopefully provide new and fresh insights for future researchers on adult interests and knowledge acquisition and the role of flow in leisure activities.
Statement of the Problem

The main purpose of this study was to explore why individuals have a sustaining interest in science fiction related leisure activities, determine the role, if any, that flow plays in the continuation of these activities, explore how these interests initially developed and determine if science fiction related knowledge transfers to other domains.

It is hoped that the results of this study reveal a greater understanding of the mechanisms through which interests are sustained and how such interests impact learning and personal growth and fulfillment in other areas of life such as school or work. To that end, the following research questions formed the basis of the current study:

Question #1: How is science fiction related knowledge integrated into the participants’ leisure activities?

Question #2: To what extent are components of flow evident in the participants’ leisure activities?

Question #3: How do the participants’ interests in science fiction related leisure activities initially develop?

Question #4: To what extent has this interest changed and/or evolved from its inception to the present and if so, how?

Question #5: To what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perception about learning new information in other domains?
CHAPTER TWO

Literature Review

Introduction

Initially, Csikszentmihalyi’s theory of flow was used as a theoretical framework for studying the leisure pursuits of adult science fiction fans. This theory has been used in numerous studies of leisure activities and included a well structured framework for studying personal interests. The theory of flow is a theory of emergent motivation that assists an individual in acquiring domain relevant knowledge and skills and in turn using them for personally meaningful activities which lead to an increase in cognitive complexity (Csikszentmihalyi, 1990). The current chapter will provide an in-depth review of this theory and corresponding studies on flow.

Next, studies on adult cognition will be presented which highlight the role of interest in the acquisition of domain relevant knowledge and show that adult intellectual development involves a continuous integration of new knowledge and increasing specialization of procedures for handling information within knowledge domains (Reeve & Hakel, 2000). These studies also suggested that individuals had a greater depth of knowledge about domains they were interested in and were motivated to sustain activities that were of interest, provided enjoyment (Reeve & Hakel, 2000; Rolfhus & Ackerman, 1999) and provided opportunity to acquire rich networks of domain relevant knowledge (Johnson & Eilers, 1998).
Finally, the literature on science fiction fans will be reviewed and will highlight the complexity and diversity of science fiction fandom. Studies on science fiction fans will also be presented along with a review of a phenomenon called textual poaching. This domain of interest provided the setting for the exploration of flow experiences, personal interests and knowledge acquisition and transfer.

_The Theory of Flow_

In a world supposedly ruled by the pursuit of money, power, prestige, and pleasure, it is surprising to find certain people who sacrifice all those goals for no apparent reason: people who risk their lives climbing rocks, who devote their lives to art, who spend their energies playing chess. By finding out why they are willing to give up material rewards for the elusive experience of performing enjoyable acts, we hope to learn something that will allow us to make everyday life more meaningful. (Csikszentmihalyi, 1982, p. 1)

This quote summarizes the rationale behind the theory of flow—an explanation for why certain activities are enjoyable in and of themselves. It is an attempt to understand an ongoing process which provides rewarding experiences in the present (Csikszentmihalyi, 1982).

Personal perceptions about life are shaped by many variables outside a person’s control. Yet there are certain times when, instead of being buffeted by anonymous forces, individuals do feel in complete control of their actions. On those rare occasions a sense of exhilaration and deep sense of enjoyment result (Csikszentmihalyi, 1990). This is what is meant by optimal experience or flow. It is what a painter feels when the colors on the canvas begin to take shape as a living thing or new form or when the musician plays all the right notes seamlessly (Csikszentmihalyi, 1990). It is important to highlight that these moments are not passive or receptive. They are experiences that occur when a
person’s body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile. Flow is something that an individual makes happen. Such experiences are not always pleasant at the time--the person nearing the summit of Mt. Everest will be fatigued, dizzy and hungry but will still have a sense of deep satisfaction that she has personally accomplished something of great difficulty (Csikszentmihalyi, 1990).

Flow is the process of achieving satisfaction and enjoyment through control over one’s inner life. The optimal state of inner experience is one in which there is order in consciousness. This occurs when attention is focused on realistic goals and when skills match the opportunities for action. The pursuit of a goal brings order to inner experience because a person must concentrate attention on the task at hand and momentarily forget everything else. Flow is the way people describe their state of mind when consciousness is harmoniously ordered and they in turn pursue whatever they are doing for its own sake (Csikszentmihalyi, 1990).

Since flow experiences involve pursuing activity for its own sake, the theory is considered one of emergent motivation which is linked to intrinsic motivation (Csikszentmihalyi, 1992). Emergent motivation is the idea that rewards emerge from interaction between a person and his or her environment. According to Csikszentmihalyi (1992) many theories of motivation explained reasons for actions in functional terms that consider outcomes rather than processes. How the person feels while acting tends to be ignored. He went on to argue that people constantly monitor and evaluate the quality of experience and often decide whether to continue or terminate a certain activity based on such an evaluation. If the experience met a certain criteria and the action was rewarding
in itself, an individual was likely to keep going and say they want to do whatever it was they were doing. This class of behaviors is what is commonly thought of as intrinsic motivation (Csikszentmihalyi, 1992). Csikszentmihalyi went on to discuss that one category of intrinsically motivated behavior included emergent rewards. These were positive sensations arising from the experience of complete involvement in a task that resulted from concentration and skilled performance. This particular type of reward was referred to as enjoyment. The depth of the involvement was what the individual found enjoyable and intrinsically rewarding (Csikszentmihalyi, 1992).

In addition to providing enjoyment, flow can be a catalyst for personal growth. In numerous studies it was found that every flow activity had these things in common: It provided a sense of discovery and created a feeling of transporting a person into a new reality. It pushed the person to higher levels of performance and transformed the self by making it more complex (Csikszentmihalyi, 1990). This personal growth was accomplished through a matching of challenge and skill. Csikszentmihalyi gave the example of a novice tennis player named Alex. When Alex first started playing, the only challenge he faced was hitting the ball over the net. This was not very difficult but Alex was likely to enjoy it because the challenge was a good match for his rudimentary skills. At that point, he was most likely experiencing flow. If he kept practicing, his skills would improve and then he would grow bored of just hitting the ball over the net. There was also a chance that he would meet a more practiced opponent and realize there were much harder challenges for him than the ones he was currently facing. If that was the case, he may have felt some anxiety concerning his poor performance (Csikszentmihalyi, 1990).
Neither boredom nor anxiety was a positive experience therefore Alex would be motivated to return once again to the flow state. This could be accomplished by increasing the challenges within reason. By setting new and more difficult goals that matched his skills, such as playing and beating an opponent just a little more advanced than he was, Alex would be back in flow. As Alex kept playing and improving, he would seek greater challenges and more complex experiences. This dynamic interaction explains why flow activities lead to growth and discovery (Csikszentmihalyi, 1990).

The Components of Flow

Csikszentmihalyi (1990) also found that regardless of culture, social class, age or gender, individuals described their enjoyable experiences in very similar terms. What they did to experience enjoyment varied a great deal, but how they felt when they enjoyed themselves was virtually identical. Csikszentmihalyi condensed the results of these reflections and created the nine components of flow. The combination of all these components resulted in a deep sense of enjoyment that was so rewarding people felt expending a great deal of energy was worthwhile to be able to feel it (Csikszentmihalyi, 1990). The following section is a brief overview of each of these necessary components.

The activity has clear goals each step of the way. The reason it is possible to achieve such complete involvement in a flow experience is that goals are usually clear and feedback is immediate. For example, the main goal of the chess player is to mate the opponent’s king before her king is mated. Each move is its own individual goal that clearly brings the chess player closer or further away from the overall goal of winning the game. However, in some creative activities goals may or may not be clearly set in
advance. For example, the artist might not have an image of what the finished painting should look like, but when the picture has progressed to a certain point she should know whether or not the work coincides with what was hoped to be achieved initially. (Csikszentmihalyi, 1990).

*There is immediate feedback to one's actions.* The individual is always aware of how they are doing on the task they have chosen. The kind of feedback an individual works toward is in and of itself of little importance. Ultimately, what does it matter if a tennis ball is hit between the white lines? What makes the feedback valuable is the symbolic message it contains—that the individual has succeeded in her goal. Almost any kind of feedback can be enjoyable provided it is logically related to the goal in which one has invested mental and/or physical energy (Csikszentmihalyi, 1990).

*There is a balance between challenge and skill.* Optimal experiences are reported to occur within sequences of activities that are goal directed and bounded by rules. These activities also require an investment of energy and could not be done without appropriate skills. Activities and skills may be either physical or mental. For instance, one of the most frequently mentioned flow activities is reading. It is an activity that requires concentration of attention, has a clear goal, requires the skills of literacy and the ability to translate works into images, to empathize with fictional characters, to recognize historical and cultural contexts, to anticipate turns of the plot, to criticize and evaluate the author’s style, etc. Any capacity to manipulate symbolic information is a skill. Any activity, even socializing contains numerous opportunities for action or “challenges” that require appropriate skills to realize personal goals. For those who don’t have the right skills, the
activity is not challenging; it is simply meaningless. To most people, the sheer wall of El Capitan in Yosemite Valley is just a huge featureless rock. However the climber sees it as an arena offering many complex mental and physical challenges (Csikszentmihalyi, 1990).

*Action and awareness merge.* When all of an individual’s relevant skills are needed to cope with the challenges of a situation, their attention is completely absorbed by the activity. As a result, the person becomes so involved in what they are doing that the activity becomes spontaneous, almost automatic--she stops being aware of herself as separate from the actions he/she is performing. Although the flow experience appears to be effortless, it is not. It often requires strenuous physical exertion or highly disciplined mental activity. It does not happen without the application of skilled performance. While it lasts, consciousness works smoothly and action follows action seamlessly (Csikszentmihalyi, 1990).

*Distractions are excluded from consciousness.* One major feature of flow is that enjoyable activities require a complete focusing of attention on the task at hand thus leaving no room in the mind for irrelevant information. Most experiences in everyday life lack the pressing demands of flow experiences. Because of this, concentration is rarely so intense that preoccupations and anxieties can be ruled out. This is one reason why flow improves the quality of experience. The clearly structured demands of the activity impose order (negentropy) and exclude the interference of disorder (entropy) in consciousness. Troubling thoughts that ordinarily keep passing through the mind are temporarily kept at bay (Csikszentmihalyi, 1990).
There is no worry of failure. Enjoyment often occurs in leisure activities that are separate from ordinary life where any number of bad things can happen. If a person loses a game of chess she need not worry. However if the same person mishandles a business deal, she could get fired. Thus the flow experience is typically described as involving a sense of control, or more accurately as lacking the sense of worry about losing control that is typical in many situations found in everyday life. It is important to note that what individuals feel is the possibility rather than the actuality of control. This sense of control is especially true for individuals that enjoy dangerous activities such as rock climbing. For example, the whole point of climbing is to avoid objective dangers as much as possible and to eliminate subjective dangers through rigorous discipline and preparation. The possibility of failure is limited by attempting to control as many variables as possible (Csikszentmihalyi, 1990).

Self consciousness disappears. Preoccupation with the self consumes a lot of energy in many situations. Individuals are many times concerned about how they are viewed by others. However this is not the case in a flow state. For example, when a climber is making a difficult ascent, she is completely consumed with her role as a climber. If this were not the case, the climber may make a serious mistake that could result in injury or death. It is important to note the paradoxical relationship between losing the sense of self in the flow experience and having it emerge stronger afterward. In flow a person is challenged to do her best. At the time she doesn’t have the opportunity to reflect on what this means in terms of the self. If the individual did allow herself to become self conscious, the experience could not have been all that deep. However after the experience the individual is able to reflect upon the flow experience...
and take pride in the fact that the self is now enriched by new skills and fresh achievements (Csikszentmihalyi, 1990).

*The sense of time becomes distorted.* During a flow experience, time appears to pass differently. Often hours seem to pass by in minutes. The sense of time bears little relation to the passage of time as measured by the clock (Csikszentmihalyi, 1990).

*The activity becomes autotelic.* As mentioned previously, a key element of a flow experience is that the activity is an end in itself. The term autotelic derives from two Greek words, *auto* meaning self and *telos* meaning goal. It refers to a self contained activity that is done not with the expectation of some future reward or benefit, but simply because the activity is enjoyable and worth doing for its own sake. An autotelic experience differs greatly from many other typical day-to-day experiences. Much of what individuals are expected to do have little or no intrinsic value. Things are done because they have to be done or they are done for future benefit. Or as Csikszentmihalyi states, “When an experience is intrinsically rewarding, life is justified in the present, instead of being held hostage to a hypothetical future gain” (Csikszentmihalyi, 1990, p. 69).

Csikszentmihalyi argued that flow was a pathway to lifelong learning. Many individuals give up on learning after they leave school due to unpleasant experiences of being manipulated from the outside by textbooks and teachers. Csikszentmihalyi further argued that ideally the end of extrinsically applied education should be the start of an intrinsically motivated education. The goal of studying should no longer be to make the grade, earn a diploma or find a good job. Instead it should be to understand one’s life
experiences and develop a personally meaningful sense of what these experiences are all about (Csikszentmihalyi, 1990).

Empirical Studies of Flow in Leisure Activities

There have been numerous studies conducted on the theory of flow over the past three decades. Some have studied individuals in the workplace while others have studied individuals while pursuing their leisure activities. Since the current study focused on leisure activities, flow studies related to leisure activities were highlighted.

One study followed 78 adults for one week using the experience sampling method (ESM) which is a method that uses an electronic beeper to collect samples of self reports throughout the day. The main question was whether the quality of experience was more influenced by whether the person was at work or at leisure or more influenced by whether a person was in flow. Results showed that all the variables measuring the quality of experience, except for motivation and relaxation were more affected by flow than by whether the respondent was working or in leisure. It was also found that regardless of the quality of the experience respondents were more motivated in leisure than work (Csikszentmihalyi & LeFevre, 1989).

An attempt to describe the structure of autotelic activities was the focus of another study. A list of twenty items, each consisting of a common activity was created. Respondents were asked to check whether their feelings during one of their own typical activities were similar, neutral, different or very different with respect to the twenty experiences listed. To find out whether there was a relationship between the way a person perceived the activity and the kind of reward she derived from it, the researchers correlated an autotelic reward score (a separate list that asked respondents to rank sources
of enjoyment which an activity offered--i.e., emotional release, friendship, development of personal skills, etc.) with the items which described the experience during the performance of the activity. It was found that respondents who enjoyed intrinsic rewards described what they were doing as significantly less competitive and more creative than those who relied on external incentives. Most respondents described the autotelic experience as involving creative discovery and exploration. In conclusion the researchers stated that the kind of interaction that produced autotelic experience was open-ended and its outcome could be determined by the participant (Csikszentmihalyi, 1982).

The flow experiences of rock climbers were the focus of yet another study. Thirty rock climbers were personally interviewed by researchers who themselves were rock climbers. Informants were selected to provide a range of experience, involvement and skill. The mean age of the group was 28 with a range from 19 to 53. Five of the respondents were female and 25 were male. Mean length of experience was five years of technical rock climbing and eight years of general mountaineering with the range in each case being from one to thirty-six years. Throughout the interviews the focus was placed on obtaining the climbers’ own interpretation of his or her involvement in the activity. The results of the study revealed that each climber discovered a state of being that was rare in normative life. This state of being included a heightened sense of physical achievement, a feeling of harmony with the environment and clarity of purpose. What was also common across all experiences was the total involvement of body and mind in a task that validated the competence of the climber. All of these descriptions coincided well with the theory of flow (Csikszentmihalyi, 1982).
Another leisure study conducted focused on social dancing. The sample consisted of twelve subjects with an average age of 24.25 years. The age range of the participants was from 19 to 29. The data were gathered from observations, casual discussions, interviews and questionnaires. Of the twelve subjects selected, six were expected to experience flow when they danced and six were not. Equal numbers of males and females were interviewed and all subjects seemed to be equally familiar with the activity. Although the rules and limits of social dancing are different than those of rock climbing, rules and limits exist nonetheless. Within these limits and rules the participant is confronted by a set of opportunities for action. He or she can move to the rhythm of the music, communicate and interact with partners and use the body in ways that are not done in ordinary life. The researchers found that this matching of opportunity and action led to flow experiences in the subjects. Social interactions with others also provided some of the flow experiences. One subject spoke about his social flow experience in the following quotation, “Spending pleasant times, especially with friends. A lot of people get together in a light, pleasant thing to do and nobody’s usually too worried and everyone forgets about everything except just listening and moving. It’s a good atmosphere, especially if there’s lots of friends around” (Csikszentmihalyi, 1982, p. 106).

A longitudinal study involving talented teenagers also revealed that the highest proportion of flow reported by the teens was in their extracurricular school activities such as band, theatre and athletic events. The data revealed that exactly half of the respondents were in a flow state when participating in these activities. Leisure activities involving sports and games were also listed as flow inducing. Boredom characterized about half of the responses given when the adolescents were resting, watching television,
eating or traveling. On the other hand, only 2% of sports, 4% of studying for exams and 9% of homework and extracurricular activities fell into the boredom category. Students rated themselves as anxious in scholastic activities and sports and games but not when using media (television, music, reading), resting, eating and attending to personal care. According to the researchers, it appeared that daily life for the teens alternated between activities characterized by boredom and those that were potentially anxiety inducing. Occasionally the teens were able to pursue things that were intrinsically rewarding such as sports, games, hobbies and extracurricular activities (Csikszentmihalyi & Rathunde, 1992).

**Television Viewing and Flow**

In the book, *Television and the Quality of Life: How Viewing Shapes Everyday Experience*, Kubey and Csikszentmihalyi (1990) summarized numerous studies that were focused on television viewing. These studies are worth mentioning because many science fiction fans are avid television viewers and use the information gained through viewing in new and creative ways (Jenkins, 1988, Jenkins, 1992a). Overall, the results of these studies revealed that television viewing required a lot less effort than other leisure activities such as reading, playing sports or participating in other hobbies. The researchers stated that this “workless” attention helped explain why it was so easy to focus attention for long periods of time and why much television viewing could be characterized as passive, relaxing and automatic. In contrast, truly rewarding experiences almost always require concentrated involvement and interaction with complex information. These are the types of experiences that lead to a flow state. In general,
television viewing is a pairing of low challenge and very limited use of skills, and thus is not a flow inducing activity (Kubey & Csikszentmihalyi, 1990).

However, the researchers did mention exceptions to the general rule. In one of the studies, ten individuals reported that watching television was a flow inducing activity that incorporated high challenges and skills combined with high levels of concentration. Even though these respondents counted as only 3% of the incidences reported, at least there was evidence that television viewing could produce flow in rare circumstances.

The researchers also theorized that when any new bit of information (a perception, sensation, memory, feeling, idea) entered awareness it potentially affected the dynamic balance in consciousness either by increasing order—if the information supported an individual’s goals—or by increasing disorder—if the information failed to support or thwarted an individual’s goals. Because people have different and multiple goals and therefore different and multiple needs, the value of the message is necessarily relative. Television information, like any other information is valuable to the extent that people can use it in the service of their goals (Kubey & Csikszentmihalyi, 1990).

It has also been postulated that individuals who possess greater cognitive complexity are more likely to seek out television programs that contain more complex and challenging information. Even watching the same show, a person more skilled in interpreting information can generally extract more complexity and order as evidenced in the following quotation: “Informativeness is a meaningful property only to the viewer who is actively seeking to understand the content at a level of processing beyond superficial enjoyment. To appreciate features for their informativeness the viewer must be able to encode content, form hypotheses and develop a context of expectations”
(Kubey & Csikszentmihalyi, 1990, p. 188). An individual who can order his/her experiences more actively and who seeks complexity is more likely to retain greater control and mastery over the information provided by any medium and in turn finds more uses for it (Kubey & Csikszentmihalyi, 1990).

A Summary of Flow

In summary, flow is a theory of emergent motivation that provides an avenue for personal growth and increase in cognitive complexity through nine components: an activity with clear goals each step of the way, immediate feedback to one’s actions, a balance between challenge and skill, a merging of action and awareness, an exclusion of distractions from consciousness, an absence of worry over failure, the disappearance of self consciousness, the distortion of time and an experience that becomes autotelic.

Studies have shown that individuals experienced flow in numerous and varied leisure activities. Researchers even postulated that some individuals were able to experience flow while watching television which was determined not to normally be a flow inducing activity.

In sum, the theory of flow explains the motivation behind personal interests--interests that if continually pursued lead to personal growth and an increase in cognitive complexity.

The Role of Interests in Adult Cognition

According to Silvia (2001), personal interests involving skills and competencies had no ceiling on the amount of possible mastery. For example, once a magician masters a sleight of hand trick, there is always a slightly more difficult trick waiting. A golfer’s
strokes can always get a little smoother and each newly read book exposes more gaps in knowledge. Silvia went on to posit that interests were sustained because each new step introduces novelty, conflict with existing knowledge and uncertainty concerning the task and one’s ability. An individual’s knowledge becomes increasingly complex which enlarges the capacity for conflict and enables multiple perspectives on the same information. Interests cultivate knowledge and diversify experience at all stages of life (Silvia, 2001).

In a study by Rolfhus and Ackerman (1999), twenty academic knowledge tests were developed to locate domain knowledge within a network of traits. Spatial, numerical and verbal aptitude measures and personality and interest measures were administered to 141 undergraduate students. One of the findings was that domain specific knowledge correlated positively with personal interests. The researchers hypothesized that realistic interests, defined as activities requiring physical strength and motor coordination, would show positive correlations with the physical sciences and mechanical and technological knowledge domains. Investigative interests were supposedly manifested in individuals who like to think through rather than act out problems. The researchers hypothesized that investigative interests would positively correlate with the physical and social sciences. Finally, the researchers hypothesized that artistic interests would show positive correlation with the arts and other humanities (Rolfhus & Ackerman, 1999). The study revealed that realistic interests correlated significantly with technology, physics and chemistry. Investigative interests correlated with biology and chemistry. Significant correlations were found for artistic interests in
art, music, American and world literature, American history, western civilization, geography and business/management (Rolfhus & Ackerman, 1999).

Participants were also asked to rate their knowledge of specific topics within 32 academic domains. The observed pattern of personality-interest-knowledge relations revealed that interests in science were related to self-reported science knowledge but not self-reported humanities knowledge. Personality traits assessing intellectual orientations toward the world were broadly related to self reported knowledge, especially in the humanities. Thus personality and interest traits may reflect or influence choices to engage or invest in particular domains (Rolfhus & Ackerman, 1999).

In yet another study conducted by Ackerman and Rolfhus, (1999), twenty academic and technology oriented tests were administered to 135 middle aged adults. It was found that knowledge was partially predicted by intelligence as process, crystallized abilities, personality, interests and self concept. As in the aforementioned study, correlations between knowledge and interests were found. There were positive correlations between artistic interests and knowledge about art, realistic interests and knowledge scales in the mechanical domain, and investigative interests and the sciences. However, the researchers were uncertain as to whether interests led to knowledge, knowledge led to interests or some other variable led to both interests and knowledge (Ackerman & Rolfhus, 1999).

Researchers Reeve and Hakel (2000) highlighted John Dewey’s hypothesis that interests are responsible for guiding an individual’s knowledge acquisition. The purposive nature of strong interest, Dewey claimed, will direct and sustain an individual’s attention and effort toward accomplishing a difficult task or a task that requires a great
deal of time. Reeve and Hakel (2000) also argued that the importance of domain specific knowledge in determining adult intelligence places heavy emphasis on understanding cognitive, motivational and social processes that give rise to sophisticated knowledge structures. Motivational or affective factors such as interests play a critical role in human learning and development (Reeve & Hakel, 2000). Reeve and Hakel’s own findings on the role that interests played in adult intellect revealed that people tend to know more about things that match their interests than about things that do not. This finding was unique as it appeared to be the first to empirically show an interest-knowledge relationship across domains within individuals. Unlike previous findings which have shown that people who are more interested in a single domain tend to know more about it compared with other people who are uninterested in that domain, this particular study showed that on average a single individual tends to know more about domains in which she is interested compared with other domains in which the individual is less interested (Reeve & Hakel, 2000).

In further regards to personal interests, Lens and Rand (2000) note that people do things that they like to do more often than things they do not like to do and thus become better at some things than other things. This speaks to personal motivation which affects the efficiency of the use of cognitive abilities and quality of cognitive functioning. Spending more time on a task may result in a growth of knowledge and abilities. The more interested a person is in a domain the more time they will spend in that domain and the more they will develop capacities and abilities related to the domain (Lens & Rand, 2000).
As was noted in the first chapter, researchers additionally stated that having more knowledge about a domain may make an individual more confident about learning new information (Johnson et al., 2004). This idea was also supported by Csikszentmihalyi’s (1982) earlier work that stressed through the study of play one might learn how work can be made more enjoyable and how to decrease dependence on extrinsic rewards in other areas of life. Both of these issues spoke to knowledge and skills transfer. Mayer and Wittrock (1996) noted that transfer of learning occurred whenever prior learned knowledge and skills affect the way in which new knowledge and skills are learned and performed. Transfer includes the stipulation that the previous and new situations are different from one another. Learning occurs when previous learning affects subsequent performance on the same task, whereas transfer occurs when previous learning affects subsequent performance on a different task. These researchers went on to state that research on expertise often suggested that experts in a given domain rely mainly on strong methods of problem solving. Strong methods are defined as problem solving procedures that are specific to a domain, such as a method that applies only to solving physics word problems. Transfer is an integral part of learning. According to Bruner (1960, p. 31), “The best way to create interest in a subject is to render it worth knowing, which means to make the knowledge gained useable in one’s thinking beyond the situation in which learning has occurred.”

In conclusion, Roggenbuck, Loomis and Dagostino (1991) discussed the cognitive benefits found in learning through leisure activity. They identified seven learning outcomes that could be the possible result of leisure engagement: behavior change and skill learning which involves learning new behaviors or skills during a leisure
activity and/or modifying old ones; direct visual memory which involves being able to process visual information, code it in memory and have the ability to bring it back to the “mind’s eye”; informational or factual learning which involves organizing and making sense out of facts; concept learning which involves the organization of specific stimuli or information into categories or phenomena that show common attributes; schemata learning which involves the formation of a framework for understanding and remembering new information; metacognitive learning which combines orientation to a place with impressions of one’s level of mastery; and attitude and values learning which involves changes in beliefs, feelings and behavior toward a specific object or event.

**Summary of Adult Interests and Cognition**

Recent studies have shown correlations between interests and adult cognition (Ackerman & Rolfhus, 1999; Ceci & Liker, 1986; Reeve & Hakel, 2000; Roggenbuck, Loomis and Dagostino, 1991; Rolfhus & Ackerman, 1999). These studies highlighted that individuals have a greater depth of knowledge about domains they are interested in. The studies also noted that spending a great deal of time on a certain activity lead to greater cognitive complexity. Interest also speaks to motivation in that individuals are motivated to sustain activities that interest them and provide enjoyable experiences (Csikszentmihalyi, 1990). Lens and Rand (2000) also noted that differences in motivation may create differences in cognition and in cumulative intellectual achievements over time.

The following section provides an overview of the characteristics of individuals who become science fiction fans, why individuals choose to become science fiction fans and how these individuals participate in a phenomenon called textual poaching.
Characteristics of Science Fiction Fans

From its inception, many stereotypes have been attached to the word “fan”. The word is an abbreviated form of the word fanatic which implies excessive, mistaken enthusiasm (Jenkins, 1992a). The mainstream media and academy define fandom along a continuum, ranging from social deviant to aficionado. Fans are seen as either overzealous consumers of popular culture or creative individuals reworking mainstream meanings into new forms (MacDonald, 1998).

According to Jenson (1992), the literature on fandom is haunted by images of deviance. The fan is characterized as a potential fanatic meaning that fandom is seen as excessive, possibly deranged behavior. The acts of former crazed fans are often seen in the news. Mark David Chapman’s killing of ex-Beatle John Lennon and John Hinckley’s attempted assassination of President Ronald Reagan are two prominent examples. Jenson goes on to argue that these and other pathological portrayals exist in relation to different, unacknowledged issues and concerns. Various theories are posited about why certain fans cross the line into pathology, but the discussion of such theories are beyond the scope of the current study.

As for the “excessiveness” of fan behaviors, Jenkins (1992a) argued that much of the scandal stems from the perceived merits and cultural status (or lack thereof) of science fiction related works rather than anything intrinsic to the fans’ behavior. Jenkins asked if practices such as close attention, careful re-reading, intense discussion or the decipherment of texts in foreign or archaic languages would be viewed as extreme if they were applied to Shakespeare instead of Star Trek or Italian opera instead of Japanese animation. In other times, places and cultures both Shakespeare and opera have been part
of popular rather than elite culture and were initially appreciated by a mass audience rather than professionally trained critics (Jenkins, 1992a).

Jenkins (1992a) responded to the popular notion of science fiction fans being simple-minded and obsessive by delineating five levels of fan activity that were intended to show the complexity and diversity of science fiction fandom as a sub-cultural community. The five levels are as follows:

*Fandom involves a particular mode of reception.* Fan viewers watch television shows and movies with close, undivided attention. The media texts are viewed multiple times to scrutinize meaningful details and to bring more and more of the original narrative under their control. The goal is to create new meanings from current texts. For the fan, watching the series is the beginning, not the end of media consumption.

*Fandom involves a particular set of critical and interpretive practices.* Fan criticism of texts involves a need for internal consistency across program episodes, movie sequels or book series. Fan critics work to resolve gaps and explore undeveloped potentials. This mode of interpretation goes far beyond the explicit information presented initially by resulting in a meta-text that is larger, richer, more complex and interesting than the original text.

*Fandom constitutes a base for consumer activism.* Fans of television shows in particular speak back to the networks and producers by organizing and lobbying on behalf of endangered series. Fandom provides a base from which individuals may speak about their cultural preferences and assert their desires for alternative developments in future programming.
Fandom possesses particular forms of cultural production, aesthetic traditions and practices. Fan artists, writers, costumers, video makers and musicians create works that speak to the special interests of the fan community. The works appropriate or “poach” raw materials from the commercial culture and use them as the basis for the creation of a contemporary folk culture. Fandom generates its own genres and develops alternative institutions of production, distribution, exhibition and consumption. Fan art stands in contrast to the self interested motivations of mainstream cultural production. Fans create products for other fans for the sole purpose of sharing something that is of mutual interest. Monetary gain is not the main motivator behind the creation of these products. Fandom also recognizes no clear cut line between artists and consumers. Fans are all potential writers or artisans whose talents need to be discovered, nurtured and promoted.

Fandom functions as an alternative social community. Fans recognize that fandom offers not so much an escape from day to day life as an alternative reality whose values may be more humane and democratic than those held by mundane (non-fan) society. Fans, like everyone else inhabit a less than perfect world where marriages end, social relations are often superficial and material values dominate over emotional and social needs. Fans are often individuals whose intellectual skills are not challenged by their professional lives. They react against these unsatisfying situations by establishing a “weekend only” world that is more open to creativity and more concerned with human welfare than with economic advance.

To summarize, science fiction fans are people who attend to media texts, icons or stars in greater than usual detail. These texts provide a focal point through which fans
can identify with the community in which they belong. They might even adopt ideas, beliefs and values valorized in the original text (MacDonald, 1998).

**Studies on Fandom**

Over the years, numerous surveys have been conducted on science fiction fans. As early as 1961, researchers were trying to better understand who science fiction fans were and why they became fans in the first place (Coulson, J., 1994). In 1961, Kemp, Kemp and O’Meara completed a research project that began with a series of informal interviews at various science fiction fan club meetings and conventions. O’Meara hypothesized that science fiction fans were eldest or only children, bookish and often emotionally and culturally isolated from siblings and/or peers. Most of the survey replies confirmed his hypothesis. Seventy six people participated in the O’Meara/Kemp survey. They represented a broad range of age groups, economic levels, educational backgrounds and depths of devotion to science fiction. Despite the variants, all of them considered themselves fans (Coulson, J., 1994). The results of the survey were as follows: of the 76 participants, 24 were only children, 32 were first-borns; 28 believed that birth order had a bearing on being a fan, the rest did not; 58 said that they were second generation fans, the rest said they were not; 9.1 years was the average age in which participants entered the fantasy world with a range from 4 to 20 years; 19.7 years was the average age in which participants entered fandom with a range from 9 to 38 years; first contact with fantasy ran from science fiction books and magazines to Dr. Doolittle and The Wizard of Oz. Finally, the most frequent avenue of discovery was the fanzine (amateur science fiction publications); 35 out of 54 respondents learned about fandom through amateur science fiction publications (Coulson, J., 1994).
According to yet another survey conducted by Day and Day (1982), researchers gathered data via questionnaires and through participant observation at science fiction conventions throughout the Midwest. Of the nearly 700 people who filled out the surveys, 45% were women. Since fandom has the reputation of being mostly composed of white middle-class men, this was an interesting finding. Other findings revealed that most fans were Caucasian--minorities accounted for less than 6%, 94% of respondents were under the age of 40 with 47% being between the ages of 20 and 29, 65% had some college education with 30% having bachelor’s degrees and 18% having post graduate degrees, 52% of all respondents received good grades in school, 73% of the respondents were single, 27% were either high school or college students and approximately 38% were in professional occupations such as teaching, social work or computer-related careers. Fans also said that they were misfits and loners. About 49% described themselves as loners or not having many friends while in school while another 41% said they had only a few friends in school. The individuals surveyed also believed that fellow fans were more intelligent and literate than people in the mundane world, were more curious and aware and had a great concern for the future of humankind. The researchers’ observations substantiated this. Fans were found to be individualistic, non-judgmental people of high intelligence. Finally, fans as a group were found to be highly creative. Thirty-nine percent had written science fiction and 10% of these had published their work. About 24% wrote poetry, 12% composed music, 7% sculpted and 26% were artists (Day & Day, 1982).

Kozinets (2001) also collected field notes and artifacts from 20 months of fieldwork at Star Trek fan clubs, conventions and in Internet groups. Sixty-seven
interviews with *Star Trek* fans were used as data to examine the influence of mass media on the formulation of subcultures. One of the findings was that *Star Trek’s* utopian philosophy provided a sense of empowerment for those in stigmatized social categories. Some of the fans asserted that *Star Trek* fandom was a place where many of those who do not easily fit into mainstream social roles could find a form of sanctuary and acceptance.

“Leslie”, a female government worker in her fifties, had been a member of the science fiction and Star Trek writing culture for over three decades. She identified with *Star Trek’s* intellectual, alien, strong but emotionally repressed Mr. Spock character. Kozinets posited that a focal point of interest such as personal identification with a certain character was attractive to people who have been stigmatized by those who are less intelligent, less inclined to fantasy and perhaps more privileged in terms of social status, social skills or physical appearance (Kozinets, 2001).

Researchers have found that fans have various reasons for why they participate in science fiction related leisure activities. Obst, Zinkiewicz and Smith (2002) conducted a study on that explored the construct of Psychological Sense of Community (PSOC) in science fiction fandom. A questionnaire was distributed at an international science fiction convention (N=359) in an endeavor to clarify the underlying dimensions of PSOC. The results of the study revealed that science fiction fandom reported high levels of PSOC. The researchers found that the following factors emerged in the factor analysis as to why individuals participate in science fiction related activities: a sense of belonging, fulfillment of needs through cooperative behavior within the community, friendship and support, and finally leadership and influence.
Hazlett (2002), conducted a study on the social construction of self in fan cultures and found, through the narrative of the participants, that being a *Star Trek* fan provides a sense of self validation. One participant, “Peter” explained:

…it doesn’t matter, the details of your life so much, because when you meet another Star Trek fan, the details of your life aren’t important. What’s important is how much you know about Star Trek and what your opinion is of all its little nuances. You can separate yourself from whatever your problem might be and you can still have a social structure to interact with and validate your existence and make you feel important, wanted, needed and all that other stuff humans need. (Hazlett, 2002, p. 43)

Finally, R. Coulson (1994), asked fans at a science fiction convention why they remained fans. Responses included:

“There is a greater percentage of nice people in fandom.”

“It’s fun.”

“My friends are in fandom.”

“My friends are in fandom and I don’t have to worry about my image when I’m with fans.”

“It’s the only group that considers going to a bookstore to be a high treat.”

I’m still in fandom because it is the most satisfying hobby that I’ve found. In times past I have collected coins and stamps and had heavily invested in photography, but none of these hobbies were lasting. None returned me as much pleasure as fandom. I have make as many (perhaps more) long-lasting friendships in fandom as in the non-fannish world. It began as an interest in science fiction itself, but slowly through the years it became an abiding interest in the people of science fiction, the writers, the collectors, and readers. And they seem to tolerate me. (Coulson, R., 1994, p. 12)

*Textual Poaching*

According to Jenkins (1992a), recent work in cultural studies directed attention to the meanings texts accumulate through their use. The reader’s activity was no longer
seen simply as the task of understanding the author’s original meaning or intent, but to rework borrowed materials to fit them into the context of lived experience. For the sake of clarity, texts are any medium that conveys a story and are professionally created and published or aired.

Textual poaching is when a reader modifies a text. She invents in the text something different from what the original author intended. The process begins with an individual learning everything there is to know about a certain text. One *Star Trek* fan described this process by stating that first friends met at a house to watch and audio record episodes of *Star Trek*. Silence was mandatory except during commercials and afterwards, the episode was discussed. The audio tapes were listened to several times and while listening, each episode was visualized. Bits of the dialog were memorized and then each story was re-written in order to correct the “wrongs” that were done to favorite characters. Eventually completely new adventures were written based on the original characters and *Star Trek* universe (Jenkins, 1992a).

Jenkins (1992a) stated that rereading a text was central to the fan’s aesthetic pleasure. A lot of fan culture facilitates repeated encounters with favored texts. Fans have also made attempts to duplicate the viewing experience by using video, DVD or audio recorders and then writing detailed plot descriptions either for their own use or for publication in fanzines. These types of viewing strategies extend the fans’ mastery over the narrative and accommodate the production of new texts from the series materials.

Some viewings focus on the construction of a text and others on character motivation. Multiple viewings also lend themselves to speculation about the text. One *Star Wars* fan explained it this way:
Each time I see it, a new level or idea about something in it shows itself…I’m fascinated with all of the different versions around in fandom of how the Empire came into being, what the Clone Wars were, etc. The marvelous thing about Star Wars open-endedness is that there is room in it for a fannish writer to extrapolate, to fit their own theories and interests into the Star Wars Universe. (Jenkins, 1992a, p. 73)

Fans not only write new stories based on established texts, they also create works of art, write songs or create videos (Jenkins, 1992b). Fans take footage from television texts and edit them to construct their own videos which comment on the programs that gave them birth. Fan artists paint pictures, construct sculptures or fashion elaborate costumes. Fan musicians record and market tapes of their performances (Jenkins, 1992b).

**Collecting**

One final activity that many science fiction fans participate in is collecting. While this activity is not directly related to textual poaching, it is still worth mentioning because so many fans have science fiction related collections. Tankel and Murphy (1998), stated that fans collect mass-produced cultural artifacts because they were able to recognize what is unique from what is seen by others as uniform. This capacity to see value where others see repetition and banality describes an essential component of fandom. The researchers went on to explain that the motivations behind collecting do not derive from qualities uniquely inherent in the artifact, but rather from the value received from the collectors’ interactions with the artifacts. Collecting permits the individual alone and in community to find pleasure and satisfaction from the products of mass culture (Tankel & Murphy, 1998).
Summary of Science Fiction Fans

It has been posited that science fiction fandom is more than simply overzealous behavior. According to Jenkins (1992a), there are five levels of fan activity that show the complexity and diversity of science fiction fandom. Science fiction fans are individuals who attend to media texts, icons or stars in greater than usual detail. Various surveys have been conducted on science fiction fans beginning as early as 1961 (Coulson, J., 1994, Coulson, R., 1994; Day & Day, 1982).

Fans gave numerous reasons for why they participate in science fiction related leisure activities. Responses revealed that fandom provides a sense of belonging, a place for friendship and support, a place for leadership and influence, a satisfying hobby and it is simply enjoyable (Coulson, R., 1994; Hazlett, 2002; Obst, Zinkiewicz & Smith, 2002).

It was also found that many fans participate in a phenomenon called textual poaching which is when a reader modifies a certain text or creates a new text from an existing one. Fans not only write new stories based on established texts, they also create works of art, write songs and create videos (Jenkins, 1992a, 1992b).

Finally, the mode of closely attending to texts noted in the literature on fandom is similar to what Kubey and Csikszentmihalyi (1990) discovered in earlier studies on television viewing. These researchers posited that individuals who possess greater cognitive complexity and are more skilled in interpreting information are able to actively seek to understand the content of television shows at a level of processing beyond superficial enjoyment. To appreciate television for its informativeness, the viewer must be able to encode content, form hypotheses and develop a content of expectations. An individual who seeks complexity is more likely to retain greater control over the
information provided by any medium and in turn find more uses for it (Kubey & Csikszentmihalyi, 1990).

In addition, the “weekend only” worlds created by science fiction fans allow for individuals to achieve satisfaction through control over one’s inner life. They are able to pursue, even if it’s only for a short time, whatever they are passionate about and achieve satisfaction and enjoyment (Csikszentmihalyi, 1990). This was also evidenced in the earlier quotation from the Star Trek fan “Peter”. Through the sharing of his interest in Star Trek, he was not worried about failure, his self consciousness disappeared and he found personal meaning through his experiences (Csikszentmihalyi, 1990).

As stated in the introductory chapter, there have been numerous studies conducted on the role of flow in various leisure activities (Csikszentmihalyi, 1982; 1990). However no studies have been conducted on the role of flow in the leisure activities of science fiction fans. There also haven’t been any studies conducted that examine the motivation for developing and sustaining an interest in science fiction and whether or not the knowledge acquired transfers to other domains. It is hoped that the current study has addressed these gaps in the literature.

Questions for the Current Study

The main purpose of the current study was to explore why individuals participate in science fiction related leisure activities, determine the role, if any, that flow plays in the continuation of such activities, explore how these interests initially developed and determine if science fiction related knowledge transfers to other domains.

Researchers believe that sustained interest in an activity is likely to promote acquisition of rich networks of knowledge which results in increasing cognitive
complexity (Ackerman & Rolfhus, 1999; Ceci & Liker, 1986; Johnson & Eilers, 1998; Reeve and Hakel, 2000; Rolfhus & Ackerman, 1999). Thus, examining an individual’s motivation, knowledge and skills acquisition and possible transfer via the theory of flow may help others better understand the role that interest plays in adult cognition (Ackerman & Heggestad, 1997; Ceci & Liker, 1986; Johnson & Eilers, 1998; Reeve & Hakel, 2000). Based on the previous review of the literature, the following research questions formed the foundation of the current study:

**Question #1:** How is science fiction related knowledge integrated into the participants’ leisure activities?

**Question #2:** To what extent are components of flow evident in the participants’ leisure activities?

**Question #3:** How do the participants’ interests in science fiction related leisure activities initially develop?

**Question #4:** To what extent has this interest changed and/or evolved from its inception to the present and if so, how?

**Question #5:** To what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perception about learning new information in other domains?
CHAPTER THREE

Methods

Introduction

As mentioned in chapters one and two, the main purpose of the current study was to explore each subject’s motivation for developing and sustaining science fiction related leisure activities via the theory of flow and determine if their science fiction related knowledge transfers to other domains. To this end, the following research questions were created as the basis for the current study:

Question #1: How is science fiction related knowledge integrated into the participants’ leisure activities?

Question #2: To what extent are components of flow evident in the participants’ leisure activities?

Question #3: How do the participants’ interests in science fiction related leisure activities initially develop?

Question #4: To what extent has this interest changed and/or evolved from its inception to the present and if so, how?

Question #5: To what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perception about learning new information in other domains?

Rationale for Qualitative Design

The primary reason for choosing a qualitative design was that the current study was exploratory in nature and qualitative methods were the most appropriate for answering the research questions. In addition, case studies offer a means of investigating
complex social units consisting of multiple variables that are important in understanding a phenomenon. Anchored in a real life context, case studies result in a rich holistic account of a phenomenon and in turn offer insights and illuminate meanings that expand a reader’s experience. These insights can be used to help structure future research; thus case studies play an important role in advancing a field’s knowledge base (Merriam, 1998).

In addition, studying the subjects in their naturalistic setting provided the opportunity for gathering information about the context in which the activities took place. Many of the activities involved artifacts (i.e., collections, costumes, etc.) that were not portable. Thus, observing participants in the field was the only way to examine artifacts related to the leisure activities.

Finally, Stake (1995) explained that research questions in qualitative studies are typically oriented to cases or phenomena and seek patterns of unanticipated as well as expected relationships. Dependent variables are experientially defined and situational conditions are not known in advance or controlled. Once again, since the questions of the current study were open-ended in nature, they lent themselves well to this type of inquiry.

The Specific Design Employed

The specific design employed was an ethnographic multiple-case method. According to Merriam (1998), case study designs are employed to gain an in-depth understanding of a certain situation and the meaning for those involved. The primary focus is on the process rather than the outcome and on discovery rather than confirmation.
According to Yin (1984), multiple-case designs have the distinct advantage over single-case designs because the evidence from multiple cases is often considered more compelling and the overall study is therefore regarded as being more robust.

Finally, Lincoln and Guba (1985), suggested that a case study method provides many advantages to the naturalistic inquirer. Case studies present a holistic and lifelike description of the individuals and settings under study thus readers receive a measure of vicarious experience. Case studies are also effective vehicles for demonstrating the interplay between inquirer and respondents which provides the reader an opportunity to judge the extent of the bias of the inquirer. A case study method also provides a grounded assessment of context. If phenomena depend for their existence on their contexts, it is essential that the reader receive an adequate grasp of what that context is like.

According to Merriam (1998), one of the special features of qualitative case studies is that they are heuristic. This means that case studies illuminate the reader’s understanding of the phenomenon under study. They can bring about discovery of new meaning and extend the reader’s experience. Previously unknown relationships and variables can be expected to emerge leading to a rethinking of the phenomenon being studied.

The primary goal of the current study was to gain a greater understanding of flow within the context of the leisure activities of adult science fiction fans. Within-case and cross-case analysis provided information on the theory which may, in the future, lead to the construction of new theories regarding personal interests and adult cognition.
It is also important to note that this multiple-case study was ethnographic in nature. According to Merriam (1998), an ethnographic case study is one that focuses on the culture of a certain group. Yin (1993) further reported that ethnographic research can be characterized as one in which the investigator seeks to gain a close-up detailed rendition of the “real world” and favors participant-observation as the dominant mode of data collection. As mentioned in previous chapters, a great deal of the literature on science fiction fandom explains that fandom is indeed a cultural phenomenon (Coulson, R., 1994; Day & Day, 1982; Hazlett, 2002; Jenkins, 1992a; Kozinets, 2000; Obst, Zinkiewicz & Smith, 2002) thus it was important to understand the culture in which the science fiction related leisure activities were taking place.

Role of the Researcher

Qualitative research is constructivist in nature meaning that the primary aim of the researcher is to construct a clearer and more sophisticated reality that can withstand disciplined skepticism. Although the reality individuals seek is of their own making, it is a collective making. The understanding reached by each individual will be to some degree unique, but much will still be held in common (Stake, 1995).

Stake (1995), explained that the qualitative researcher can play many different roles that may include teacher (to inform and enlighten the reader), advocate (to convince the reader to believe what they the researcher believes), evaluator (to provide the reader with an understanding of the merits of a case), biographer (to present individuals as multi-faceted, complex creatures) or interpreter (to substantiate new meanings, find new connections and in turn find ways to make them more comprehensible to others).
Since, according to a qualitative research paradigm, knowledge is constructed and the researcher is the primary instrument for gathering and analyzing data, it is of utmost importance that the primary investigator be completely forthright about her personal bias. According to Merriam (1998), there are both advantages and disadvantages to the researcher being the primary instrument in a study. One advantage is that the investigator has complete control over data collection and analysis thus allowing her to respond to situations by maximizing opportunities for collecting and producing meaningful information. Conversely, the investigator is limited by being human--that is, mistakes will be made, opportunities missed and personal bias will interfere. Thus, reporting any known bias in advance will assist the reader in understanding how the data was interpreted and presented and how meanings were made.

The author of the current study has an educational background in elementary education with an emphasis in gifted education and has had a long standing interest in giftedness and intelligence. The author also holds a constructivist view of learning and believes that interest plays a key role in knowledge acquisition and intelligence. She also believes that knowledge is constructed through interaction with other individuals and the environment and each interaction between individuals and/or the environment is dynamic and reciprocal in nature.

The author also spent six months getting to know many of the subjects before the study was conducted and became a member of a local Star Wars fan club. This “going native” provided both advantages and disadvantages. The advantages were that when the time came to interview the subjects, they were comfortable with the author, had already shared a great deal of information about their leisure activities and were very eager to
share more. The disadvantage was that the author became closely acquainted with the subjects and was thus compelled to portray them in a mostly positive light. Miles and Huberman (1994) warned that “going native” may cause a researcher to lose her perspective because she has been co-opted into the perceptions and explanations of the informants. While the author strived to correct for this bias through rigorous data collection, data analysis and triangulation, it would have been unrealistic to believe that the bias was eliminated completely.

Finally, the author has had a long standing personal interest in science fiction. This interest stemmed from childhood reading and television viewing experiences. This proved to be very advantageous when interviewing the subjects because a common interest had already been established.

Design Specifics

Unit of Analysis: The unit of analysis for the current study was the individual case within the context of multiple cases. Information about each relevant individual was collected in a consistent manner and included in a multiple-case study.

Sample Population: The sample population was 10 local adult science fiction fans that were chosen through a purposive snowball sampling method (Merriam, 1998) which involved asking participants of a certain group to refer the researcher to other possible participants. Initially the author of the current study attended a science fiction convention in a nearby city and asked a Star Wars fan club representative for contact information on science fiction fan clubs in Central Texas. The representative directed the author to a webpage with that information (http://www.theforce.net). Once information
on fan clubs in Central Texas was obtained via the website, the author contacted the
director of a local *Star Wars* fan club and was granted permission to attend club meetings
and club functions. Through casual conversation over the course of three months, the fan
club members referred the author to other science fiction fans outside of the club. The
author then followed up on these leads and contacted the referred individuals.

In addition to referrals from local fan club members, the author contacted the
owner of a local comic book and science fiction collectibles store to obtain more
referrals. At the time of this study, the owner had been operating the store for over 20
years and was well acquainted with several local science fiction fans via their regular
patronage of the store. He was able to provide further referrals for the author to follow
up on.

Potential subjects were then screened using the following criteria:

1. They had to either be a member of or referred by a member of a science
   fiction fan club or the owner of the local science fiction collectibles store.
   The referring individual had to confirm that the person being referred fit the
   author’s definition of *fan as aficionado* (Appendix C).

2. They had to be between the ages of 20 and 45.

3. They had to participate, on a regular basis, in a science fiction related leisure
   activity and have sustained the activity for two or more years.

4. Through self report, they had to confirm that they fit the author’s definition of
   a *fan as aficionado* (Appendix C) and confirm that at least three out of five
   levels of Jenkins (1992a) fandom applied to them (Appendix D).
Once subjects were chosen, they were asked to sign an informed consent form that outlined their rights as a research subject and assured them of complete anonymity via the use of pseudonyms (Appendix A). In addition, the author strived to follow the core principles of ethical inquiry found in Miles and Huberman (1994). These guidelines were as follows:

1. **Beneficence**: Maximizing good outcomes for science, humanity, and the individual research participants while avoiding or minimizing unnecessary harm, risk or wrong.

2. **Respect**: Protecting the autonomy of (autonomous) persons, with courtesy and respect for individuals as persons, including those who are not autonomous (e.g., infants, the mentally retarded, senile persons).

3. **Justice**: Ensuring reasonable, non-exploitative, and carefully considered procedures and their fair administration. (Miles & Huberman, 1994, pp. 289-290)

**Data Collection Methods**: Participants were interviewed about their science fiction related leisure activities and the role of flow in the activities. Each interview was also audio-tape recorded. In addition, the author took field notes before and during the interviews on the setting of each case and the body language and facial expressions of the participants during each interview. Photographs were also taken of science fiction related artifacts after the artifacts had been examined by the author. The photographs were cataloged according to name of participant, date photos were taken, site where photos were taken and activity or event that was associated with the photos (Appendix E).
The interviews were open-ended yet focused in nature. According to Yin (1984), focused interviews are shorter in nature than traditional open-ended interviews and are guided by a certain set of questions derived from the case study protocol. Yin (1984) states that interviews are an essential source of case study evidence because most case studies are about human affairs. These affairs are best reported and interpreted through the eyes of specific interviewees and well-informed respondents and can provide important insights into a situation.

Each of the interview questions was focused around the questions stated at the beginning of this chapter (Appendix B). In addition to the interview questions, the following demographic information was collected on each participant: Name, age, gender, ethnicity level of education achieved, current vocation, marital status and age participant entered fandom.

In order to address issues of internal validity, concept maps were created during the interviews to verify or identify the complexity and content of the participants’ science fiction related knowledge. These maps were available to the participants throughout the interviews to confirm that what was being recorded was accurate and valid.

Finally, messages posted on the local *Star Wars* fan club message board regarding science fiction related leisure activities were downloaded and included in the study to assist the reader in gaining a better understanding of the local science fiction fan culture.

*Post Activity Data Management:* Each time interview data were collected, the audiotapes were labeled and cataloged according to date and name of participant. Field notes, photos and informed consent forms were filed according to each subject’s name. Once the data were collected for all ten cases, the audiotapes were transcribed and the
transcriptions filed along with the field notes and photos. At this point, the data was ready for analysis.

*Data Analysis Methods:* Data collection and analysis proceeded simultaneously via the constant comparative method. Units of data were constantly compared within and between cases and back again to the literature on flow, adult interests and cognition and science fiction.

Since the current study involved multiple cases, two stages of data analysis took place. First, the data was analyzed and categorized within each individual case. Yin (1984), advocated a replication strategy when studying the cases individually. Initially, a theoretical framework is used to study one case in depth and then successive cases are examined to see whether patterns found match previous cases. This strategy was employed in the current study by maintaining consistent data collection and analysis methods within and across the cases.

According to Merriam (1998) each case must be treated as a comprehensive case in and of itself. Data are gathered so the researcher can learn as much as possible about the contextual variables that might have a bearing on the case. Second, the data was analyzed and categorized across the cases to look for patterns between cases. Merriam (1998) argued that this cross case analysis allows the researcher to see processes and outcomes that occur across many cases, to understand how they are qualified by local conditions and thus develop more sophisticated descriptions and more powerful explanations.
Verification of interpretation: Miles and Huberman (1994), raised the important question of how anyone will know if the findings of a study are any good. Issues of validity and reliability are of utmost importance in any study whether it be qualitative or quantitative. The remainder of this section outlines how these issues were addressed in the current study.

Reliability in qualitative research refers to whether or not the study is reasonably free from unacknowledged researcher bias and whether or not the results obtained from the data are dependable and consistent. In short, do the conclusions depend on the subjects and conditions of the inquiry rather than on the inquirer (Miles & Huberman, 1994)? These concerns were addressed by describing data collection and analysis procedures in great enough detail to provide an audit trail. The author was also forthright with known bias. In addition, multiple methods of data collection were used for triangulating results. Aside from audio-taped interviews, photographs were taken of artifacts at the sites. Field notes were collected and concept maps created and were made available for viewing by the participants throughout the interview process. Transcripts were also returned to all subjects for verification of what was said in the interviews. Finally, all data were retained and kept available for reanalysis by others.

Internal validity in qualitative research refers to whether the findings seem credible, plausible or believable (Miles & Huberman, 1994). Merriam (1998) further elaborated by asking, how congruent are the findings with reality? Do the findings capture what is really there? First, this concern was addressed through providing rich, thick, meaningful descriptions of the data and relating them back to established theory. Second, triangulation was implemented by collecting numerous sources of data, snowball
sampling involving referrals from multiple individuals and through solicitation of informants’ views of the credibility of the findings and interpretations. As mentioned in the previous section, transcripts were also taken back to participants to ensure the accuracy of what was transcribed. Additionally, spending an extended amount of time with the participants (six months) previous to data collection enabled the author to engage in long term observation of and interaction with the participants before the data was collected. Through these observations and interactions, the author was able to gain a greater understanding of the “reality” of the local science fiction culture. Finally, the study presented data that was well linked to categories found in an overarching theoretical framework. This was accomplished by first completing an extensive literature review and creating well defined research questions that related back to the theory of flow and additional literature on adult interests and cognition and science fiction fandom.

External validity is very limited in qualitative research because it speaks to generalizability and qualitative research by its very nature does not look for universals that exist free of context (Miles & Huberman, 1994). However, there are some aspects of external validity that can be found in qualitative research. The current study addressed external validity by fully describing the characteristics and settings of the sample to permit future comparisons with other similar samples. Threats to external validity were also disclosed by discussing the limiting effects of sample selection, setting and constructs used. Finally, the findings were connected to prior theory.

Conclusion

The following chapter will provide detailed information on how the previously discussed methods were implemented. The results found therein will be discussed in
subsequent chapters via tables, narrative and illustrations to facilitate visualization of the relationships among data pieces.
CHAPTER FOUR

Findings

Introduction

Since the current study involved multiple cases, two stages of data analysis took place. First, data were analyzed and categorized within each individual case. As mentioned in the previous chapter, Yin (1984), advocated a replication strategy when studying the cases individually. The theoretical framework of flow and the following five foundational research questions were used as a guide to study each case in depth:

Question #1: How is science fiction related knowledge integrated into the participants’ leisure activities?

Question #2: To what extent are components of flow evident in the participants’ leisure activities?

Question #3: How do the participants’ interests in science fiction related leisure activities initially develop?

Question #4: To what extent has this interest changed and/or evolved from its inception to the present and if so, how?

Question #5: To what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perception about learning new information in other domains?

The initial analysis was conducted by first reading through the transcripts, field notes and concept maps for each subject. Photographs taken at each site were also cataloged and numbered. During this initial stage, reoccurring comments and bits of salient or interesting information were highlighted in the text itself and possible patterns
were noted in the margins. This process was completed in a consistent manner across all ten cases.

Once this initial process was completed, coding began. Each section of each subject’s narration was assigned a number. Miles and Huberman (1994) advocated a system for the categorization of chunks of data so that the researcher can quickly find, pull out and cluster segments relating to research questions, hypotheses and constructs. The clusters of data found in the field notes, concept maps and transcripts were compiled and summarized for each subject on a Subject Summary Form (Appendix F).

Once this was completed, a list of codes was created from the patterns that were found both within and across cases and it was noted across how many cases the codes were found and in which subjects the codes were found (Tables 1, 2 and 3).

Once the transcripts, field notes and concept maps were coded, portions of the Waco Fan Force Message Boards were downloaded. These messages will be discussed in further detail and were intended, along with field notes from a fan club meeting and notes on attending a fan club movie event, to provide a richer and more complete context for the study. The photographs and site sketches are also discussed in the section on context. Demographic information was also collected and will be reported along with information on the criteria used to select subjects for the study. The remainder of this chapter is broken down into the following sections: Context, Demographics and Criteria for Participation, Patterns Relating to Knowledge Integration, Patterns Relating to Flow, Patterns Relating to Development, Patterns of Change and Evolution, Patterns of Transfer, Other Emergent Patterns and Conclusion.
Table 1

List of codes within and across cases

<table>
<thead>
<tr>
<th>Within and Across Cases</th>
<th># of Cases Found In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood Connection</td>
<td>10</td>
</tr>
<tr>
<td>Multiple Viewings</td>
<td>10</td>
</tr>
<tr>
<td>Transfer</td>
<td>9</td>
</tr>
<tr>
<td>Detailed Knowledge</td>
<td>8</td>
</tr>
<tr>
<td>Complexity-Story</td>
<td>7</td>
</tr>
<tr>
<td>Flow-Challenge/Skill Match</td>
<td>5</td>
</tr>
<tr>
<td>Character Identification</td>
<td>4</td>
</tr>
<tr>
<td>Flow-Distractions Excluded</td>
<td>4</td>
</tr>
<tr>
<td>Self Identity</td>
<td>3</td>
</tr>
<tr>
<td>Costuming Motivation</td>
<td>3</td>
</tr>
<tr>
<td>Complexity-Characters</td>
<td>3</td>
</tr>
<tr>
<td>Family-Past</td>
<td>3</td>
</tr>
<tr>
<td>Novelty</td>
<td>3</td>
</tr>
<tr>
<td>Family-Current</td>
<td>2</td>
</tr>
<tr>
<td>Flow-Action/Awareness Merge</td>
<td>2</td>
</tr>
<tr>
<td>Flow-Time Distortion</td>
<td>2</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>2</td>
</tr>
<tr>
<td>Nostalgia</td>
<td>2</td>
</tr>
<tr>
<td>Philosophy</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2

List of codes within cases

<table>
<thead>
<tr>
<th>Within Cases Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Development</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Cynicism</td>
</tr>
<tr>
<td>Story Development</td>
</tr>
</tbody>
</table>
Table 3

List of codes found according to subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>Codes Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick</td>
<td>Novelty, nostalgia, challenge/skill match, distractions excluded, childhood connection, transfer, multiple viewings, complexity-story, complexity-characters, family current</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Multiple viewings, distractions excluded, time distortion, childhood connection, detailed knowledge, transfer, philosophy, complexity-story, complexity-characters, lifestyle</td>
</tr>
<tr>
<td>Walter</td>
<td>Detailed knowledge, distractions excluded, challenge/skill match, multiple viewings, childhood connection, family-past, cynicism, transfer, complexity-story, character identification</td>
</tr>
<tr>
<td>Gene</td>
<td>Childhood connection, multiple viewings, character development, story development, control, challenge/skill match, time distortion, character identification, transfer, complexity-story, lifestyle</td>
</tr>
<tr>
<td>James</td>
<td>Detailed knowledge, challenge/skill match, childhood connection, transfer, multiple viewings, complexity-story, novelty</td>
</tr>
<tr>
<td>Leonard</td>
<td>Detailed knowledge, action/awareness merge, challenge/skill match, childhood connection, transfer, costuming motivation, philosophy, multiple viewings, distractions excluded</td>
</tr>
<tr>
<td>William</td>
<td>Detailed knowledge, action/awareness merge, childhood connection, nostalgia, novelty, multiple viewings, character identification, self identity</td>
</tr>
<tr>
<td>Kelly</td>
<td>Detailed knowledge, childhood connection, family-past, transfer, complexity-story, costuming motivation, multiple viewings, self identity</td>
</tr>
<tr>
<td>Nichelle</td>
<td>Detailed knowledge, distractions excluded, childhood connection, family-past, transfer, complexity-characters, complexity-story, character identification, multiple viewings</td>
</tr>
<tr>
<td>George</td>
<td>Detailed knowledge, childhood connection, transfer, self identity, family-current, costuming motivation, multiple viewings</td>
</tr>
</tbody>
</table>
Context

Context is of great importance when completing case studies (Creswell, 1998; Merriam, 1998). Since 50% of the participants in the current study belong to a local *Star Wars* fan club, messages from the club’s online message board were collected and reviewed to assist in providing an overall picture of the social interaction of the fan club members. As was mentioned in the previous chapter, the author of the current study joined the fan club in June of 2005 and was then given access to the online message board. From June 2005 to January 2006, the author regularly posted on the board and read and downloaded messages from other fan club members who were eventually chosen to participate in the current study.

The board is broken down into the following forums: Waco FanForce Events, Welcome Aboard! (a place to welcome new members), Questions and Suggestions, Movies and TV (relating to *Star Wars*), Expanded Universe, Collecting, Other Movies and TV Shows, Mos Eisley Cantina (a place to talk about non-*Star Wars* related topics), Comics, Games and Projects. As of January 2006, there were thirty-four members posting on the board.

The author spent most of her time visiting and posting in the Mos Eisley Cantina (approximately two to three times a week) where many of the fan club members would talk about their families, jobs, school, holidays, birthdays and other interesting topics that ranged from discussing how to purchase a two-headed snake online to how to stop the next door neighbor’s dog from barking. This provided a casual, non-threatening forum for getting to know potential subjects better and allow them in turn to know more about the author of the study. These initial interactions assisted in the interview process later
on because subjects were already familiar with the author and already knew about her intentions. When it came time to interview, the subjects were prepared and very willing to share more about their leisure activities.

Other forums that were even more relevant to the current study were the Collecting and Projects forums. Leonard, one of the subjects in the study, had been working on completing a Darth Vader costume. He consistently posted his progress in the Projects forum and included pictures of the costume as well (Figure 1)

![Figure 1](image_url)

Photographs of Leonard’s Darth Vader costume posted on the Fan Force message boards

Aside from posting pictures, Leonard regularly reflected on his progress as can be seen in the following post:

All in all, my Vader will be 'done' by Saturday at the latest. Not screen accurate by any means, but moreso than the one that posed for pics before the release (April?) with Tim. I'm pretty pleased with it so far. This project has helped me cope with my 'perfection' complex when costuming. With my Fetts, I ultimately gave up because I couldn't afford the time or money to make them 'accurate.' The cool thing about this project is that it can be ongoing. Most Vaders I've talked to are that way. Cape isn't good enough, so they buy/make a better one—this time 100% wool with the black satin liner and leather trim, instead of the poly/cotton...
blend without a liner and satin trim. After Halloween, I plan on tearing my helmet apart and redoing it. I'm stoked.

Two of the other subjects, Nichelle and Walter, are married and have been working on creating a *Star Wars* room in their house. They too have posted their progress in the Projects Forum as can be seen in the following post from Nichelle:

OK, it might not be big and in truth it is really an office, but I’m working on our very first *Star Wars* Room. Walter and I are working on turning the small room in between the dining room and kitchen into the new office. We are going to move both of our computers into the same room. My dad built us a long table and right now I’m in the process of gluing *Star Wars* trading cards to the top. I’ve had stacks of them just sitting around and finally found a use. After I finish we are going to pour a poly resin (I think that’s what it is called) over the top to make a hard surface. I’ve got my prints from C3 (Celebration 3--a large *Star Wars* convention) and different things to hang on the walls and we are going to build shelves for things we’ve collected over the years.

Other Fan Force members posted on the boards and encouraged and praised Leonard, Nichelle, and Walter on their projects as evidenced in the following posts referring to Leonard’s Darth Vader costume:

“It’s looking good man.”

“Congratulations on the helmet Leonard!”

“Wow, awesome Leonard.”

The Collecting forum was the place where members would share information on when and where new *Star Wars* collectibles were coming out. As will be discussed in subsequent sections, knowing early on where to find collectibles is of key importance if the collector expects to find the piece he or she is looking for. The following post provides information on where to find Force FX light sabers:

Good news is that they’re offering Anakin III, Vader IV, Luke IV and Mace II sabers, all with LED’s. The Mace and the Luke saber use 6 AA’s (batteries), but the Anakin and Vader only use 3 AA’s. All are $120 on the site. Gamestop’s price is $100, but you don’t get to choose the style, either Vader or Anakin,
according to the website. Gary at Gamestop can get whichever you want. At least that’s what he said at the movie.

In addition to posting on the message boards, the author attended fan club meetings and fan club events. Field notes were taken on two of these events and helped provide further information on the context surrounding the subjects. Following are some of the author’s reflections on the first fan club meeting she attended:

The meeting was in his home (Leonard’s)—a small house in Waco with a very large flat screen TV. Leonard was on the front porch to greet me and introduced me to everyone once I came inside. The group consisted of two couples which looked to be in their late 20s or early 30s, two single men which also looked to be in their late 20s or early 30s, and Leonard. One of the men was on the floor playing a Star Wars video game. As the evening progressed, Leonard proceeded to show clips from a bootlegged copy of Star Wars III Revenge of the Sith. He asked if I’d seen it yet and I said no. When I asked how he obtained the bootlegged copy, he simply responded, “I have a good friend who takes care of me.” Others in the room also talked about how it is very common at science fiction conventions for vendors to have contraband items for sale literally under the table. A clip of a local news segment that showed Leonard and a few other men in the room in Star Wars costumes at a local opening of Revenge of the Sith was also shown. At first, the group seemed uncomfortable with my being there, but as the evening progressed, they began to open up and share about their love of Star Wars. Most of the group was extremely knowledgeable about all things Star Wars. As the evening continued, the group chatted about going to conventions, creating costumes, the various Star Wars movies and their families. Finally, Leonard told me he created a vacu-form machine and is working on creating Storm Trooper armor with it. I asked him if I could return at a later time and get a demonstration of the machine. He thought that was a great idea. I left after about two hours.

Subsequent meetings were also very casual and did not occur on a regular basis. There appears to be very little structure to this particular club. It is more akin to good friends getting together to have fun every now and then. The author also attended one of the many events that the club members participate in. During the summer of 2005, a local drive-in was playing Revenge of the Sith. The Waco chapter of the Fan Force fan club invited the author and her family to attend and said that other local chapters from
nearby cities would be attending as well. The following reflections were recorded after
the event.

My family and I arrived around 7:00 and the movie didn’t start until around 9:00. The theatre was already filling up. A local Boy Scout troop was there cooking hamburgers. There was face painting for the children and lots of Star Wars fans from Waco and Killeen. Leonard was there in full costume and proceeded to show my husband and me the props he had made for it. Other fans were in costume as well. There was a Wookie, a Storm Trooper and some jedi knights. Leonard was very gracious and more relaxed. He was able to introduce me to more local fans. He also said that the ladies loved the Storm Trooper uniforms. He went on to say that he’d known many a Storm Trooper who didn’t go home lonely at night!! Right on cue, a pretty young woman in the back of a van popped her head out the window to talk to the Storm Trooper standing nearby.

In addition to the previous information, photographs were taken of artifacts at each of the homes relating to the leisure activities. The amount of collectibles varied with each participant. Some had just a few placed on the mantle in the living room and others had entire rooms filled with collectibles. One commonality found was that all of the subjects took extreme care with the collectibles and had them neatly displayed. Most of the items were still in their original packaging, however two of the subjects opted to take figures out of the packages and create dioramas of various scenes from the Star Wars movies. This particular activity will be discussed in more detail in subsequent sections. The collectibles primarily consisted of books, comic books, figures from the movies, light sabers, pictures and posters. However the collections were not limited to these. Some of the more unique objects were a life-sized Han Solo in carbonite, a life-sized Jar-Jar Binks, a collection of Pepsi cans with Star Wars pictures on them, a Mr. Potato Head toy dressed like Darth Vader (Darth Tater) and an X-Rated C3PO trading card. Photographs were also taken of the various costumes that the subjects created and of the vacu-form machine that Leonard made for creating armor.
Finally, site sketches of each interview site were included in the field notes. These sketches didn’t reveal a great deal of information. However one item of interest found in the site sketches was that items related to the leisure activities were displayed in common areas of the home such as on the TV set, fireplace mantle or on shelves in a common sitting room. All of the participants seemed to be very proud of their science fiction related knowledge and the artifacts associated with their leisure activities. Kelly commented in his interview that he is very proud of his collection and that he is “not shy” about telling others that he enjoys *Star Wars* a great deal. George also commented that he loves showing others his extensive *Star Wars* collection. He mentioned in his interview that it may be “an ego thing” but that he really enjoyed it.

The following section is a brief overview of the demographics collected and the criteria for screening used to choose the subjects. It is hoped that this information will provide further insight on the context surrounding the study.

*Demographics and Criteria for Participation*

As mentioned in the previous chapter, the following demographic information was collected on each of the subjects: name, age, gender, ethnicity, level of education achieved, current vocation, marital status and age participant entered fandom. See Table 4 for a breakdown of individual demographics and duration of interview times. Nine of the subjects were male. The female subject was one of only three active female members (including the author of this study) in the Waco Fan Force fan club. Eight of the subjects were Caucasian and nine of the subjects have completed at least some college coursework. Finally, nine of the subjects became interested in science fiction when they were very young. This particular finding will be expanded upon in later sections.
As mentioned in the previous chapter, subjects were chosen through a purposive snowball sampling method using referrals from local fan club members and the owner of a local comic book and science fiction collectibles store. Potential subjects had to either be a member of or referred by a member of a science fiction fan club or the owner of the local science fiction collectibles store. Five of the subjects were referred by the science fiction collectibles store owner and five were fan club members. The referring individual had to confirm that the person being referred fit the author’s definition of *fan as aficionado*. This was accomplished by providing the definition to the collectibles store owner and fan club members in advance.

<table>
<thead>
<tr>
<th>Name</th>
<th>Duration of Interview</th>
<th>Gender</th>
<th>Age</th>
<th>Interest Began</th>
<th>Ethnicity</th>
<th>Vocation</th>
<th>Education Level</th>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick</td>
<td>1.5 hrs.</td>
<td>M</td>
<td>33</td>
<td>5</td>
<td>Caucasian</td>
<td>Banker</td>
<td>BS Degree</td>
<td>Married</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>1 hr.</td>
<td>M</td>
<td>24</td>
<td>5</td>
<td>Caucasian</td>
<td>Doctoral Student</td>
<td>Master's Degree</td>
<td>Single</td>
</tr>
<tr>
<td>Walter</td>
<td>2 hrs.</td>
<td>M</td>
<td>24</td>
<td>3</td>
<td>Caucasian</td>
<td>Electronic Specialist</td>
<td>AA Degree</td>
<td>Married</td>
</tr>
<tr>
<td>Gene</td>
<td>3.5 hrs.</td>
<td>M</td>
<td>24</td>
<td>3</td>
<td>Caucasian</td>
<td>Music Man</td>
<td>BA Degree</td>
<td>Single</td>
</tr>
<tr>
<td>James</td>
<td>.75 hrs.</td>
<td>M</td>
<td>33</td>
<td>4</td>
<td>Caucasian</td>
<td>Estate Manager</td>
<td>BA Degree</td>
<td>Married</td>
</tr>
<tr>
<td>Leonard</td>
<td>1 hr.</td>
<td>M</td>
<td>32</td>
<td>3</td>
<td>Caucasian</td>
<td>College Student</td>
<td>2 yrs. College</td>
<td>Married</td>
</tr>
<tr>
<td>William</td>
<td>1.5 hrs.</td>
<td>M</td>
<td>43</td>
<td>15</td>
<td>Hispanic</td>
<td>Dept. Manager</td>
<td>High School</td>
<td>Married</td>
</tr>
<tr>
<td>Kelly</td>
<td>1 hr.</td>
<td>M</td>
<td>29</td>
<td>5</td>
<td>Hispanic</td>
<td>Manager</td>
<td>Some College</td>
<td>Single</td>
</tr>
<tr>
<td>Nichelle</td>
<td>2 hrs.</td>
<td>F</td>
<td>28</td>
<td>3</td>
<td>Caucasian</td>
<td>Library Tech</td>
<td>College Graduate</td>
<td>Married</td>
</tr>
<tr>
<td>George</td>
<td>1.5 hrs.</td>
<td>M</td>
<td>32</td>
<td>3</td>
<td>Caucasian</td>
<td>Business Owner</td>
<td>College</td>
<td>Married</td>
</tr>
</tbody>
</table>

It is interesting to note that all of the subjects reported a sustained interest in science fiction for 19+ years. This went well beyond the initial screening requirement of
sustaining the interest for 2+ years. Even William, the oldest subject who reported that his interest began at the age of fifteen has sustained his interest in *Star Wars* for twenty-eight years.

Also, through self report, all of the subjects confirmed that they fit the definition of *fan as aficionado* and confirmed that at least three out of five levels of Jenkins (1992a) fandom applied to them. The individual breakdown on which subjects felt which levels of fandom best applied to them can be seen in Table 5.

It is interesting to note that all but one of the subjects chose Level One-*Fandom involves a particular mode of reception*. This level speaks to watching a show or movie multiple times. This is further elaborated upon in the subsequent interviews. Many of the interviewees spoke of watching the *Star Wars* movies literally hundreds of times. There was also an overwhelming response to Level Two-*Fandom involves a particular set of critical and interpretive practices*. This speaks to the need that fans have for internal consistency across program episodes or movie sequels. The details have to be “right” and contiguous from episode to episode. Only one subject chose Level Three-*Fandom constitutes a base for consumer activism*. This was the only fan who has spoken back to network producers on behalf of an endangered series. Eight out of the ten subjects chose Level Four-*Fandom possesses particular forms of cultural production, aesthetic traditions and practices*. This is not surprising as the level speaks to the special interests of the fan community in regards to fan created products such as art, costumes, writings, music and movies. Finally, three of the subjects, all of which are fan club members, chose Level Five-*Fandom functions as an alternative social community*. 
The following section will be a discussion of the results of how subjects integrate their science fiction related knowledge into their leisure activities.

**Patterns Relating to Knowledge Integration**

The current section addresses the results found in response to the following research question: How is science fiction related knowledge integrated in the participant’s leisure activities? Patterns found in the data relating to this particular question are as follows: within and across cases; multiple viewings and detailed knowledge were found and within case only; character development and story development were found. The primary science fiction related leisure activities recorded for the participants and how much time they spent per week on these activities can be seen in Table 6. The amount of time spent pursuing the activities ranged from one to two hours reported by Patrick up to between thirty and forty hours reported by Gene.
Patterns Found Within and Across Cases

It was noted throughout all of the cases that the movies, TV shows, books, etc. had been viewed multiple times. Six subjects’ comments confirmed what was stated in Jenkins (1992a) regarding fandom involving a particular mode of reception; namely fan viewers watch television shows and movies multiple times to scrutinize meaningful details and create new meanings from current texts. It is through these multiple viewings that subjects are able to amass a great deal of knowledge about science fiction. Jenkins (1992a) also notes that rereading a text is central to the fan’s aesthetic pleasure. This viewing strategy extends the fans’ mastery over the narrative and accommodates the production of new texts from the series materials. Following were subjects’ reflections on multiple viewings.

“We’d stay up all night watching Empire Stikes Back because that was my favorite.”--Gene

“I can watch it and watch it and never be bored of Star Wars because I’ll always see something new. Something will always make me chuckle even though I’ve seen it a hundred times.”--William

“I like watching them (the Star Wars movies) and after you watch you know after like fifty times you know what’s gonna happen. You can also recite the line to ‘em when you’re in a different room ‘cause you know the pacing (laughs).”--Walter

“I watched the Star Wars VHS so many times--we still have it and whenever the laser gun starts firing, you know the blasters, the screen pops. I’ve watched it that many times.”--Nichelle
“I’ve watched the new *Star Wars* trilogy enough. I can basically recite the original trilogy in my head.”--James

Kelly commented that viewing the *Star Wars* movies multiple times challenged him mentally and that the movie creators kept his interest by planting “Easter eggs” in various scenes. According to Kelly, Easter eggs are things that are “out of place” in the background. He explained this further in the following quotation:

> It challenges me quite a bit--watching the movies as many times as I have. I started lookin’ you know the first time you watch it you’re into the story. The second time you watch it you try to fill in the gaps and things you might not have understood. And then you start goin’ into the third and fourth time and you start lookin’ at little things that you didn’t realize were goin’ on in the movie. They have different things on the DVD’s called Easter eggs and you see different things that are in the movie. There was a couple of scenes in *Attack of the Clones* where they were showin’ Padme talking to Anakin. In the background they were showin’ different ships flyin’ by and there was actually a Ty Fighter from the original *Star Wars* flyin’ by. You know just the casual fans, they don’t catch that--you know, people who are mainstream.

The pattern of detailed knowledge was found in eight out of the ten subjects. These subjects all expressed a great deal of detailed knowledge about the *Star Wars* movies and related Expanded Universe. The *Star Wars* Expanded Universe can best be described as all of the books and comic books that provide a continuation of the story and/or back story on the characters found in the movies. Nichelle described it in the following quotation:

> I describe it (the Expanded Universe) as the guy to the left of Palpatine. It’s his story. It’s like there was a guy in the room named Prince Xizor in the scene in *Empire Stikes Back* when Palpatine and Vader are talking about the son of Skywalker. Prince Xizor’s family was killed when a chemical agent was released in a containment facility in his hometown on his planet. Darth Vader struck the entire area with a star destroyer to you know, eliminate any complications. So Prince Xizor had it out for Darth Vader. This is from the book, *Shadows of the Empire* which takes place between *Empire Stikes Back* and *Return of the Jedi*. 
### Table 6

**Leisure Activities of Each Participant**

<table>
<thead>
<tr>
<th>Name</th>
<th>Activity</th>
<th>Time Spent Each Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick</td>
<td>Watching TV shows/movies and collecting</td>
<td>1-2 hours</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Reading, watching TV shows/movies</td>
<td>10-30 hours</td>
</tr>
<tr>
<td>Walter</td>
<td>Movie making, reading, collecting, watching movies</td>
<td>6 hours</td>
</tr>
<tr>
<td>Gene</td>
<td>Writing</td>
<td>30-40 hours</td>
</tr>
<tr>
<td>James</td>
<td>Collecting, watching movies</td>
<td>No time specified</td>
</tr>
<tr>
<td>Leonard</td>
<td>Costuming, watching movies</td>
<td>No time specified</td>
</tr>
<tr>
<td>William</td>
<td>Collecting, costuming, watching movies</td>
<td>No time specified, but referred to it as consuming him at one point</td>
</tr>
<tr>
<td>Kelly</td>
<td>Costuming, collecting, watching movies</td>
<td>10-15 hours</td>
</tr>
<tr>
<td>Nichelle</td>
<td>Reading, collecting, overseeing Fan Force websites</td>
<td>10-15 hours</td>
</tr>
<tr>
<td>George</td>
<td>Collecting, costuming, watching movies, reading</td>
<td>No time specified</td>
</tr>
</tbody>
</table>

All of the subjects’ detailed knowledge of science fiction was applied in different ways to their related leisure activities. Patrick for example uses his knowledge to assist in finding rare collectible items both for himself and the local science fiction collectibles store owner mentioned earlier. “I’d go to a lot of conventions and got really good to the point that Brent would tell me some things he wanted and I’d keep my eye out at the
conventions and buy stuff and he’d just reimburse me ‘cause he knew that I’d developed an eye for what he wanted and kind of the market for it.”

Five other subjects also used their detailed knowledge of science fiction to assist in finding collectibles.

Walter uses his detailed knowledge of *Star Wars* to assist in creating his fan movies. “I mostly know about the movies and how they were made and basically pretty much the sets, props and different filming aspects.” Walter further expanded on his movie making by reflecting on one short film he created for a job interview.

There’s *The Dreamer* which I did for a job interview. My three minute movie I did in four days. It is about a guy who falls asleep and gets sucked into a dream world. He has to escape from a robot that is shooting a ray gun. He automatically pulls up another ray gun and a locator to find the robot and so he defeats the robot and wakes up from his dream.

Nichelle used her extensive knowledge of *Star Wars* to apply for a job as a science fiction expert.

I applied for a job right after I graduated from college as the Web Content Person on Starwars.com. I got a really nice kiss-off letter too! It had the Lucasfilm Logo. I still have it somewhere too. I think it was Pablo’s job ‘cause he went to Sidney and wrote all the content for the episode 3 site. You had to have expertise for *Star Wars* knowledge. You had to be able to write code and you had to be able to you know, just write something coherent for the webpage. I think they were looking for someone with more of a journalism background.

Three of the subjects also used their knowledge when creating costumes. Kelly, one of the costumers, reflected on this in the following quotation:

Each jedi has his own style of costume. It gets all the way down to the type of fabric that’s actually used. They try to make it part of what would be considered their home world. Sometimes different robe styles can you know, show ranks and where you’re at in your status; whether you’re a jedi knight or you’re a master. I play the character of a master.
Three of the subjects also commented on how they used their knowledge in problem solving when it came to their leisure activities. This was reflected upon by Leonard in regards to costuming, Gene in regards to writing and Walter in regards to making props for his movies. This is evidenced in the following quotations.

"It took me a long time to figure that out (a special effect for his movie). How do I make light sabers? It’s the standard everyday question. And it’s like well look at this guy’s tutorial (online) and he makes awesome light sabers. And so he has like three pages of stuff to do and it’s like, I can do that another way and it would be a lot easier." --Walter on coming up with a better way to make light saber special effects.

"You know, I love, well, I say I love but I guess it’s probably my Achilles heel is skipping forward and writing vignettes that happen after where I currently am (in the story). You know things I know I want to put there and just kinda sketching out that vignette so I don’t forget it. That’s for later. It’s like takin’ hot dogs and freezing ‘em; to use a weird metaphor. But yeah, so a lot of times those vignettes will get the wheels turnin’ and say ok, I know kinda how they got here, but you know if that happened back there in that spot where I was gonna put somethin’ that I didn’t know what I was gonna do, I would say, hey this will make a lot more sense." --Gene on story development in his writing.

"Yeah, it’s like you know you want to make something and you have an idea of how you’re gonna make it work and then you start doin’ it and then you see that maybe that first idea or second idea you had doesn’t quite fit that way so you have to readjust and rethink the plan. So the thing about the mental challenge with the costuming is just overcoming those first hurdles and realize that each time you first start up on something you’re gonna make mistakes and you’re gonna have to redo some things. As long as there’s some mistakes you can afford to make as far as not just financially but time wise as well, then those are good mistakes." --Leonard on creating his Darth Vader costume.

Finally, George not only spoke about using his extensive knowledge of Star Wars for collecting, but for creating dioramas as well. George by far had the most extensive Star Wars collection of all of the subjects. He has been collecting for over twenty years and has built a separate Star Wars building in his back yard. He reflected on collecting and creating dioramas of various scenes from the movies in the following quotation:
Look at how few figures there are in that big space (referring to figures still in original packaging hanging on a wall). Look at how many figures there are in that little space (referring to a diorama). It’s an easier way to display it, it tells the story of the movies and you get to actually, I won’t say become part of it, but you know you can view little things from the movies. I have a lot of little jokes in ‘em which I’ll show you. Um, I’ve got Tron from the movie Tron and he’s hangin’ out in the cantina as is the Lone Ranger and Tonto.”

**Patterns Found within Cases**

The within case patterns of character development and story development were found in only one subject. Gene’s primary activity is writing and he, among all the subjects, spends the most time per week participating in his leisure activity; approximately thirty to forty hours. Both patterns refer to the character and story development of a fantasy novel he has been writing since early high school. He draws from many sources including his knowledge of *Star Wars* in particular and science fiction in general to develop his characters and storyline. In fact, the majority of the interview with Gene consisted of his explaining his writing process and how he develops characters and storylines. The following quotation is a reflection on how the characters in the book have changed and evolved over the years.

I mean this has been ten years in the works and yeah the characters have undergone a lot of change, but so have I and we’ve grown together. And, you know the characters--I used to approach it from the way they’re gonna do this because I want them to do this. And now, I’ve kinda taken a little bit more of a hands off approach. I almost let the characters tell me where the story’s going to go. Like we know what Oleanna’s personality is. In this situation, what is she going to do? The characters have grown as I’ve grown and so they’re less--they become less like pieces that I move around on a chess board so much as taking on life and identity of their own, and in a sense they cease to be pawns and become friends if that makes sense.

In the following quotation Gene further reflects on how *Star Trek* helped influence the believability of his story development.
Right, well *Star Trek*. *Star Trek* is very believable. Now it’s very boring in places, I mean well, let me back track and amend that statement that from a story’s standpoint it can be slow because it’s hard to have a knock down drag out fight on the bridge of a ship. You know it’s just a different kind of sci-fi. But at the same time it was very believable and at times very possible. So, reading my story is it possible that you could in a sense meet up with a phoenix in the woods who gives you the Adunakris (a magical stone) and you turn around and you find a gypsy apothecary hunting herbs n the same part of the woods--not unheard of. You’re having to tie lines of believability back to these things. I mean it’s just that you are going to have to explain how each of those explanations will have to be believable.

**Summary**

In summary, it was noted that all ten subjects had viewed movies and/or TV shows multiple times in order to acquire knowledge. Eight out of the ten subjects interviewed spoke about how their detailed knowledge of science fiction was integrated into their leisure activities. Three of the subjects spoke about how they used their knowledge for creating costumes. Six of the subjects used their knowledge to assist in their collecting. One of the subjects used his knowledge for making movies, one of the subjects used her knowledge to apply for a job as a science fiction expert and one of the subjects used his knowledge in creating characters and storylines for a fantasy novel he is writing.

**Patterns Relating to Flow**

This section addresses the results found in response to the following research question: To what extent are components of flow evident in the participants’ leisure activities? As reported previously, the nine major components of flow are:

*The activity has clear goals each step of the way.*  When something is enjoyable, it has clear goals. There is no ambiguity.
There is immediate feedback to one’s actions. Individuals are always aware of how they are doing.

There is a balance between challenge and skill. Individuals know when abilities are well matched to the opportunities for action.

Action and awareness merge. In a flow state, an individual’s mind does not wander from the task at hand.

Distractions are excluded from consciousness. This is an awareness of what is relevant in the here and now. Flow is the result of intense concentration on the present which temporarily relieves an individual from the usual worries of everyday life.

There is no worry of failure. While in a flow state, an individual is too immersed in the task at hand to be concerned with failure.

Self consciousness disappears. In everyday life, individuals are concerned with how they appear to others. This awareness of self disappears in the flow state.

The sense of time becomes distorted. Generally in a flow state an individual “forgets” time. Hours may pass by in what seem like a few minutes.

The activity becomes autotelic. The activity is being engaged in simply for its own sake. It becomes autotelic which is Greek for something that is an end in itself (Csikszentmihalyi, 1996).

The following elements of flow were found within and across cases: A balance between challenge and skill, distractions excluded from consciousness, a merging of
action and awareness, and time distortion. There were no within case only patterns of flow found.

*Patterns Found Within and Across Cases*

*Patterns of a balance between challenge and skill* were found in five subjects.

Patrick, a fan of the TV show *Battlestar Galactica* spoke about how watching the show was work that’s fun.

They (the creators of the show) did things that made you have to work to keep up with them. Even if it was fake science it’s still science that you’re tryin’ to understand and tryin’ to put together and in new episodes you’re remembering stuff from last season and you’re thinkin’ that would apply here. *Battlestar Galactica* is a series that’s an ongoing serial and one you really gotta keep up with so I like the challenge of it.

Walter, in talking about his movie making also alludes to this by commenting that while the hobby is very challenging, it is “kinda fun” and “a good challenge.”

Gene also comments when referring to his writing, “when it’s going well, I mean it’s exciting. It’s like anything that you love that’s going well. I mean it brings you back more often to the keyboard.”

James, another collector, when asked what the main reason was for enjoying this activity responded by stating, “I collect a lot of stuff and I get a rush out of it. I get a rush out of buying an action figure. There is always something new to find.”

Finally, Leonard, when asked what it is about this activity that keeps him pursuing it further, he commented, “you can always make it better.”

*Patterns of distractions excluded from consciousness* were found in four subjects.

Jeffrey, when asked what he thought the main reason was for enjoying his leisure activities, responded by stating, “I would say the escapism. I enjoy it. I know it’s not
reality and I deal with enough you know in my own life workin’ at school. I like to just read something that is, you know, basically had no basis in reality. It’s just enjoyable.”

Nichelle also commented on how her love of *Star Wars* “takes her away” from reality. “You know daily life can be so horrifying and here we are standing around lookin’ at this little useless piece of plastic and so happy. When you have a bad day at work you just go home and play with your Sy Snootle and your Xizor figure. It just makes you happy.”

This was also evidenced in Walter’s interview in the following comment, “you got work and you gotta deal with people there at your work and people in general, you got bills that you have to pay. It’s just nice to get sucked up into a little world for about two and a half hours and just live somewhere else for a little while.”

*Patterns of merging action and awareness* were found in two subjects.

When William was asked about how he felt when his favorite activity was going well, in this case collecting and finding the perfect piece for his collection, he responded in the following way:

I’m like YESSS!!! You know, finally! But it’s you know, I just need this one last piece and that’s it and then you see something else. It’s the thrill of the hunt. It’s the exhilaration you feel when you walk into a store and you go to the toy department and bam! There it is. I’ve found the Holy Grail. You hear the angels in the background. The Force is with me. It’s exciting. I used to spend so much time; hours and hours just hunting for that figure. I was so, so focused on what I wanted.

Leonard also alluded to a merging of action and awareness when working on his Darth Vader costume. “I would get home from school some nights and go out into the garage and be there for about an hour to an hour and a half working on things. It was nice to get out there and just kinda concentrate on the task at hand and kinda get away.
Some people might go to the bar for relaxation, but goin’ out to the garage and workin’ on *Star Wars* stuff is relaxing for me.”

*Patterns of time distortion* were also found in two cases.

Gene commented on this in his reflections on when his writing was going well. “Ok, well, as far as how much time I spend on it depends on how things are going. If things are flowing, I may spend about six hours a day until they stop--about six or seven hours a day until they stop or carpel tunnel sets in--take your pick.”

Jeffrey was the other subject that commented on the flow of time when he was reading. “When I’m in the zone and when I’m reading I really just enjoy the book. Hours will pass and if I’m having a bad day I can just pick up a book that I really like and just zone out for three or four hours.”

**Summary**

In summary, various patterns of flow were found across a total of eight out of the ten subjects. And while it was not stated directly, it appeared that all of the subjects’ activities were autotelic in nature--they were engaging in an activity simply for its own sake.

*Patterns Relating to Development*

In this section, the results for the following research question will be presented: How did the participants’ interests in science fiction related leisure activities initially develop? All ten subjects reported that their initial interest began in childhood or youth. Thus the primary pattern noted for this question was childhood connection. Three of the subjects also reported that parents were also science fiction fans and/or had an influence
on how the interest developed. This pattern was coded as family-past. There were no within case only patterns found relating to this research question.

*Patterns Found Within and Across Cases*

*Childhood connection* was noted numerous times across all of the cases. Nine of the subjects reflected on the fact that their interest began at a very young age--between three and five. The remaining subject became interested at age fifteen which was when he first saw *Star Wars*. However this oldest subject also noted in his interview that he’d always liked the *Star Trek* series which pre-dated the release of *Star Wars*. So it appeared that he already had a mild interest in science fiction before the age of fifteen.

James reflected on how seeing *Star Wars* for the first time as a child made an impression on him.

When I first saw *Star Wars* I was six years old. My dad took me to see it. So my dad took me one time and it was actually down there at Baylor called the Ivy Twin (movie theatre) and I still remember going to see it and I’ve been a fan ever since. I bought the toys for the first two *Star Wars* movies, but when *Return of the Jedi* came out I was kinda gettin’ junior high level and it wasn’t cool to buy toys so I kinda stopped doing that. I never stopped watching the movies. I’d watch them whenever they were on TV. It just made an impression on me--I imagine just the grand scale of things. It really made an impression on everybody.

Other subjects reported similar feelings about when they first became interested in science fiction.

Jeffrey reported that, “I was probably about five the first time I watched *Star Trek*. We didn’t have cable at my house growing up so that was just on the main channels on Saturday night at six. That’s when we ate dinner and I’d be like whoa!”
it was probably the technology and the ability to transport from one place to another in
the blink of an eye.

Patrick noted that, “There aren’t many things that I can go back to kindergarten
that have always been one way or another been somethin’ at the forefront or back of my
mind. Everything for me as a kid hinged either around music or science fiction.”

Leonard also remembered the first time he became interested in Darth Vader.

I remember when I was probably eight or nine years old, no, it was probably more
like six or seven, but we went to the Sears store there in Pasadena where we lived
because Darth Vader was there. I got a signed Darth Vader poster and I think I
showed that to you where it’s actually signed “Darth Vader” so, I’ve had that for
many, many years and I think that kinda sparked it. I don’t even remember the
first (time he saw the movie) because my parents took me to the theatre when I
was three and a half years old and my mom said the whole time the commercials
came on that I was like, “I have to see this movie, I have to see this movie.” And
so they took me three times that week.

The remainder of the subjects reported similar experiences when they first
became interested in their current love of science fiction. Many of them relayed the
feeling of excitement they felt the first time they saw their favorite movie or TV show.
They found the story, characters and technology to be new, exciting and very engaging.
These initial childhood impressions sparked a long standing interest in learning more.

*Family-past* was a less notable pattern that was found in three of the subjects.
These subjects reported that a parent or other family member played an integral role in
how their interest developed. Following are reflections from these three subjects.

Nichelle spoke numerous times of an early family connection in her development
of her interest.

My dad had a bootleg copy of *Star Wars* on Betamax around ’79, ’80 and I was
born in ’77 and they walked in and they put it on and this was before I could
really talk, the way I hear it is before I could really talk is they’d put on *Star Wars*
and I just sat down in front of the TV and watched it and they like to say my first
full sentence was “put on Star Wars daddy.” I loaned dad Firefly (a popular science fiction TV show) and you haven’t lived ‘til you’ve seen your 62 year old father geek out over a television show! He geeks out over it! When I told him I was gonna meet River (a cast member), he was like, really?! I was like, oh, dad, she’s like 17! Stop it! Eewww! Yeah, he even bought it and this man doesn’t buy things.

Walter also reflected on a family connection. “I think according to my mom, I was three years old when Star Wars was on TV. She’s a closet sci-fi fan and so is my dad. I think my dad’s more of a sci-fi fan than my mom is though, but I think my mom’s more into Star Trek.” Walter also notes that his parents created bootleg copies of Star Wars as well by renting episodes four through six from a local video store and making copies. “So she (his mom) got all three of them and we watched them and then my dad made bootleg copies (laughs). Instead of buying it they made copies of it so I had Star Wars episodes four, five and six on videotape--one videotape.”

Kelly also noted in his interview that his dad is a science fiction fan and was interested in seeing Star Wars when it came out.

Well my love of Star Wars began as a kid. I would say probably around five years old was when I saw one of the first Star Wars movies which was Empire Strikes Back. My father actually took me to see it in the movie theatres here in Waco in the old Ivy Twin Cinema. That’s kinda where it got started and I was so amazed with the flying ships and the sounds and these guys jumpin’ around with these laser swords as I called them when I was younger. It was like, man that was so neat--it’s cool.

Summary

In summary, all ten of the subjects reported that their interest in science fiction began in childhood or youth. Three of the subjects reported that their parents were science fiction fans as well. Many noted that what captured their attention initially was the grand scale of the movie or TV show, the new technology and the fascinating
characters. Two related emergent patterns that will be discussed in a later section are complexity-story and complexity-characters. Both of these patterns also played an integral role in the development of and especially the continuing interest in science fiction.

*Patterns of Change and Evolution*

The following section is in response to the research question, to what extent has this interest changed and/or evolved from its inception to the present and if so, how? In contrast to the previous section, there were no across case patterns of change and evolution found. All but two of the subjects commented on how their collecting has changed and evolved, but it was only commented on once by each subject in response to the interview question, “How has this interest changed and/or evolved from the beginning to the present? Explain.” Gene, the writer, spoke throughout his interview about how he developed his characters and how they continue to evolve, but he did not provide any information on how the activity of writing itself has changed or evolved over the years. The other subject, Walter, provided the only within case change and evolution pattern. Many of the subjects’ response to this question spoke of scaling back on their collections as evidenced by the following interview excerpts.

“I just enjoy this. I like to walk in and look at this stuff. But you catch me at a really bad time. I’m pulling back because I don’t have enough room. I’m pulling back because I’ve gotten to where I think, let’s be sensible here. This is enough! There has to come a time you say cut it out!”--George

“From the beginning to now I would say it went from wanting everything to being a little more refined in what I’m looking for and what I’m looking at.”--Leonard
“I believe it’s evolved to the point where I’m more mature in my collecting than I was. Now I’m to the point where ok, I’m not going to collect every napkin, every--I mean if it said *Star Wars*, I bought it.”--William

“I’ve been collecting toys, collectibles, things like that but I’ve lost a lot space in my house. I have to cut back on it. I’ve scaled back quite a bit in the past year or so.”—James

*Pattern Found within Cases*

There was only within case pattern was provided by Walter. Walter’s initial response to the research question was unique in that he stated he has become less cynical as he’s gotten older. This was in relation to his views on other fan movie makers. He reflected on how many of the fan movie makers had a lot more time and resources available to them for making movies. The following interview excerpts from Walter reflected this.

There were parts where I was cynical. I was tryin’ to go to the fan films and seeing what other fans had done and then you know others would say, “Oh this guy’s so great he should be at Lucasfilm!” Well, he’s just a guy. He’s got too much free time! It was like the fourteen year old kid you know whose parents were loaded and give him like a thousand dollar video camera and new computers so I’m gonna make this fan film with my rich buddies. And we’re gonna spend hours and hours after school or during school working on it and I’m like, yeah, I got a job. Yeah, I pay stuff. I pay student loans. I go to work. I’ve kinda accepted there’s people out there who you know who have the money and the funding to do what they want to do. I have me and my struggling movie career and it’s do what you want to do I guess. I still want to say some of those fan film people are posers.

This came up several times in later interview segments. He related that he is less concerned now about these individuals than he used to be, thus the change and evolution
that has taken place regarding his movie making is in his attitude towards other fan movie makers.

Summary

All ten subjects responded to a direct interview question on change and evolution of their interest. While all had different answers regarding their individual leisure activities, no reoccurring patterns with the exception of cynicism were evident.

Patterns of Transfer

This section is in response to the fifth and final research question, to what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perception about learning new information in other domains? Nine of the subjects reported that their knowledge has assisted them in learning new information in other domains. Thus a pattern of transfer was noted within and across nine cases. As will be highlighted in the following interview excerpts, this pattern was manifested in different ways in different subjects.

Patrick reflected on how his knowledge of and interest in Star Wars and space made him feel as though he was thinking about things that were more advanced than his peers which in turn gave him more confidence.

It was my huge interest in space and the stars and all that stuff and wantin’ to be an astronaut and also Star Wars is kinda the entertainment outlet that let me participate in that on a recreational basis, but I kinda feel that all of that stuff always gave me, I don’t want to say a superiority complex but I just felt that I was thinkin’ about things that were more advanced than other kids who were talking about the Cowboys playin’ the Redskins. It think it (Star Wars) was somethin’ that was able to capture my interest, to keep me focused. There was a confidence that came from it. I think it prepared me to consider things or look into things that a lot of people just may jump to conclusions on.
Patrick further reflected that this knowledge helped him in science class when he was younger.

It led me a lot more into the scientific path and I think I did very well in science all throughout school. When science was introduced to us and became more and more a part of our curriculum, there were a lot of things I was already familiar with that other kids were just learning.

Nichelle reflected on how her knowledge of Star Wars helped her write a paper in her Music Appreciation class.

I’ve written papers about Star Wars. Like for Music Appreciation I wrote a paper comparing John William’s Star Wars score to the Wagner ring operas. In the ring operas he introduced the character themes and that’s basically what I centered it around--like the Obi-Wan character theme and the wise old man. I can’t remember any more but they had like all the different themes for all the different characters and I just wrote a paper about that. I was so happy to get a B. That was the hardest class I took in college--Music Appreciation.

James spoke about how his interest in Star Wars got him interested in philosophy.

“It may have got me a little more interested in philosophy. There is actually a book called Star Wars and philosophy I’ve been reading. It’s pretty interesting. When asked if the knowledge he gained from Star Wars helped him understand philosophy better he replied, “Yeah, it kinda fleshed things out a little better. You can understand what they’re talking about. It gives you examples of life.”

Jeffrey reflected on how his knowledge helped him acquire a larger vocabulary and improve his abstract thinking skills.

I would say mainly what comes to mind is all the reading has forced me to acquire a bigger vocabulary because some of the words that you gotta understand when I started reading these 300, 400 page Star Trek novels in the 5th grade. It also increased my abstract thinking because a lot of the concepts are kinda far out there that have a basis in physics or science or somethin’ and you gotta struggle to understand.
Leonard, like Patrick, expressed increased confidence as a result of his *Star Wars* related knowledge. When asked about the skills he acquired while learning to make his Darth Vader costume, he replied,

> They (the skills) give me confidence to do things I never have before. Before I started costuming I may not have picked up a power tool and just gone to work on somethin’ but after doing some costuming, I wouldn’t be hesitant to do somethin’ like remodel a house. You know there are other projects that I look at now and go, “yeah, I could do that.” I just kinda do a little bit of research and find out what’s involved and see what I need to do and then get it done.

George, the owner of a video productions company, reflected on how his knowledge of science fiction had a direct influence on his choice of vocation.

> Well I do video production work. I do think I have the ability to think outside the box because of sci-fi. V (a science fiction TV show), you’ll get a kick out of this because you remember it. Mike Donavan, the news man/camera man is the reason that I became a photog (photographer)--yeah, that’s a direct link as to why I became a photog because of his character. That is a direct link and his doing war coverage. I remember because they were in the killing fields when they first arrived to doing the investigative reporting. That is what I wanted to do. That is what I set out to do.

Other subjects reported similar reflections on how their knowledge of science fiction assisted them in learning new things. However, two subjects, Kelly and William also reported that their knowledge of *Star Wars* helped them be better people. This is reflected in the following quotation from Kelly:

> I think in a way it kinda helped me in growing and being a parent, you know being responsible. My association with *Star Wars* is a jedi is always patient you know, thinking--don’t act before you think, think before you act. You know when handling different situations that kinda ties in together. You know, I might not say, “Anakin is this situation might have said…” but just the presence of mind of what they’re about. What a jedi is about would help me slow down and assess the situation and make a good decision.

William also spoke about how he took lessons he learned from *Star Wars* and applied them in his personal life.
One of my favorite scenes in episode five, *Empire Stikes Back* is the scene where Yoda and Luke are talking and Luke’s ship, the X-wing goes down to the muck and Yoda tells him to use the Force to take it up and Luke tries and it moves, but it sinks deeper and Luke makes the comment, “you ask the impossible.” Yoda of course does it and Luke says, “I don’t believe it.” And Yoda says, “that’s why you fail. Just do it or not--there is no try.” There’s a lot of things I’ll take out personally and even coach some of the guys at work. I’ll say, “you know Yoda says do it or not--there is no try” when I challenge them.

*Summary*

In summary, nine of the subjects reported that their knowledge of science fiction assisted them in learning new information in other domains. Two of the subjects also reported that their knowledge assisted them in their personal lives. Finally, one of the subjects also reported that his knowledge of and interest in science fiction directly influenced his choice of vocation. The following section, Other Emergent Patterns, is a review of additional patterns found within and across cases that did not directly pertain to the original five research questions. Even though these patterns were not directly related to the original questions, they were still compelling and provided further insight into the subjects’ leisure activities.

*Other Emergent Patterns*

Additional emergent patterns found across cases included complexity-story, complexity characters, character identification, self identity, costuming motivation, novelty, family-current, lifestyle, nostalgia, and philosophy. Control was the only within case pattern found.

*Patterns Found Within and Across Cases*

*Complexity-story* was a pattern found across seven cases. This pattern can best be explained as the subjects’ continuing interest in a story that is complex enough to capture
and keep their attention. There were many references throughout the interviews about the necessity of a “good story” in sparking and sustaining interest. Many of the subjects defined a good story as being “classic”, “epic” or “mythic” in nature. The following excerpts from Gene and Patrick reflected this.

Lucas set it up as this big epic story. It’s got all of your classic elements in it. It’s got your underdog hero in Luke Skywalker, it’s got your knuckle dragger, you know in Han Solo who thinks before he acts, you’ve got the wise man in Obi Wan Kenobi, you’ve got your villain--boy, have you got a villain in Vader and of course you’ve got your princess in trouble who’s been kidnapped in the enemy’s tower so to speak and you’ve got your magic weapon which is your light saber. I mean all of these are classic elements. It’s just a good story and I think that’s what set it apart.--Gene

Patrick relayed similar reflections when he was asked what is it that appeals to him about his favorite show, Battlestar Galactica.

They’ve got so many stories going on at once. It’s just so deep and intertwined. I actually have conversations with people and we’re sittin’ around tryin’ to figure out over lunch who’s what and you know is this person a Cylon or what? I just haven’t done that in a long time with a TV show or movie. Now, granted, we did it with Star Wars episode 1. It (Star Wars) was such a basic story but at the same time nothing else came close to it as far as my imagination.

Complexity-characters was a closely related pattern found in four subjects.

Similar to complexity-story, complexity-characters refers to the subjects’ attraction to complex, well developed characters in a story. Patrick once again reflected on this in the following quotation:

I used to watch the old one (an old Battlestar Galactica series) and it just drove me nuts as a kid. I like the characters but there was never enough to sink your teeth into. It just didn’t have enough to really pique my interest but the new one that started a couple of seasons ago is just outstanding. I personally have never seen a better TV show fit for me or TV series because one, they took the whole idea of Cylons from the old one and I thought they just spun it perfectly into the new series. The fact that you know the Cylons were created by the humans and then rebelled against the humans and now that they can actually mimic being human--the possibilities are endless as far as who’s what and what’s goin’ on and you know nobody can trust anybody.
Character Identification was a pattern found in four subjects. This pattern refers to how the subjects personally identified with their favorite characters. Both Kelly and William are costumers. When asked why they chose to be jedi, they reflected on how they personally identified with the jedi in the Star Wars movies.

“He’s (the jedi) the consummate good guy. He’s the protector and he’s the wise person. You know, he may not get all of the glory, but that’s not what they’re about. They’re kinda that person in the background that’s always there that you know can make the right decision.”--Kelly

“My costume is typed after Obi Wan Kenobi which is my favorite jedi. I loved the wisdom of the jedi, the discipline of the jedi. I liked the style of it (the costume in the movie) so I typed my costume after his. The jedi were the perfect ones. I’d like to have that wisdom. I’d like to have that type of discipline in my life.”--William

Walter and Nichelle both reflected on how the characters are like good friends.

“They’re your buddies. I hate to say it, that sounds pathetic, but they’re your buddies.”--Nichelle

“It’s like, yeah, they’re my buddies. There’s Zoe, Mal, Wash, Jayne (characters from the science fiction TV show Firefly) and Walter!”--Walter

Self Identity was a pattern found in three subjects. This pattern reflected passages in the interviews where the subjects referred to how others identified them by their leisure activities (ie., “He’s a Star Wars nut!) and how their love of science fiction is a “part” of them. The following excerpts clarify this further.

“It’s a part of me. I’m the go to Star Wars guy. Go to William, he knows about Star Wars.”--William
It enhances my social status because people come up to me all the time at work and say, “Hey, what’s goin’ on with this part of the movie? What was their thinking behind that?” I tell them I’m not shy and I’ll tell them I enjoy Star Wars very, very much and you know if you walk into my job you could probably walk up to anybody and say, “How much do you think Kelly really likes Star Wars?” And they’ll say, “Oh, he’s a Star Wars nut!”--Kelly

“It’s still a part of me. I love to see your expression when you walked in and were like “holy crap!” (laughs). You know that’s what I like and that may be an ego thing, but I really enjoy that.”--George referring to his Star Wars collection

Costuming Motivation was a pattern found in three subjects--all being costumers. The main similarity found across the cases was that all subjects reported the primary reason for costuming was the reaction of the children they came in contact with.

“The costuming I enjoy I guess because I love when you dress up and the kids go nuts.”--George

“I can’t tell you how many kids want to come up and look at me and some of them take pictures. I do it for the kids. It’s just fun.”--Leonard

“The biggest feeling I have when you’re out there is when you’re talking with kids and you’re seeing them and they point at you and say, “Hey that guy’s a jedi!” They come up and they give you a big hug and it gives you such a good feeling you know.”--Kelly

Novelty was a pattern found across three cases. Two of the three mentioned always being able to find something new. The third subject spoke about seeking out novel collectible pieces.

“I still get a rush out of watching the movies. There is always something new to find--something you haven’t noticed before. Some subtle hint or something like that.”--James
“I can watch it and watch it and never be bored of *Star Wars* because I’ll always see something new. Somethin’ will always make me chuckle even though I’ve seen it 100 times. Um, I’ll just catch something. I’ll just catch something I hadn’t caught before.”--William

“Yeah, it was a huge deal to get a variation in what we called it of a different--well, it’s the same thing but it’s the Turkish variation--it’s written in Turkish. I’ve got a full collection of everything ever made that’s loose and about thirty carded figures, a bunch of ships, but what I really kept my eye out for were the unique things--like did I ever tell you about the x-rated C3PO card? I’ve got one.”--Patrick

*Family -Current, Lifestyle, Nostalgia and Philosophy* were patterns that were found between two cases each. The Family-Current pattern referred to two subjects who introduced their love of science fiction to their own children. The Lifestyle pattern was very similar to the Self Identity pattern mentioned earlier. Two subjects mentioned that their interest in science fiction is more than just a hobby, it is a lifestyle. The Nostalgia pattern referred to two subjects reflecting on how their current love of *Star Wars* takes them back to a more innocent time. It makes them remember what it was like to be a kid again. The Philosophy pattern found across two subjects related to the underlying philosophies of *Star Trek* and *Star Wars*. This pattern was referred to numerous times by Jeffrey in his interview.

I think it (*Star Trek*) is Gene Roddenberry’s ideal existence for mankind and that I would say that he would want us to watch it to know how when we encounter new species or experiences we are not prejudiced. I think *Star Trek* is an exercise of how to teach mankind to do that. However, the relative morality is something that really bothers me because technology has evolved to such a far point the consequences are negligible. It frees a person from thinking about anything but themselves.
**Pattern Found within Cases**

The only within case pattern found was control. This was reflected in Gene’s interview when he spoke about having complete control over character and story development in his writing. It was his response to the interview question, “What is it about this that keeps you interested in pursuing it further?”

I think ‘cause I can call the shots. You know we talked about *Star Wars* and you know in the first movie, Luke misses a lot of shots with his gun and it’s like why did he miss? I don’t want Luke to miss, but no matter how much I will him to hit that guy he is going to miss. You know it’s kinda set in stone there, but with writing, there are very few boundaries if you can describe things well as a writer.

**Summary**

A number of additional emergent patterns were found across several cases. Complexity-story was found across seven cases and referred to a need for a “good story” in capturing and keeping attention. Complexity-characters was found across three cases and is closely tied to complexity-story. It refers to a need for compelling, complex characters to capture and hold attention. Character identification was found across four cases and referred to subjects identifying with certain characters and seeing them as “buddies”. Patterns of self identity, costuming motivation and novelty were found across three cases each and patterns of family-current, lifestyle, nostalgia and philosophy were found across two cases each. Finally, the pattern of control was the only within case pattern found.

**Conclusion**

In conclusion, there was a great deal of information provided by each of the subjects that related to the five original research questions.
The question of “How is science fiction related knowledge integrated into the participant’s leisure activities?” revealed a pattern of detailed knowledge in eight out of ten subjects. All of the subjects’ knowledge was applied in different ways. Three of the subjects spoke about how they used their knowledge for creating costumes, six of the subjects used their knowledge to assist in their collecting, one of the subjects used his knowledge for making movies, one of the subjects used her knowledge to apply for a job as a science fiction expert and one of the subjects used his knowledge in creating characters and storylines for a fantasy novel. Two within case patterns of character development and story development were also found.

The question of “To what extent are components of flow evident in the participants’ leisure activities?” revealed across case patterns in eight subjects of the following components of flow: a balance between challenge and skill, distractions excluded from consciousness, a merging of action and awareness and time distortion. And while not stated directly, it appears that all of the subjects’ activities are autotelic in nature meaning they are engaging in activity simply for its own sake.

The question of “How did the participants’ interests in science fiction related leisure activities initially develop?” revealed across case patterns of childhood connection and family-past. All ten of the subjects reported that their interest in science fiction began in childhood or youth. Three of the subjects reported that their parents were science fiction fans as well. Many noted that what captured their attention initially was the grand scale of the movie or TV show, the new technology and the fascinating characters.
The question of “To what extent has this interest changed and/or evolved from its inception to the present and if so, how?” revealed no across case patterns and only one within case pattern of cynicism. All ten subjects responded once to the direct interview question and many of the respondents spoke of scaling back on their collections.

The question of, “To what extent does having a great deal of knowledge in the domain of science fiction influence participants’ perceptions about learning new information in other domains?” revealed that nine of the subjects used their knowledge of science fiction to assist them in learning new information in other domains. Two of the subjects also reported that their knowledge of and interest in science fiction directly influenced their choice of vocation.

In addition to the patterns found directly relating to each of the initial research questions, there were a number of new emerging themes found across cases. These included: complexity-story which was found across seven cases, complexity-characters which was found across three cases, character identification which was found across four cases, self identity which was found across three cases, costuming motivation which was found across three cases, novelty which was found across three cases, family-current which was found across two cases, lifestyle which was found across two cases, nostalgia which was found across two cases and philosophy which was found across two cases. Finally, the pattern of control was the only emerging within case pattern found.

The following chapter will discuss these results and how they related to the literature on flow, knowledge acquisition and transfer and science fiction fandom. How the current study “fills the gaps” in the body of literature reviewed will also be discussed.
Practical significance and limitations of the study along with possible avenues for future research will conclude the study.
CHAPTER FIVE

Discussion

Introduction

This final chapter is an overview of significant findings and how these findings related to current literature on flow, adult interests and cognition and science fiction fandom. Practical significance of the study will also be discussed along with limitations and recommendations for future research. The primary focus will be on how the study ultimately addressed the original problem statement presented in the first chapter which was to explore why individuals have a sustaining interest in science fiction related leisure activities, determine the role, if any, that flow plays in the continuation of these activities, explore how these interests initially developed and determine if science fiction related knowledge transfers to other domains. Once again, it is hoped that the results of this study revealed to the reader a greater understanding of the mechanisms through which interests are sustained and how such interests impact learning and personal growth and fulfillment in others areas of life such as school or work.

Overview of Significant Findings

Significant findings pertaining to the five original research questions included patterns relating to knowledge integration, patterns relating to flow, patterns relating to development, patterns of change and evolution, and patterns of transfer. Numerous additional emergent patterns were noted that could form the basis of future studies. Each of the findings will be discussed in turn.
Patterns Relating to Knowledge Integration

As was presented in the previous chapter, a pattern of detailed knowledge was found in eight of the subjects. Also, while not mentioned explicitly, detailed and extensive knowledge of science fiction was implied across all cases. The original research question asked about how science fiction related knowledge was integrated in participants’ leisure activities. In the context of this study, knowledge integration refers to how detailed knowledge is manifested in both processes such as problem solving, acquisition of collectibles and assistance in applying for a job and products such as completed costumes, collections, creative displays, movies and book chapters.

The acquisition of knowledge as a result of initial interest forms the foundation of this detailed knowledge base. This process of acquisition via interest was also supported by the literature.

Researchers Reeve and Hakel (2000) believed that interests are responsible for guiding an individual’s knowledge acquisition. These researchers also argued that the importance of domain specific knowledge in determining intelligence placed heavy emphasis on understanding cognitive, motivational and social processes that give rise to sophisticated knowledge structures.

It was found that for all eight of the subjects who discussed knowledge integration directly that the “sparking” of their initial interest in science fiction led to a great deal of knowledge acquisition. For example, Jeffrey commented directly on how interest played a role in his knowledge acquisition, “It’s really odd ‘cause I can recall a lot more details when I’m doing this type of reading even just reading it once through than if I was ever to
pick up an Ed Psych book.” When asked why he thought this was the case, he responded, “I would say probably interest.”

Once this detailed knowledge base is acquired through multiple encounters with a text, it is in turn integrated into both processes and products. For example, this detailed knowledge assisted Leonard in completing his costume accurately. His knowledge informed him of how his costume should look. It assisted George in a similar way. He drew on his extensive knowledge of Star Wars to ensure that his dioramas were accurate. For Gene, an in depth understanding of the “classic elements” found in Star Wars assisted him in creating his own fantasy world. The knowledge was evidenced as well in finished products such as costumes, movies, book chapters and collections.

Science fiction knowledge integration was also noted in the literature on science fiction fandom. Jenkins (1992a) referred to it as “textual poaching”. A reader’s activity is no longer seen simply as the task of understanding the author’s original meaning or intent, but to rework borrowed materials to fit them into the context of lived experience. This process begins with an individual learning everything there is to know about a certain text through multiple viewings and then in turn using this information to create new products.

**Patterns Relating to Flow**

Flow, as was stated in earlier chapters, is the process of achieving satisfaction and enjoyment through the appropriate matching of skill and challenge resulting in an increase in cognitive complexity. According to Csikszentmihalyi (1990), flow contains nine components that when combined, result in a deep sense of enjoyment. These nine components are: an activity that has clear goals each step of the way, immediate
feedback to one’s actions, a balance between challenge and skill, a merging of action and awareness, distractions are excluded from consciousness, there is no worry of failure, self-consciousness disappears, the sense of time becomes distorted and the activity become autotelic. The following components of flow were found in eight of the cases: a balance of challenge and skill, distractions being excluded from consciousness, a merging of action and awareness and time distortion. Each of these will be discussed in turn for the remainder of this section.

A Balance of Challenge and Skill

While rare, Kubey and Csikszentmihalyi (1990) found that individuals can enter a flow state while watching TV. These researchers postulated that individuals who possess greater cognitive complexity are more likely to seek out television programs that contain more complex and challenging information. Even watching the same show, a person more skilled in interpreting information can generally extract more complexity and order. Informativeness is meaningful to the viewer who is actively seeking to understand the content at a level of processing beyond superficial enjoyment.

This challenge was reflected in Patrick’s interview. Patrick referred to watching his favorite TV show, Battlestar Galactica as “work that was fun.” He felt the creators of the show made him work to keep up with the complex plot and story line. He commented that “you really gotta keep up with it--I like the challenge of it.”

Csikszentmihalyi (1990) stated that the balance of challenge and skill results in a deep sense of enjoyment and satisfaction which then in turn motivates the individual to pursue the activity further. A balance between challenge and skill that generated enjoyment was also found in Walter’s movie making, Gene’s writing, James’ collecting
and Leonard’s costuming. This can be seen in Gene’s reflections on his writing. “When it’s going well, I mean it’s exciting. It’s like anything that you love that’s going well. I mean it brings you back more often to the keyboard or the artist’s easel.”

*Distractions Excluded from Consciousness*

According to Csikszentmihalyi (1990), one major feature of flow is that enjoyable activities require a complete focusing of attention on the task at hand. The clearly structured demands of the activity impose order and exclude disorder in consciousness. Troubling thoughts are kept temporarily at bay. The component of distractions being excluded from consciousness was found in four of the subjects. Jeffrey liked the escapism of reading a good science fiction book. Nichelle said that her love of *Star Wars* “takes her away” from reality and Walter commented that it was nice to get “sucked up” into a little world for about two and a half hours and live somewhere else for a while.

*Merging of Action and Awareness*

Csikszentmihalyi (1990) stated that when all of an individual’s relevant skills are needed to cope with the challenges of a situation their attention is completely absorbed by the activity. A merging of action and awareness was found in two subjects. This can best be seen in Leonard’s reflections on coming home at night and heading out to his garage to work on his Darth Vader costume. “It was nice to get out there and just kinda concentrate on the task at hand and kinda get away.” He further commented that working on *Star Wars* stuff was relaxing to him. Csikszentmihalyi (1990), stated that positive sensations arise from the experience of complete involvement in a task that results from concentration and skilled performance. The task becomes enjoyable in and of itself.
**Time Distortion**

Csikszentmihalyi (1990) referred to this component of flow as time appearing to pass differently. Often hours seem to pass by in minutes. The sense of time bears little relation to the passage of time as measured by the clock.

Finally, a pattern of time distortion was found in two cases. Gene commented that when his writing is “flowing” he may spend six or seven hours a day on this activity. Jeffrey lost track of time when he became immersed in a good science fiction book. He referred to being “in the zone” when he is reading and that hours will pass quickly.

**Patterns Relating to Development**

The initial research question relating to this topic asked; how did the participants’ interests initially develop? Interest in the current study refers to the stimulation of curiosity about something. It was found that the initial catalyst for this curiosity about and subsequent acquisition of science fiction related knowledge and artifacts was exposure to certain science fiction media. All of the subjects reported that their initial interest in science fiction began in childhood or youth. Subjects also reported that their first encounter with a specific movie or TV show aroused feelings of excitement and/or amazement. What they witnessed was reported as being new, exciting and engaging and as a result fostered a desire in them to learn more. James, when reflecting on the first time he saw *Star Wars* as a child commented that “it just made an impression on me--just the grand scale of things.” Jeffrey reported similar feelings about watching *Star Trek* as a child. “I’d be like whoa! Just the action and technology--just being able to transport from one place to another in the blink of an eye.” Kelly too spoke about the initial impression *Star Wars* left on him as a child. “I was so amazed with the flying ships and
the sounds and these guys jumpin’ around with laser swords. It was like, man that was so neat.”

It is important to note that these childhood interests in science fiction have been sustained for 19+ years in all of the subjects. The “sparking” of curiosity in a topic that is engaging enough to motivate knowledge acquisition and integration well into adulthood can be of great benefit. This idea is further supported by the following findings in the literature.

A study by Hong, Whiston and Milgram (1993) highlighted the importance of studying personal interests in children and youth. According to Hong et al., the results of their study revealed that adolescent leisure activities were valid predictors of adult occupational choice.

In a longitudinal study on creative out of school activities as predictors of life accomplishment in young adults, Milgram (1999) found a strong relation between the focus of participants’ adolescent out-of-school activities and their vocation in adulthood. Moreover, participants whose adolescent out-of-school activities matched their adult occupation had a higher level of work accomplishment than those for whom such a match was absent.

Finally, researchers found that children have powerful interest in domains in which they have high ability. They can focus so intently on work in these domains that they lose sense of the outside world (Winner, 2000). This also characterizes children who have traditionally been classified as talented and have excelled in a specific domain such as art, music or athletics (Winner, 2000).
Patterns of Change and Evolution

The initial research question addressing change and evolution asked participants to reflect on how their interest changed and/or evolved from its inception to the present. Change and evolution in the current study referred to the exploration of how the interest did or did not continue to develop and expand from its inception to the present day. Eight of the subjects commented on how their collecting has changed or evolved only in direct response to the initial interview question. The primary response given by the subjects was that they had scaled back on their collecting. Some of the reasons given were that they ran out of room or money. One subject commented on how the characters in the story he is writing continue to change and evolve and one subject commented on how he has become less cynical over the years. While not stated explicitly, all of the subjects have continued to accumulate knowledge and artifacts related to their interest over the years and in the case of the fan club members, build relationships with fellow fans. None of them mentioned that their interest has “waned” in any way.

Walter provided the only within case pattern relating to change and evolution. He commented numerous times about how he had become less cynical over the years. His comments on how fellow fan filmmakers spend a great deal of money on equipment for the sole purpose of garnering the attention of Hollywood filmmakers could be construed as that these individuals were “selling out” and not staying true to the fan community. He called them “posers”. Walter further commented, “they’re (the fan filmmakers) just lookin’ for attention. There was this one guy who got a job at Lucasarts which deleted him from the list in my book.”
As mentioned in Jenkins (1992a), monetary gain is not the main motivator behind fan created products. Fans create their products for other fans for the sole purpose of sharing something that is of mutual interest. This brings up an interesting point. Perhaps there is only so much room for change and evolution within the fan community. Once a fan “goes commercial” and turns his or her leisure activity into gainful employment, they may run the risk of breaching an unspoken boundary of true fandom. This notion appears to have some support in the local fan community. While all of the subjects knew and respected the local science fiction collectibles store owner, they did not appear to acknowledge him as a fellow fan. The store owner as well did not refer to himself as a science fiction fan. He referred to his customers as fans, however, and expressed a great deal of curiosity about fan behavior in numerous casual conversations with the author of this study.

One interesting related finding on collecting is supported by Tankel and Murphy (1998). These researchers stated that motivations behind collecting do not derive from qualities uniquely inherent in the artifact, but rather from the value received from the collector’s interactions with the artifacts. While there was not strong enough evidence in the current study to warrant calling it a pattern, two of the collectors, William and George commented on how as their interest changed and evolved, they became more interested in the “story” behind the collectible than the collectible itself. William explained that he didn’t buy a collectible now unless it had an interesting story behind it. He mentioned purchasing a *Star Wars* figure from an especially honest dealer as being one example of this. George also told the “back story” behind how he purchased his life-sized Han Solo from an individual in another state who had to sell some of his *Star Wars* memorabilia to
pay for divorce court fees. George commented, “not only do I have the money to get it, but this is a back story that I like so that’s why we chose this particular Han in carbonite.”

*Patterns of Transfer*

Mayer and Wittrock (1996) noted that transfer occurs whenever prior knowledge and skills affect the way in which new knowledge and skills are learned and performed. One way that an individual is affected by new knowledge is by gaining confidence. Johnson et al. (2004) also stated that having more knowledge in a domain may make an individual more confident about learning new information. This idea that an individual is more confident about learning new information speaks more to the affective than the cognitive domain and was the primary focus of the original research question. The subjects expressed a variety of ways in which this confidence to learn new things was manifested. A pattern of transfer was noted within and across nine cases.

Numerous subjects commented on how their science fiction related knowledge assisted them in feeling more confident about learning new things. Patrick, when referring to how his science fiction related knowledge helped him in science class at school said, “there was a confidence that came from it. It prepared me to consider things or look into things that a lot of people just may jump to conclusions on.”

Leonard, like Patrick expressed increased confidence as a result of his *Star Wars* related knowledge. When talking about his costuming, he commented that the skills he learned gave him confidence to do things he never had before. “Before I started costuming I may not have picked up a power tool and just gone to work on somethin’ but after doing some costuming, I wouldn’t be hesitant to do something like remodel a house.”
Jeffrey, James and Nichelle all reflected on how their knowledge of *Star Wars* assisted them in their school work. Jeffrey reflected that his knowledge of *Star Trek* assisted in increasing his abstract thinking skills because the concepts presented were “kinda far out and somethin’ you gotta struggle to understand.” James spoke about how his interest in *Star Wars* led to an interest in philosophy. He also stated that the knowledge he gained from *Star Wars* helped him understand philosophy better. Finally, Nichelle was able to transfer her knowledge of *Star Wars* into a music appreciation paper by drawing a connection between John William’s *Star Wars* score and the Wagner ring operas.

In support of the study presented by Hong, Whiston and Milgram (1993), one of the subjects commented that their childhood interest in science fiction directly influenced their vocational choices later in life. George commented that there was a “direct link” between his love of the science fiction television show “V” and his later decision to go into video production work.

Aside from expressing confidence in learning new things in other domains, two of the subjects commented that their knowledge of *Star Wars* helped them become better people. Csikszentmihalyi (1982; 1990), commented that the main purpose behind studying flow in individuals is to see what makes everyday life more meaningful for them and that the goal of learning should be to understand one’s life experiences and develop a personally meaningful sense of what those experiences are all about. It appeared that these two subjects have used their leisure activities to enhance not only what they do, but who they are.
Additional Emergent Patterns

The current study revealed numerous additional emergent patterns. These additional patterns were ones that emerged within and across cases and that do not directly relate to any of the five original research questions. The additional patterns found were: complexity-story, complexity-characters, novelty, character identification, self identity, lifestyle, philosophy, costuming motivation, family-current, nostalgia, and control. After the data was analyzed, it was found that these patterns could be placed into three overarching categories: complexity, identity and motivation.

Complexity

Csikszentmihalyi (1990), commented that in a flow state there must be a perfect blend of challenge and skill. His example of Alex, the novice tennis player learning how to hit the ball over the net, posited that if Alex simply continued to hit the ball and not take on more challenging tasks, he would soon become bored.

Complexity and novelty seemed play an integral role in the development and perpetuation of interest in a number of subjects. As was mentioned in the previous chapter, the characters and story had to be complex enough to capture and keep subjects interested for an extended amount of time. Patrick, when referring to a science fiction television show that did not capture his attention stated, “I like the characters but there was never enough to sink your teeth into. It just didn’t have enough to really pique my interest.”

Closely related to complexity was the pattern of novelty. According to three of the subjects, the story of Star Wars is complex enough to reveal novel information on an ongoing basis. James comments, “I still get a rush out of watching the movies. There is
always something new to find—something you haven’t noticed before. Some subtle hint or something like that.”

Identity

Patterns of character identification, self identity, lifestyle and philosophy all speak to subjects’ interest in science fiction as being more than just a casual hobby. MacDonald, (1998) commented that science fiction fans may adopt ideas, beliefs and values valorized in the original text. Kozinets (2001) also posited that a focal point of interest such as personal identification with a certain character is attractive to people who have been stigmatized by those who are less intelligent and less inclined to fantasy. The determination of whether or not the subjects in the current study felt stigmatized by others was beyond the scope of inquiry. However, subjects did comment on how their interest played an integral role in influencing who they are as individuals as evidenced in the following quotations:

“It’s a part of me. I’m the go to Star Wars guy. Go to William, he knows about Star Wars.”—William

“It enhances my social status because people come up to me all the time at work and say, “Hey, what’s goin’ on with this part of the movie?” I tell them I’m not shy and I’ll tell them I enjoy Star Wars very, very much.”—Kelly

“It’s still a part of me. I love to see your expression when you walked in. You know that’s what I like and that may be an ego thing, but I really enjoy that.”—George

“I mean it’s a kind of lifestyle for me.”—Jeffrey

Jeffrey also reflected that the underlying philosophy behind Star Trek is creator Gene Roddenberry’s ideal existence for mankind and that he would want others to watch
it to know how to encounter new people and new situations without prejudice. Kozinets (2001) stated that Star Trek’s utopian philosophy provides a sense of empowerment for those in stigmatized social categories. Fandom is a place where many of those who do not easily fit into the mainstream social roles could find a form of sanctuary and acceptance. While Jeffrey didn’t mention being stigmatized, he mentioned several times throughout his interview that he was interested in the philosophy behind Star Trek. He explained how he personally agreed and/or disagreed with a number of the precepts set forth by the creator of the show.

Motivation

Patterns of costuming motivation, family-current, nostalgia and control reflected how subjects were motivated by one of the following factors: the sharing of their interest with others, the feeling of being transported to a simpler time, or by having complete control over their activity.

Jenkins (1992a) commented that fandom functions as an alternative social community. As mentioned in the previous chapter, half of the subjects belong to a fan club where they can share their interest with fellow fans. In the current study this interest breached the boundary of the community of other fans to subjects’ family members and the community in general. George, Leonard and Kelly all reflected on the notion that the main motivator behind costuming is the reactions of others in the community at large. Leonard comments, “I can’t tell you how many kids want to come up and look at me and some of them take pictures. I do it for the kids. It’s just fun.”
Two of the subjects are also passing their love of science fiction down to their own children as well. Leonard’s three year old son already knows how to use a light saber and George’s son is a collector.

Nostalgia was found in two subjects who commented on the connection their interest had to childhood. It “took them back” to simpler and more innocent times. Patrick reflected that, “I get a kick out of the nostalgia of remembering the way it used to be. You know, when I’d dress up on Halloween as Obi Wan Kenobi.” William also stated that, “It takes me back to a more innocent, pure time in my life when I was just a kid--pressures of life were not there.”

Finally, control was a within case pattern found in Gene. He said that one of the main things that kept him pursuing his interest further was that he could “call the shots” in his writing. He has complete control of what goes on in his story. This is also supported in the literature by Csikszentmihalyi (1990) who noted that personal perceptions about life are shaped by many variables outside a person’s control. Yet there are certain times when, instead of being buffeted by anonymous forces, individuals feel in complete control of their actions. On those occasions a sense of exhilaration and deep sense of enjoyment result.

Practical Significance

As mentioned earlier in the current chapter, Reeve and Hakel (2000) argued that the importance of domain specific knowledge in determining intelligence places heavy emphasis on understanding cognitive, motivational and social processes. The author of the current study noted all of the patterns found that contributed to the development and continuation of participants’ science fiction related leisure activities fit into one of three
overarching categories as well. All of the patterns could be categorized as either
cognitive motivational or psycho-social in nature. It was also noted that these categories
were not independent of one another. They influenced one another and in turn the
combination of all three influenced the development of and sustaining interest in the
science fiction related leisure activities (Figure 2).

This model speaks to the practical significance of the study in how educators
address the learning needs of children and adults. This exploratory study revealed that
cognitive factors such as complexity, motivational factors such as flow and psycho-social
factors such as self identity play roles in capturing and sustaining an interest which in
turn motivates individuals to acquire more knowledge about a certain domain and then
apply the knowledge and skills learned to new situations.

According to Winner, (2000) children would be better educated if teachers sought
to find out what motivates and excites individual students and then harness this drive
towards learning other subjects.

In addition, examining an individual’s motivation for developing and sustaining a
certain interest may help others better understand the role that interest plays in adult
learning and cognition. Recent studies have shown correlations between interests and
cognition (Ackerman & Heggestad, 1997; Ceci & Liker, 1986; Johnson & Eilers, 1998;
Reeve & Hakel, 2000). These studies highlighted that individuals have a greater depth of
knowledge about domains they are interested in. The studies also noted that spending a
great deal of time on a certain activity led to greater cognitive complexity.

According to Silva (2001), personal interests involving skills and competencies
have no ceiling on the amount of possible mastery. Silva went on to posit that interests
are sustained because each new step introduces novelty, conflict with existing knowledge and uncertainty concerning the task and one’s ability. Interests cultivate knowledge and diversify experience at all stages of life.

**Figure 2**

Overarching Contributing Categories with Related Patterns

In addition to the literature on cognition, flow and interests, science fiction researcher Bacon-Smith (2000) highlighted the impact of psycho-social factors such as
family on knowledge acquisition and interest development in science fiction fans.

According to Bacon-Smith, when children have been raised in a science fiction fan community, they are afforded an opportunity, especially through convention attendance, to fulfill many of the necessary steps to a more flexible understanding based approach to knowledge. The community provides children opportunities to learn by exploring an interest in the company of adults who practice skills valued by their culture. Fandom provides learning through many entry points such as narrational, through the literature itself and personal narratives of the members, foundational in the arguments about categories, definitions and criteria for inclusion at every level of activity and aesthetic, through costuming, writing and creating artwork. The science fiction fan community and science fiction conventions in particular provide very powerful teaching and learning opportunities for both adults and children. These findings speak to practical significance in the fact that educators should consider the impact of psycho-social influences on the learning process. Learning that takes place outside of the classroom could play a key role in enhancing knowledge acquisition and understanding in formal classroom settings if educators would take steps towards integrating the two.

Thus, in light of findings in the literature and those of the current study, educators would do well to focus on what interests students and in turn use those interests to assist in the learning process. Designing curriculum that provides appropriate challenge and complexity based on individual student needs is also worth considering in regards to motivating learners to acquire new knowledge and in turn apply that knowledge in other settings.
Limitations of the Study

The primary limitations of the current study relating to reliability, internal validity and external validity will be discussed in turn for the remainder of this section.

Reliability

Reliability in qualitative research refers to whether or not the results obtained from the data are dependable and consistent. Unlike reliability in quantitative research where other researchers are expected to get similar results if they chose to do a similar study, qualitative researchers hope that outsiders concur that, given the data collected, the results make sense (Merriam, 1998). In the current study, the following techniques were used to insure the dependability and credibility of the results.

Explanation of the investigator’s position. In earlier chapters, the author of the study explained the theoretical framework behind the study. In addition, the author created clear, concise research questions that were congruent with the study design. Basic paradigms and analytic constructs were clearly specified in the literature review thus enabling the findings to be connected to current theory. The author also explained her position within the group being studied (becoming a member of the fan club, participating in online forums and attending fan club meetings and events) and stated personal bias in advance of collecting the data. The basis for selecting informants was also clearly explained in earlier chapters (clearly stated criteria for participation, snowball sampling method). Finally, data was collected on the context surrounding participants’ activities (fan club event and meeting notes and excerpts from the online message board) and was in turn clearly explained in chapter four.
Triangulation. Multiple methods of data collection were used for triangulating results. Aside from audio-taped interviews, photographs were taken of artifacts at the sites and catalogued, field notes were taken and concept maps were created at each site. The field notes and concept maps were made available for viewing by the participants throughout the interview process. Finally, transcripts were returned to all subjects for verification of what was said in each of the interviews, notes were taken at fan club meetings and events and messages were downloaded from the fan club message board.

Leaving an Audit Trail. The author of the study described in detail how the data were collected, how categories and patterns were created and how decisions were made throughout the study. In addition, all of the data were retained and will be kept available for reanalysis by others.

Limitations of Reliability in the Current Study. Even though the author stated known bias in advance, it is unrealistic to believe that the current study was completely free of researcher bias. Even the most responsible researcher has personal “blind spots” when it comes to knowing and understanding personal presuppositions. Triangulation offset this bias to a point, but could not eradicate it completely. Also, due to time constraints, the author was unable to arrange multiple collaborations with the subjects to assure greater reliability through multiple member checks. Finally, the author was only able to interview each of the subjects once. Several interviews across several months or perhaps years would have strengthened the reliability of the current study. Additional field observations would have added support to the dependability and credibility of the findings as well.
Internal Validity

*Internal validity* in qualitative research refers to whether the findings seem credible, plausible or believable (Miles & Huberman, 1994). Merriam (1998), further elaborated by asking, how congruent are the findings with reality? Do the findings capture what is really there? Are investigators measuring what they think they are measuring? The following techniques were used to address issues of internal validity in the current study.

**Triangulation.** As stated in the previous section on reliability, the author of the current study incorporated multiple methods of data collection in order to triangulate findings.

**Member Checks.** As was also noted in the previous section, transcripts were taken back to participants to ensure the accuracy of what was transcribed. Field notes and concept maps were also made available to the participants throughout the interviews to ensure the accuracy of what was being written.

**Long Term Observation.** As was noted in a previous chapter, the author of the current study joined a local science fiction club in June of 2005. Data collection did not occur until six months later--November 2005. This extended amount of time enabled the author to engage in long term observation of and interaction with the participants before the data was collected. Through these observations and interactions, the author was able to gain a greater understanding of the “reality” of the local science fiction culture. Thus, once data was collected, she was able to better discern whether or not the findings correlated with the reality of this particular culture.
Report of Researcher Bias. As was stated previously in the section on reliability, the author stated all known bias in advance of the study.

Connection to Current Theory. The author of the study presented data that was well linked to categories found in an overarching theoretical framework--namely flow. This was accomplished by first completing an extensive literature review and creating well defined research questions that related back to the theory of flow and additional literature on adult interests and cognition and science fiction fandom.

Limitations of Internal Validity in the Current Study. Multiple member checks and interviews across time would have strengthened the internal validity of the current study. In addition, piloting and then adjusting or omitting certain interview questions would have assisted in strengthening the credibility of what was being reported. For example, the author found that interview question number one, “Imagine you are applying for a job as a science fiction (may also be replaced with Star Wars, Star Trek, etc.) expert. Share your expertise with me” was too broad. Many of the subjects initial response to the question was, “Wow, where do I begin?” Had this question been “tried out” in advance of the study, the author would have realized that the question was too broad and could have adjusted it or omitted it altogether.

Interview question number six, “How has this interest changed and/or evolved from the beginning to the present? Explain” was another question that didn’t contribute much to the study. Once again, if the interview questions were piloted in advance, the author would have been able make refinements and adjustments prior to data collection.
Finally, the idea of long term observation is a relative one. Yes, spending six months with participants in advance of the study was better than spending two or three months or less, but was it enough time to get an accurate picture of the reality of this culture? The author believes that the more time spent the better and that while six months was able to provide some pertinent information on the local science fiction culture and the interactions found therein, more time spent in the culture would have strengthened the internal validity of the current study.

*External Validity*

External validity speaks to generalizability and is always limited in qualitative research. Merriam (1998) explained that one way to improve external validity is to use many cases to study the same phenomenon. In a multi-case or cross-case analysis, the use of predetermined questions and specific procedures of coding and analysis enhances the generalizability of findings in the traditional sense. Miles and Huberman (1994), also stated that generalizability can be enhanced through rich thick description of the subjects, settings and processes so that readers can assess potential transferability to other settings. Both of these strategies, employing a multiple-case design and providing rich thick description of the subjects, settings and processes for collecting and analyzing data, were used in the current study to enhance external validity.

*Limitations of External Validity in the Current Study.* The current study contained a sample size of ten. Because of the small sample size, the findings of the current study cannot be readily generalized to other populations. The sample was further limited by the initial criteria used to bind the cases. For example, older or younger
subjects than those chosen for the current study may have different perspectives on flow, knowledge acquisition, transfer and fandom. In addition, the majority of the subjects were "Star Wars" fans. Other fans of other science fiction TV shows, movies, etc. were not well represented in this sample.

Finally, the context was a limitation as well. All of the subjects were from Waco, Texas, and surrounding areas. This larger culture in which the fans are situated undoubtedly influences their interactions and activities. Science fiction fans from this small city and surrounding rural area may manifest their interest in science fiction much differently than other fans from larger metropolitan areas who may have easier access to a larger and more diverse fan base, large science fiction conventions, and a wider variety of stores from which to purchase collectibles and other science fiction related items.

**Gaps in the Literature and Recommendations for Future Research**

As was mentioned in previous chapters, the main gap in the literature reviewed is that flow has never been studied in science fiction fans, thus one of the primary reasons for conducting the current study. Knowledge acquisition, transfer and the development of interests also have not been studied in science fiction fans.

Some recommendations for future research would be to study other groups of science fiction fans--perhaps fans of different ages or fans in different cultural contexts. To obtain a more accurate picture of fandom and the role it plays in the lives of individuals, longitudinal studies would also reveal a great deal more information on topics such as flow, knowledge acquisition, personal interests and transfer.

Studying the family-past, family-current and childhood connections of science fiction fans would be another possible avenue for future research. A number of the
subjects in the current study mentioned that their parents played an integral role in the development of their childhood interest in science fiction and now some of the subjects are passing along that interest to their own children.

Studying the role that personal interests play in the development of self identity would be another avenue for future research.

Finally future studies on the relationship between flow, personal interests and knowledge acquisition and transfer in classroom settings would lend themselves well to the growing body of research on these topics.

**Conclusion**

Initially, the author set out to explore why individuals have a sustaining interest in science fiction related leisure activities, determine the role, if any, that flow plays in the continuation of these activities, explore how these interests initially developed and determine if science fiction related knowledge transfers to other domains.

The current study provided new information on flow, personal interests, knowledge acquisition and transfer that was supported by the literature. Additional findings that could provide the foundation for future studies were also presented and discussed.

The major contribution of this exploratory study was the revelation of a greater understanding to the reader of the mechanisms through which interests are sustained and how such interests impact learning and personal growth and fulfillment in other areas of life such as school or work.
APPENDIX A

Baylor University
Certification of Informed Consent

Principal Investigator: Cindy Little, M.A.T., Department of Educational Psychology

This form asks for your consent to participate in psychological research. For this research you will be interviewed about your current science fiction related leisure activities. These interviews will be audio tape recorded as well. The researcher may also photograph some of your science fiction artifacts (collections, books, trading cards, etc). This will only be done with your permission. Notes will also be taken during these interviews. You will be allowed to look at these notes at any time. This entire process should take approximately two hours.

There will be no physical risk at any time. You may elect, either now or at any time during the study to withdraw your participation with no penalty or loss of benefits. You should understand that your participation is completely voluntary. You have been chosen for the current study because you have been identified as an adult science fiction fan between the ages of 20 and 40.

Pseudonyms will be used to identify each subject so as to guarantee complete anonymity.

Once the study has been concluded the data will be analyzed and be available for your review should you wish to see the outcome. Audio tapes, transcripts, photos and notes will be kept in a locked file cabinet and made available only to the Principle Investigator and her dissertation committee which consists of 5 graduate faculty members. The data collected will allow researchers to understand how motivation through the theory of flow and the acquisition of domain relevant knowledge (in this case the domain of science fiction) influence adult cognition.

This study meets the American Psychological Association’s standards for “Minimal Risk,” and poses no major risks or dangers for you as a participant.

Please direct all inquiries to Cindy Little, Department of Educational Psychology, One Bear Place, #97304, Waco, Texas 76798-97304. She can also be reached at 254-710-4622 or at cynthia_little@baylor.edu. Her Dissertation Chair, Dr. Susan Johnsen can be reached at 254-710-6116.

If you have any questions regarding your rights as a participant, or any other aspect of the research as it relates to you as a participant, please contact the Baylor University Committee for Protection of Human Subjects in Research, Dr. Matthew S. Stanford Chair, Department of Psychology and Neuroscience, Baylor University, One Bear Place, #97334, Waco, Texas 76798-97334. Dr. Stanford may also be reached at 254-710-2236.

I have read and understood this form, am aware of my rights as a participant, and have agreed to participate in this research.

____________________________     ________________
Name        Date
APPENDIX B

Interview Questions

1. Imagine you are applying for a job as a science fiction (may also be replaced with Star Wars, Star Trek, etc.) expert. Share your expertise with me.

2. Describe how you feel when your favorite activity is going well.

3. Tell me about your __________ (collection, costumes, etc.--whatever the artifacts are related to the leisure activity). How much time do you spend each week on this activity?

4. Explain to me how you first became involved in science fiction (may also be replaced with Star Wars, Star Trek, etc.) and when you began __________ (collecting, costuming, etc.--whatever the leisure activity is).

5. How has this interest changed and/or evolved from the beginning to the present? Explain.

6. What are the main reasons you enjoy __________ (collecting, costuming, etc.--whatever the leisure activity is)

7. How does this activity challenge you mentally? Physically?

8. What it is about this activity that keeps you interested in pursuing it further?

9. Explain to me how this activity has or has not contributed to your personal growth in other areas of your life such as school or work.

10. Have the knowledge and skills you’ve learned in this activity made you more confident in learning new things in other areas of your life such as work or school? Explain.
APPENDIX C

Glossary of Terms

*Flow:* The process of achieving satisfaction and enjoyment through the appropriate matching of skill and challenge resulting in an increase in cognitive complexity.

*Leisure Activities:* Activities that are freely chosen and pursued for their own sake. Freedom and intrinsic motivation are their hallmarks.

*Text:* Any medium that conveys a story and is professionally created and published or aired. The texts focused on in the current study were science fiction books, television shows and movies.

*Textual Poaching:* The modification of a text and subsequent invention of something different from what the original author intended.

*Science Fiction:* A literary or cinematic genre in which fantasy, typically based on speculative scientific discoveries or developments, environmental changes, space travel, or life on other planets, forms part of the plot or background.

*Fan as Aficionado:* An individual who demonstrates great knowledge of and shows appreciation for a fervently pursued interest or activity by attending to texts, icons or stars in greater than usual detail.
APPENDIX D

Jenkins (1992a) Levels of Fandom

Fandom involves a particular mode of reception. Fan viewers watch television shows and movies with close, undivided attention. The media texts are viewed multiple times to scrutinize meaningful details and to bring more and more of the original narrative under their control. The goal is to create new meanings from current texts. For the fan, watching the series is the beginning, not the end of media consumption.

Fandom involves a particular set of critical and interpretive practices. Fan criticism of texts involves a need for internal consistency across program episodes, movie sequels or book series. Fan critics work to resolve gaps and explore undeveloped potentials. This mode of interpretation goes far beyond the explicit information presented initially by resulting in a meta-text that is larger, richer, more complex and interesting than the original text.

Fandom constitutes a base for consumer activism. Fans of television shows in particular speak back to the networks and producers by organizing and lobbying on behalf of endangered series. Fandom provides a base from which individuals may speak about their cultural preferences and assert their desires for alternative developments in future programming.

Fandom possesses particular forms of cultural production, aesthetic traditions and practices. Fan artists, writers, costumers, video makers and musicians create works that speak to the special interests of the fan community. Fans create products for other fans for the sole purpose of sharing something that is of mutual interest. Monetary gain is not the main motivator behind the creation of these products. Fandom also recognizes no clear cut line between artists and consumers. Fans are all potential writers or artisans whose talents need to be discovered, nurtured and promoted.

Fandom functions as an alternative social community. Fans recognize that fandom offers not so much an escape from day to day life as an alternative reality whose values may be more humane and democratic than those held by mundane (non-fan) society. Fans, like everyone else inhabit a less than perfect world where marriages end, social relations are often superficial and material values dominate over emotional and social needs. Fans are often individuals whose intellectual skills are not challenged by their professional lives. They react against these unsatisfying situations by establishing a “weekend only” world that is more open to creativity and more concerned with human welfare than with economic advance.
APPENDIX E

Field Note, Concept Map and Photograph Forms

Name of Participant_______________________________

Site_________________________________________

Today’s Date_______________________________

Site Sketch:

<table>
<thead>
<tr>
<th>Descriptive Notes</th>
<th>Reflective Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General:</td>
<td></td>
</tr>
<tr>
<td>Facial Expressions:</td>
<td></td>
</tr>
<tr>
<td>Descriptive Notes</td>
<td>Reflective Notes</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Body Language:</strong></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Salient Points</strong></td>
<td><strong>Possible Emergent Themes</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional interesting or illuminating information:
Science Fiction Concept Map
Photograph Summary Form

Name of Participant:_________________________________________

Site:________________________________

Date Photos Were Taken:________________________________

General Description of Photos:

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 5:

Activity or event with which photos are associated:

Additional salient information about photos:
APPENDIX F

Subject Summary Form

Name: Walter
Primary activity/activities: Movie making, reading, collecting comics, watching movies
Other hobbies: None
Time spent each week on primary activity: Approximately 6 hours
Date Coded: 1/05/2006

How science fiction related knowledge is integrated in the participant’s leisure activities

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,11,12</td>
<td>1, 3, 26, 28-34</td>
<td>Movie Making</td>
<td>Technology (CM)</td>
</tr>
<tr>
<td>32</td>
<td>99-103</td>
<td>Special effect creation</td>
<td></td>
</tr>
<tr>
<td>8, 9, 11</td>
<td>1,6, 18-21, 24</td>
<td>Six degrees of separation</td>
<td>Detailed Knowledge (CM)</td>
</tr>
<tr>
<td>20, 25</td>
<td>65, 87</td>
<td>Extended Universe</td>
<td></td>
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</tbody>
</table>

Extent that components of flow are evident in participant's leisure activities

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>11</td>
<td>Just get sucked up into a little world</td>
<td>Distractions Excluded (FN)</td>
</tr>
<tr>
<td>6</td>
<td>13</td>
<td>Twelve hour little escapes</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>104</td>
<td>It’s a good challenge</td>
<td>Challenge/Skill Match</td>
</tr>
</tbody>
</table>

How participant’s interest in science fiction related leisure activity initially develop

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>49</td>
<td>I was three years old</td>
<td>Childhood Connection</td>
</tr>
<tr>
<td>17, 18</td>
<td>50-51, 55</td>
<td>I think my mom’s more into Star Trek</td>
<td>Family-Past (FN)</td>
</tr>
<tr>
<td>19</td>
<td>63</td>
<td>My mom got me the Star Wars Encyclopedia</td>
<td></td>
</tr>
</tbody>
</table>

How interest has changed/evolved from inception to present and how

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>23, 24</td>
<td>76-77, 79</td>
<td>Less cynical now</td>
<td>Cynicism</td>
</tr>
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<td>27</td>
<td>93, 95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extent that having a great deal of knowledge in domain of science fiction make participants more confident in learning new information in other domains

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>33, 38</td>
<td>105-107, 121</td>
<td>It took me a long time to figure it out</td>
<td>Problem Solving (FN)</td>
</tr>
</tbody>
</table>

Additional Important Findings

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Salient Points</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 18</td>
<td>10, 57</td>
<td>It makes me feel pretty good</td>
<td>Multiple Viewing</td>
</tr>
<tr>
<td>34</td>
<td>108</td>
<td>You get sucked into the adventure</td>
<td>Complexity-story</td>
</tr>
<tr>
<td>30</td>
<td>98</td>
<td>The mythology of it all</td>
<td>Character Identification (FN)</td>
</tr>
<tr>
<td>24</td>
<td>80, 82</td>
<td>Identified with Luke Skywalker</td>
<td></td>
</tr>
<tr>
<td>34, 35</td>
<td>109, 110-111</td>
<td>Yeah, they are your buddies</td>
<td></td>
</tr>
<tr>
<td>36, 37</td>
<td>116, 118</td>
<td>Trip to the comic book store</td>
<td>Social Component</td>
</tr>
</tbody>
</table>

Additional relevant information-The three R’s of the sci-fi genre is robots, ray guns and rocket ships. Also debated skipping graduation to go see Star Wars, p. 21, s. 71. * Pattern found in field notes (FN) and concept map (CM) as well.
REFERENCES


