What Games Have to Offer: Information Behavior and Meaning-Making in Virtual Play Spaces

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Abstract

This article examines the information seeking behavior and meaning-making in virtual play spaces by employing the example of one such space. The researcher examines the means by which game players get the information needed to succeed in a game through the lens of everyday life information seeking, and how they make meanings in the play space through the lens of the dramaturgical approach. While this research emphasized a particular online game environment, the information seeking and meaning-making applies to many other virtual play spaces, both multiplayer and single player. If information seeking and meaning-making are taking place in virtual play spaces in the ways they appear to be, gaming in the library could be an important way to promote effective information seeking. The possibility of a new way of seeking information and meaning-making suggests several lines of investigation regarding the provision of information in other arenas that remain to be explored.

Introduction

Despite the recent trend toward using video games in the library, particularly to draw in young adults, there is still some resistance on the part of some libraries and librarians to include video gaming as one of the programs or services of the library.

There seems to be a belief that perhaps video games are too trivial a pursuit to bring into the library. Educators and academics share this belief to some extent in their resistance to the use of video games in the educational setting and to the serious study of games and gaming. While this attitude appears to be changing over time, it is certainly still of some concern when considering the reasons for including or excluding gaming from the library.

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The lack of familiarity with the broad spectrum of video games may also present a problem. For example, there is a sense among some that games are all about quick reaction or "twitch" and require little or no thought. Also, because of the heightened publicity surrounding violent games, video games in general are sometimes seen as "destructive activities that corrupt moral capacity" (Halverson, 2005). Squires observed as long ago as 1999, that, "the strong content and addictive nature [of some games] have led non-players to overlook the learning principles incorporated into the game design. Thus games have come to typify the essentially subversive side of computing. . . ." While Squires was referring to educational computing, the same could certainly be said of computing in libraries.

There is some suggestion that having gaming for young people in the library may prove disruptive to other patrons. This is especially true in libraries where the capacity to provide a separate space for the activities of young people, including gaming, is limited. This may be of concern, but we must also look beyond the assumption that young people will be the only ones interested in or benefiting from the gaming experience in libraries. For instance, as of 2002, an estimated 50 percent of all Americans, most of them adults, played video games (Pham, 2002). It seems likely that the number has grown in the past six years.

There is also the insistence on the part of some that the business of libraries should be the encouragement of reading and the provision of information. According to a recent article in the *Ottawa Citizen*, for instance, "it might be tempting to view the introduction of video games within the sacred precincts of libraries as worrisome, even a blow for reading. . . ." While the view of libraries as places for reading and the provision of information is certainly not wrong, it may cause some to dismiss games altogether, rather than explore the possibilities that games offer in strengthening reading, information seeking and use, and meaning-making.

Video Gaming, Simulations, and Learning

There is currently a great deal of controversy over whether video games are good for children, bad for children, or somewhere in between. There have been similar studies that consider television as a medium with possible negative effects (Singer and Singer, 1990; Postman, 1986).

Much has been made of the ability of simulations and games to teach children (Gee, 2003) and adults (Filipczak, 1997) in ways that traditional computer-based training cannot. Many attempts are now being made to merge the compelling nature of gaming with instruction for a number of industries, from military to banking to anthropology. By steadily increasing the level of difficulty or complexity of a skill or idea to be learned, a simulation can afford learners a chance to gradually increase their abilities. Even such bloody games as Unreal Tournament (Epic Games, 1999)

have underlying elements that have been adapted to other purposes (Flipczak, 1997).

Among other sources, hospital studies show game players make better surgeons (Dobnick, 2004), articles highlight the military's conviction that game players make better fighters (Silberman, 2004), and in their book, *Got Game: How the Gamer Generation Is Reshaping Business Forever*, Beck and Wade (2004) conclude that game players make better business people. Prensky (2004) claims that people can learn Covey's (1989) Habits of Highly Successful People by playing video games.

The elements of gaming are being studied seriously in many circles for their pedagogical import. One such academic group is the Learning Games Initiative (LGI).

LGI describes its mission this way, "LGI's research and teaching is designed to fashion bridges among departments, academic and community organizations, and educational institutions around the world." (1999, par. 3).

Much of the literature regarding play suggests that some kind of learning is accomplished through playing games (Sutton-Smith, 1997). This would seem to indicate that players are finding or creating some sort of meaning for themselves as they play. In fact, Turkle (1997), Yee (1999), Lee (2000), and Leslie (1993) have noted important ways in which people bring their in-game characters and associations back to their outside lives and vice versa.

Furthermore, players seem to develop strategies for finding the information needed to succeed in both single player and online games (Adams, 2002; Adams, 2006). Not only do players find the information built in as feedback by game developers, they occasionally, through their play find unintended feedback and original strategies for problem solving (Adams, 2002).

Online Environments

The research being reported here centers around one particular online game or "virtual play space" called City of Heroes (CoH). Online games are not perhaps the easiest type of game to establish in a library, however the information seeking and meaning-making in single player role-playing games seems to have strong similarities to their online counterparts, based on earlier research (Adams, 2002).

The initial aim of the research was to determine how information behavior and meaning-making theories served in helping to create teams and groups in virtual play spaces, if indeed they did. At some point in most of these games, the challenges become too difficult to handle alone and a team is necessary.

The researcher performed a descriptive analysis, considering City of Heroes (CoH) as a deliberately created space that included both seem-

ing real and obviously artificial elements. Both the seeming real and artificial elements provided feedback regarding the state of the play space and the actions within it to the players. As part of descriptive analysis, the researcher used an everyday life information practices model, described below, to demonstrate how players found or were provided with the available information.

Additionally as "deliberately created spaces" CoH, and other virtual places, have a theatrical quality. Plays performed before audiences are also deliberately created representations of reality, and elements of the theatrical experience can be applied to the understanding of meaning-making in the virtual play space. As a part of the descriptive analysis, the researcher examined meaning-making in CoH through the dramaturgical perspective, using the work of many dramaturgical analysts as a basis (Goffman, 1959; Hare and Blumberg, 1988; Brissett and Edgley, 1990).

What Is a Virtual Play Space?

With all of the recent conversation in the library arena about virtual worlds, primarily Second Life, it is important to realize that not all virtual worlds are virtual play spaces. While one can "play" in Second Life, it is not in and of itself, a place created primarily for games, per se. There may also be confusion engendered by the reference to the characters created by players as "avatars" and the reference to role-playing in the virtual world. However, CoH and other virtual play spaces, are purpose-made for play.

Each massive multiplayer online role-playing game or virtual play space is a computer game based on a persistent, graphical, virtual world that players can enter and leave at any time. In order to experience the virtual environment, the player creates a character (or sometimes characters) to play. The character is displayed on the screen as an avatar, a visual representation of the character that one is playing. In addition, other avatars represent characters currently present in the game world. Because of the confusion when discussing the virtual or game world versus the outside or *real world*, the term *game world* or *in-game* will refer to the virtual play space or in-game environment, and the terms *outside world* or *real life* will refer to the non-virtual.

In the course of this research the terms *player* and *gamer* will be used interchangeably to mean those who participate in the virtual play space. Often within the game industry *gamers* is the preferred term.

Role-Playing Games

"Role-playing games (RPGs) themselves seem to be unheard of outside of certain circles. It is hard for role-players to explain what RPGs are to non-gamers; and it is even harder for non-gamers to understand what the appeal of RPGs is. RPGs are not just games; they are an experience." (Yee, 1999, p. 1). Role-playing games on the computer seem to have grown

from the roots of Dungeons and Dragons and similar games (still enjoyed by many) in the 1970s to something far more technologically sophisticated. Types of role-playing games include everything from the pencil and paper types involving many-sided dice and innumerable calculations, such as Dungeons and Dragons, to live action improvisational role-playing clubs to such fantasy groups as the Society for Creative Anachronism and military re-enactment groups, to single-player games wherein the player interacts with non-player characters, to online virtual play spaces.

Virtual play spaces or massive multiplayer online role-playing games (MMORPGs) are a special case of role-playing games. In this case the environment is provided online, and unlike some computer RPGs one can play with many other people at one time.

Information Behavior and Meaning-Making Theory

This research utilized what are generally referred to as information behavior and meaning-making theories. This collection of related theories include among them everyday life information seeking theory (ELIS) (Savolainen, 1995) and the dramaturgical perspective (Hare and Blumberg, 1988).

Each of the above-mentioned meaning-making theories arises from a different disciplinary background and views meaning-making from a different perspective. ELIS is a product of information science and has as its primary concern how groups of people seek information to maintain coherence within their communities (e.g., a work community, a particular status, or any other group) and therefore attain mastery of life. The focus of ELIS is on the group, although oftentimes the models in ELIS are derived from the sort of individualistic study that is characteristic of sense-making (Dervin, 1983).

Hare and Blumberg (1988) credit sociologists and social psychologists with taking a dramaturgical approach to meaning-making, using the interacting group as the unit for study. Because of the social nature of the research, the making of meaning in an interacting group seems an appropriate approach to the meaning-making portion of the research.

Everyday Life Information Seeking Theory

Researchers have produced many concepts of interest in the attempt to define how information is found. There are many categories that can roughly be defined as "active" and "passive" information seeking. These categories do overlap considerably.

Active forms are described in Wilson (1981) using the terms *active search* and *passive search*. Erdelez's (1999) uses the terms *information seeking* and *browsing*, and Toms (1998) uses *searching* and *browsing*. McKenzie (2002) describes the active categories in her model calling them active seeking and active scanning. Such concepts as passive search and brows-

ing are considered active because the information seeker may not be able to articulate the need for anything specific, she has put herself in an information neighborhood where appropriate information may be found.

More passive forms of information seeking are McKenzie's (2002) non-directed monitoring, Savolainen's (1995) monitoring the context, Toms' (1998) chance encounters, Wilson's (1981) passive attention, Ross's (1999) finding without seeking, and Erdelez' (1999) information encountering. Each of these constructs relates to finding information in an unlikely place or finding it while monitoring resources in a general way, just to stay informed. Perhaps the most passive way to find information is being told, that is, through being given unsolicited advice or referral, is what McKenzie (2002) describes as "by proxy" (p. 27).

The Choice of a Specific Model

Because of its straightforward categories and the inclusion of the "by proxy" category McKenzie's (2002) model of information practices, a version of everyday life information seeking, was selected to examine the apparent information seeking behaviors of players as evidenced through their avatars and via other available resources. The modes of information practice considered by McKenzie are: *active seeking*, which is the most direct mode; *active scanning* including semi-directed browsing or scans of the environment; *non-directed monitoring*, which generally includes serendipitous kinds of discovery; and *by proxy*, a situation in which an individual gains the information through the agency or intermediation of another.

It is also important to note that unlike some other models of information seeking, McKenzie's is based on social, rather than strictly cognitive concepts. The social nature of this model corresponds well with the highly sociological nature of the dramaturgical approach.

Specifics of Dramaturgy

The dramaturgical perspective generally is an off-shoot of symbolic interactionism. Dramaturgical analysis uses concepts drawn from the elements of theatrical performance to analyze social phenomena. Brissett and Edgely (1990) describe dramaturgy "as the study of how human beings make meaning in their lives" (p. 2). Dramaturgical researchers are curious not about precisely what it is that people do, nor what they intend to do, nor even why they do it, but how they do it. (Brissett and Edgley, 1990).

Sarbin (1976, quoted in Hare and Blumberg, 1988) lists the principal characteristics of the dramaturgical perspective:

- The meaning of an event arises from social interaction.
- The self (the recognition of individuality and separateness of others) is constructed in the social interaction.
- Actors not only respond to situations but mold and create them.

- The unit of analysis is not the individual but the interacting persons.
- Individuals construct and reconstruct meanings to make sense of their observations.

There are three basic critiques of dramaturgical analysis as theory and methodology. The first of these is the same charge levied about all qualitative work, that it is interpretivist and essentially impressionistic (Fine, 1983).

The second is that the dramaturgical approach is non-systematic, or non-theoretical, that it is essentially not propositionally tied to other theories. While an argument can be made about the nature of the dramaturgical approach, it is untrue that there are no links to other forms of social thought, "It is tied to symbolic interactionism, ethnomethodology, existential sociology, interpersonal psychology and other humanistic models in the social sciences as well as in the many varieties of sociological work inspired by the *oeuvre* of the late Erving Goffman" (Edgely, 2003, p. 150). Those who engage in dramaturgical analysis do not see the criticisms as problematic. Unlike those who would seek a linear explanation for all human conduct, dramaturgists do not see this as an unconditional liability. In fact, it is precisely because dramaturgy is *not* a closed theoretical system, but rather a way of describing human behavior, that it is such an informative and stimulating mode of thought (Edgely, 2003, p. 150).

Finally critics point to supposed methodological inadequacies in dramaturgy by saying that dramaturgy, particularly that of Goffman, has no specific and systematic method of testing its propositions about the world. Dramaturgists, on the other hand, claim that sensitivity to the expressive dimension of behavior requires no specialized methodology. To do dramaturgical analysis well, however, requires a single-minded commitment to the observation of people's actions and an appreciation that humans are always in the act of being and on the way to something else (Edgley, 2003).

Dramaturgy, then, in its acceptance of all types of theory and its emphasis on the observation of people's actions makes it an ideal form of analysis for this research. This is particularly true because of the dramatic nature of the play space and the play that goes on within it, especially since there is an emphasis on presentation of self in-game.

Definition of the Situation One of the most important concepts regarding information behavior and meaning-making in the dramaturgical approach is "definition of the situation." Some important similarities between information behavior, as it is commonly understood, and the dramaturgical approach are the common concern with everyday behaviors. Both models also consider information behavior and/or meaning-making as situated in time and place. Both models are concerned with the users' definition of the situation (whether an individual or a social group), no

matter how it is derived. The situation in either case is vitally important because it is in context that information behavior takes place and meaning is both created and understood.

Definition of the situation is an important concept particularly in dramaturgy. Every action begins with a definition of the situation, or idea that governs actions at their onset and ends with a new definition of the situation. Thus players make new meanings or understandings.

Methodology

This study was an examination of aspects of information behavior and meaning-making that was evident in City of Heroes as a particular virtual play space. The examination was ethnographic in nature.

The primary method of data gathering consisted of participant observation in the world of the game. Because it is impossible to participate in a virtual play space without interacting with others, it is impossible to participate on a surface level. In fact, native understanding is vital to the research. The focus of the observation was the temporary teams that were constantly formed, divided, and reformed in the game space, as well as other information sources and behaviors. Specific hours and days of play were determined by long sessions at the beginning of the research period to discover the periodicity of play for particular groups if there was one. When no time of day or days of the week became apparent as specific times for the play of any particular group or groups, the researcher made the decision to play one to four-hour plus sessions at least once a day, sometimes more.

There are many examples of immersive types of participatory research, with regard to sports and recreational activities. Sociologist Wacquant (2004), for instance, and participatory journalist Plimpton (1965) have written about a variety of sports. Fine (1983) participated in the shared fantasy of pencil and paper role-playing games to examine the social structure of that world. Turkle (1984, 1994, 1997) performed research on identity in various MUDs (multi-user domains) and MOOs (object oriented MUDs), the precursors of current graphical virtual play spaces, and concluded that it was impossible to observe without participation, because even observation requires some significant personal involvement. The definition of RPGs, by their aficionados as we have seen, is that they are not games as much as experiences, and as experiences they are difficult to understand from the outside.

Data for the research were gathered from a variety of sources, such as field notes, journals, electronic recording of screenshots and in-game conversation, forums, and websites (both official and unofficial), and casual conversation. Observations contained in field notes and personal journals, viewing of fan sites and discussion forums, and a close reading of the game manual, both the original version and a later version, are chief

among the data sources. Each of these provides a rich source of information for understanding the milieu of the virtual play space.

Field notes were produced first in the form of audio recordings taken in a stream-of-consciousness talk-aloud protocol. The researcher transcribed her own tapes throughout the research (although not necessarily immediately after each session), which led to many other insights and reflections. She transcribed the majority of the tapes completely although once the data saturation appeared to have occurred only parts of the tapes were transcribed. The method also shaped the directions in which the researcher began to investigate further.

Web forums, both those provided formally by the game creators and those created separately by gamers, are a kind of public communication with the participants' own words and can supplement observation within the game world. Game players also create their own unofficial Web pages, and these were a rich source of data about how the players played the game, what they thought of changes to the game, and the like. The websites contain everything from fan written stories and histories to detailed maps to mission suggestions. The forums on these sites and on the official CoH site were of particular importance in understanding the experience of other players in order to determine trustworthiness of the research.

The nature of information exchange in the game environment requires the immersion allowed by participant observation because of the unique character of the exchanges involved. The milieu of the in-game communication resembles that of a chat room with conversations overlapping each other. It was possible to record some of the in-game dialogue through reading it onto tape, or using screen capture, to be used solely as a supplement to field notes, websites, and message boards. It was obviously impractical to record twenty or more hours per week, if for no other reason than the number of interactions to be examined. Nevertheless, it was somewhat useful to electronically record exchanges, as a supplement to field notes and a source of more direct quotations and paraphrases.

Bill Gillham (2000) also suggests that bits of informal discussion and commentary can be included in research as evidence. Some examples of informal discussion are comments made by someone during a general discussion of MMORPGs or a comment made in the virtual world that pertains to some element of the research. Comments made in conversation following the presentations at various conferences about the researcher's work or the work of others who study games were particularly useful in providing ways to think about the research. Conversations with players of online role-playing games were also particularly important and the researcher incorporated these bits of conversation into her notes and thoughts as the research continued.

In traditional ethnographies in cultural anthropology, for instance, researchers often use physical artifacts as evidence. Even in ethnographies

of other kinds, physical artifacts of a different nature can be consulted. These artifacts might include such things as archival materials, letters, photos, and so on.

In a virtual play space, even though the artifacts are not physical in the customary sense, there are still virtual objects that can be included as evidence about the nature of an avatar or situation. For instance, costumes and the physical appearance of characters can tell the researcher much about others and their status and experience in the virtual play space. Such "artifacts" provided particularly good evidence for the dramaturgical analysis.

Finally, the original manual that came with the game was closely examined, and as the game world evolved another downloadable version of the manual appeared on the main CoH website. This version was examined as well. The manual was examined only briefly before playing the game, as this seems to be the way most players approach games. As the research continued, further study of the manual was made as needed, and finally near the end of data collection the manual was examined more closely.

Data Analysis

Preliminary and ongoing iterative analysis provided initial categories that began to emerge from the data. The resulting categories served to focus attention on what seemed the most fruitful areas for information seeking and meaning-making behaviors. Once the questions became familiar and recurred at different levels and in different circumstances, the researcher spent more time with card sorting and margin coding to refine the descriptions and themes thus iteratively working between questioning the field notes and other data and refining the themes. The selection of appropriate categories was a result of attempting to answer questions from the inclusive set of categories about the virtual play space in general.

Wolcott (1990) and Spradley (1980) emphasize the need to maintain the essence of the work without being overwhelmed by so many data that final analysis becomes nearly impossible. Miles and Huberman (1994) suggest that, by performing initial coding along the way, the process of data analysis becomes more manageable. By developing coding schemata, and further focusing the research as noted above, the researcher began to perceive trends and patterns. Through use of notes and card sorting general themes emerged ranging from descriptive to thematic, and entries in a personal journal were used to aid in identifying patterns. Once a pattern is perceived it will seem to appear over and over again. Therefore the researcher had to take care to notice and reflect on instances that did not fit into the pattern and be willing to consider that there might be actually something different happening. Introspection of this kind is extremely important in cases in which the researcher is also an instrument of the research.

Writing was also a continuous part of the data analysis in this study. Wolcott (1990) suggests that a researcher can never start the writing process too early. He also says that writing helps to sort and organize thoughts. One of the means by which the analytic writing was accomplished in this case was in writing parts of the research as they stood in any given moment for presentation at a variety of conferences. This strategy also served the purpose of gaining advice and commentary along the way from a broad assortment of personal and disciplinary perspectives.

While a number of software systems exist that can help the researcher sort, organize, and find trends in qualitative data, the researcher chose not to use one, preferring instead to allow the themes to surface more naturalistically. She used the rough coding of the field notes, the thoughts from personal journals, and card sorting. The card sorting consisted of the cutting and pasting of text from field notes, personal notes, forums, and other sources to index cards and manually manipulating the cards in various ways that allowed for more and clearer themes to emerge.

The process of finding the emergent categories was iterative as is usual in qualitative analysis. Initially cards were sorted into very general categories such as how did the participants find out key pieces of information (information behavior), elements of interface that support information seeking, elements of interface that block information seeking, and various theatrical elements. In the process, these categories were refined to more specific elements, looking at, for instance: where did information come from, did it parallel McKenzie's (2002) categories and categories regarding specific subcategories of dramaturgical elements as audience, role, definition of situation, among others.

The text chosen for the cards was selected in the following ways: pieces of the field notes, Web pages, personal journals, and other data sources that referred generally to the concepts and theories referred to in the research questions (information behavior, grouping, play theory, meaning-making, etc.), general description of the environment and play experience, examples of social interaction, and so forth. The text for cards was not selected all at one time, but rather through repeated readings (and in some cases reviewing of the field notes through listening) of the data sources.

The card sorting itself took many forms. Some of the experiences described in the field notes and journals were linked with the conversation of others and the commentary on the websites. As the research progressed, more stable categories and lines of inquiry were established and cards were sorted and reviewed (along with other data) to provide evidence for the researcher's conclusions.

There are a number of problems associated with analyzing data using the card sorting approach described above. One is the purely logistical problem of handling and remembering so many cards and concepts at one time. Another challenge for the researcher was the temptation of

narrowing the research too soon as opposed to having an unmanageable number of categories.

While the use of computer software for qualitative research may have been easier and benefited the research in some ways, the researcher felt the need to be physically involved with the process of the creating and sorting of cards. The perceived need to actually manipulate the cards may be due to the fact that the research took place in a virtual environment and manual analysis provided a more tangible connection to the data.

Two Frameworks for Analysis

McKenzie (2002) offers one model of everyday life information seeking. She offers "a two dimensional model of the information practices described by participants" (p. 25). It includes a continuum of information practices from actively seeking out a known source or planning a strategy to receiving unsolicited advice.

Dramaturgy offers a way to examine the making of meaning in any social situation, but it is particularly useful in the virtual play space, a highly theatrical environment to begin with.

Analysis through a Model of Information Practices With the framework of information practices (McKenzie, 2002) in mind, the researcher went back to the field notes and card sorting once more to see if players both through their avatars and otherwise did indeed use similar types of information practices to recover information necessary to accomplish their goals as those laid out by McKenzie.

Analysis through the Dramaturgical Perspective Virtual play spaces lend themselves well to study using theatrical metaphors. The analysis of the data in this research in large part examined broad parallels between CoH and particular theatrical forms as well as the interactions in the game for the meaning made manifest in its playful interactions. As in any dramaturgical analysis, this research employed various parts of stage production, such as setting and role as metaphors for analysis.

Dramaturgy is an ideal form of analysis for this research. This is particularly true because of the dramatic nature of the play space and the play that goes on within it, especially since there is an emphasis on presentation of self in-game. While much more analysis was performed, the portion that concerns "definition of situation" that is included in the findings was particularly enlightening in evaluating meaning-making in the virtual play space.

Assurance of Trustworthiness

In any case where the researcher is participating fully in a social environment, she becomes an instrument of the research, and her thoughts, feelings, and experiences become part of the data. This obviously introduces the possibility that the researcher is seeing things through her own lens

only and is not providing an accurate description from the participants' points of view. The researcher needs to be reflective about the possibilities.

Establishing trustworthiness and transferability in such an anonymous environment is a necessary challenge. The researcher shared the text with selected peer debriefers and member counterparts as it emerged in order to check for the above qualities.

Member checking is an exercise often recommended as a way of ensuring and determining the trustworthiness of research. Because of the sort of anonymity that exists in the game environment this tactic proved somewhat difficult. Therefore, a two-pronged approach was used to solicit comments on the work. First, commentary was elicited from ordinary players (essentially member counterparts) in an otherwise highly anonymous environment. Secondly, the researcher sought commentary from peer debriefers of a more scholarly kind who were, preferably but not necessarily, players of the game in question or players of other similar games.

In order to further test trustworthiness and transferability, triangulation among sources was used. Participant observation, forum posting, and any casual conversations offered a "life as lived" point of view compared to a "life as told" point of view (Miles and Huberman, 1994, p. 267). In addition, a comparison and contrast to other research on the social nature of games that has a different focus but had some overlapping concepts was an effective way to check the consistency and trustworthiness of the study.

The intent of this study was not to attempt to generalize to other situations, but rather to provide a full and detailed description of the context and research that may be applied and tested in other situations. In order to make this transferability possible it was necessary to provide sufficiently complete information about the context of the study and processes of the research to provide other researchers meaningful comparisons with their own studies.

Findings

ELIS

Just as in everyday life, players in CoH must retrieve information in order to solve problems or make sense of situations. There are many parallels between the various models of ELIS, which were the framework for the study. McKenzie's (2002) model was determined to provide the clearest and most complete categories for analysis. What follows is her model and a brief description of her modes of information seeking and how I specifically connected to and interacted with appropriate information using them. (From this point on the research will be written in first person).

The most directed mode of information seeking is called active seeking. In this mode the person (or player in this case) seeks out an identified source in order to get answers to specific questions. An example of this

type of information seeking in CoH is going to the manual for information. Players, however, generally search actively in formal sources as a last resort, tending instead to rely on other information practices. Other avenues for active seeking are, for example, logging into the official game forums and asking a question of someone who knows. Players also do active seeking in ways that are observable in avatar actions. For instance, an avatar may approach a trainer (a non-player character that the player reports to when they have enough points to become a higher level avatar) to find out specific information about the game.

The second mode, active scanning, involves locating a likely source or browsing in a place likely to have pertinent information. In connecting with information in this case someone might identify a chance to ask a question, or observe by watching and listening. I sometimes went to the official and unofficial Web pages to see what was being said or what was new in a forum or column there. It was in this way that I first discovered a wonderful forum post called "The story of a Casual Gamer Who Played CoH" (posted July 26, 2005), which offered a wealth of information about character building, teaming, and much more from the point of view of a player. It became a source I referred to regularly. Another form of active scanning observed in avatar actions in CoH is scanning the environment, being alert for cues and clues. For instance, the blinking and pulsing of important objects and the sounds of the enemies are signs to be looked for, and the information they provide is very important to reaching the goals in the game. The pulsing sounds are only evident when an avatar is within a certain predetermined proximity of the object; so active scanning for the sounds and blinking are necessary.

Non-directed monitoring, the third mode, can be compared to serendipitous discovery, encountering or recognizing a source. Much of my understanding about the interface was discovered in this way. Finding the use of certain elements of the interface, targeting villains and heroes, and even learning exactly what the powers did were all pieces of important information to be encountered and remembered during the play of the game. Many of the discoveries that I made through non-directed monitoring were actually available in the manual, but since I wanted to play the game as a more or less typical gamer might, I did not read the manual closely until after some of these discoveries had been made.

The final mode of information practice is having someone else who identifies a person as being in need of information, offer unsolicited advice, or refer that person to a source. McKenzie (2002) calls this mode information seeking by proxy. I would liken this way of getting appropriate information to the information I got from the contacts and trainers in the game. These are NPCs (non-player characters) that are built in by the game makers primarily to give the players information. While these characters are sometimes sought out particularly to gain information, as

was mentioned in active scanning, often they give bits of information to the character that she was not even aware were important. For example, contacts provide information about the stories behind the missions, the characteristics of a particular group of enemies, where to find the mission, whether you are likely to need a team to perform a particular mission and so on. Other players may also see a player struggling and offer advice without being asked.

Dramaturgy

Dramaturgy is more clearly micro-sociological, because it grows from the roots of symbolic interaction, itself micro-sociological. It also concerns meaning-making or information in a group.

In fact the unit of analysis in dramaturgy is the social group, not the individual. Therefore, it is an important step toward the understanding of meaning-making in a social context. Dramaturgy has not, to my knowledge been employed as a method of analysis in the field of information studies in the past, but it is a step from information behavior as we understand it, and a more social approach to meaning-making in an information studies context.

One of the primary factors in dramaturgical analysis is rooted in "definition of the situation." Definition of the situation is defined as "the meaning that actors attach to the setting (including the presence or absence of others)" (Hare and Blumberg, 1988, p. 154). Every action begins with a definition of the situation determined by the actors in the situation. It is made of characteristics that can be likened to theatrical elements, such as role, costume, setting, and so forth. When each action ends, by virtue of the interaction between the actors and within the setting, there is a new definition of the situation created through the social interaction. It may be a large difference or a subtle one, it may be long lasting or transitory, but we make meanings that help to guide us regardless of their magnitude. Some players choose to try to change the definition of the situation while other changes are arbitrary or even unconscious.

In three examples from CoH, I will demonstrate concept of self and how it changes as the definition of the situation changes through social interaction. First, often I found myself playing the same mission more than once, simply because I had been invited by another team that was doing the same mission. There is no prohibition on completing missions repeatedly. One particular mission I played half a dozen times, each time with a different leader who defined our roles differently…or did not define them at all. New meanings emerged based on how the team was constituted and who the players were, often in subtle ways.

On one occasion I happened to work with a group that was extremely motivated by gaining points to level up. I, on the other hand, had always been so intent on the social and informational aspects of the game, that

reaching higher levels was not particularly important to me, other than as a way to observe higher level players. But the other players on the team were enthusiastic about making it to the next level and simply assumed that I was interested in the same thing and treated me that way. Without thinking much about it, I accepted that definition and became the self that they assigned to me, at least for the duration of the performance. It was not until the play session ended and I reflected on it, that I realized that my concept and presentation of myself had changed radically. What it meant to doing this mission and my place in it changed more completely than on any other occasion in the mission.

The second example is more permanent and has to do with the changeable relationship with the creators of the virtual play space. In order to provide what they consider more balanced game play, the creators sometimes tweak elements of the virtual play space. In virtual play spaces, balanced game play is intended to provide a system that does not privilege any particular archetype and makes the play space more equitable. Sometimes the strengths of powers are changed, resulting in a new concept of the best teaming strategies. The changes in powers and the like, result in considerable changes in how players must present themselves and interact with each other, thus creating a new definition of the situation and information about how the player must continue.

Finally, there is the interaction with the non-player characters in the game. These characters are clearly artificial, designed by the game creators to behave in certain ways, and yet they are a major part of the dramatic situation, and serve as either the providers of the scenario or the antagonists of the piece. Even the citizens may fulfill the role of the chorus, emphasizing the action by comments and actions. How I will play my role or present or perceive myself will depend upon what the contact tells me about my last mission, what he or she tells me about my next mission, and so forth. Where I have to go and the power and type of villains I meet will determine my presentation of self and how I will define the situation. For instance, while I feel like a fairly competent hero by this point, being alone on a difficult mission may put me in the position of hiding and avoidance, even though I do not prefer to present my ideal self as one who hides and avoids.

Conclusions

While this research emphasized a particular online game environment, the information seeking and meaning-making applies to many other virtual play spaces, both multiplayer and single player. It is also important to know that information behavior and meaning-making are indeed occurring. If this is so, as it appears to be, gaming in the library could be an important way to understand information behaviors and promote effective information seeking in the library.

Whether gaming is taking place in the library or elsewhere, there are a number of questions for information specialists to be considering. It seems as though young people (and some older ones) are increasing attuned to playing in this way and, therefore, to seeking information and making meaning in this way. The possibility of a new way of seeking information and meaning-making suggests several lines of investigation regarding the provision of information in arenas other than virtual play spaces. For example, how can information professionals provide information in an engaging way? How can we kindle interest in more traditional sources of information, and should we try to do so while preserving what some might consider the "essence" of the traditional source? Can we make use of the concept of definition of the situation in other library-related arena, outside of gaming to help us understand more thoroughly how we are reaching our information seekers and it is hoped helping them to make meaning of both the information we are helping them to find, and the finding process itself? These are matters that remain to be explored.

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