A Season in *Syberia*:
Gameplay as Activity in
Point-and-Click Adventure Video Games

Introduction

Video games, for some time after enjoying their current widespread popularity, were widely dismissed as superficial; a waste of time; or, even worse, a dysfunctional activity capable of damaging at-risk groups such as children through their purported promotion of violence and disrespect for conventional authority (De Aguilera & Mendiz, 2003, p. 3). As Pearce (2006) notes, even today this general perception is not entirely gone:

> Even for people who regard games as a high cultural form--including those of us who make a living playing, writing, talking about, and making them--the general consensus is that games are not productive. Game developers themselves are sometimes puzzled by the academic interest in games--after all, they say, it's "only entertainment." (pp. 17-18)

However, as we move into a new "digital" century, video gaming is beginning to be treated seriously by a wide spectrum of commentators. There are now academic journals devoted to studies of gaming; meetings convened to address issues such as gaming and culture; Internet sites and other communication dealing with specialized gaming contexts such as gaming and business, and gaming and the military; and generally the recognition that video gaming, far from being a waste of time, can be a valuable tool to simulate environments, both mundane and exotic, and thus useful in such assimilative activities as training, orientation, and acculturation.

Yet even with the as yet comparatively small amount of depth academic attention to gaming and its perhaps serious consequences ("...scientific research into video games is still relatively rare, even though the overall literature is fairly abundant" [De Aguilera & Mendiz, 2003, p. 3]), research relying on deep description of the process by which video games are played, from the Player's perspective, remain limited. Despite efforts by social scientists to understand some (narrow) *elements* of video gameplay, research on the topic falls short, for a number of reasons. First is that games are frequently studied by those who are not themselves Players (De Aguilera & Mendiz, 2003, p. 3). Researchers, due perhaps largely to less experience as gamers, appear in the main to regard video games as communication artifacts or social phenomena and not (necessarily) as activities in which to fully understand the game, one has to play it. Studies of games by people who play them extensively and yet who are able to comment on them reflectively are long overdue. Gee (2006) puts it well: "As a new art form, one largely immune to traditional tools developed for the analysis of literature and film, video games will challenge us to develop new analytical tools..." (p. 1). Although Gee cites literature and film analysis as fields where

methods need to "catch up" to video games, an even stronger case can be made that social scientific methodology--which seldom acknowledges the concerns of art and literature--lags even further behind.

In this paper we try to alleviate these shortcomings by turning to *activity theory* (Engeström, 1987), an alternative psychological methodology not heretofore used to study detailed thought processes of gamers immersed in gameplay. Activity theory offers a means of probing the gameplayer's consciousness and its relation to a specific form of mental and physical activity, namely, gameplay. Here, activity theory is applied to the analysis of detailed journals kept during gameplay by one of the two authors of this article (hereinafter, "PI/Player" ["PI" = "principal investigator"]) while playing through to its conclusion *Syberia*, a renowned point-and-click adventure game (hereinafter, "PACAG"). After conducting an extensive activity theoretical analysis of the journal, we identified principles, based on system contradictions, for achieving a more in-depth understanding of PACAG gameplay and tested these principles in playing *Syberia*'s sequel, *Syberia II*. PI/Player kept a similarly detailed journal while playing the second game. Results showed that gameplay involves the complex interplay between Player's mental processes and the communit(ies) in which she or he functions. Before presenting these results, we turn to a brief introduction to activity theory.

Activity Theory and Triangle of Activity

Referred to by some practitioners (e.g., Engeström, 2000) as the *cultural-historical theory of activity*, activity theory dates from Vygotsky (1978), though it manifests in various forms. Although relations among these approaches is sometimes contentious, most agree on the unity and inseparability of consciousness and activity, that is, "the human mind comes to exist, develop, and can only be understood within the context of meaningful, goal-oriented, and socially determined interaction between human beings and their material environment" (Bannon, 2008). This view is offered as an alternative to conventional (read, "Western") approaches to psychology, where research often proceeds from assumptions that mental processes arise from internal activities.

The variant of activity theory we use to analyze gameplay follows a line from Vygotsky (1978) to Leont'ev (1978) and finally to Engeström (1987, 2000). Vygotsky's primary concern was *mediation*. He argued that humans do not interact directly with the environment, but accomplish tasks through mediation by means of artifacts, principally signs and tools, that help achieve goals (work). Despite Vygotsky's insight, though, his formulation did not account for social mediation in collectivities.

Vygotsky's discoveries concerning mediation by tools and signs, together with Leont'ev's concerning artifacts and social praxis, led to the provocative and creative theory of work elaborated in Engeström's *Learning*

by Expanding (1987). There Engeström presents his well-known "triangle of activity," an elegant and productive formulation offering a way to systematically pinpoint, analyze, and correct system stress points ("contradictions"). The six triangle nodes (Figure 1) represent the basic elements (*subject*, *instruments*, *object*, *rules*, *community*, and *division of labor*) of a specific work task performed in the context of a human collectivity.
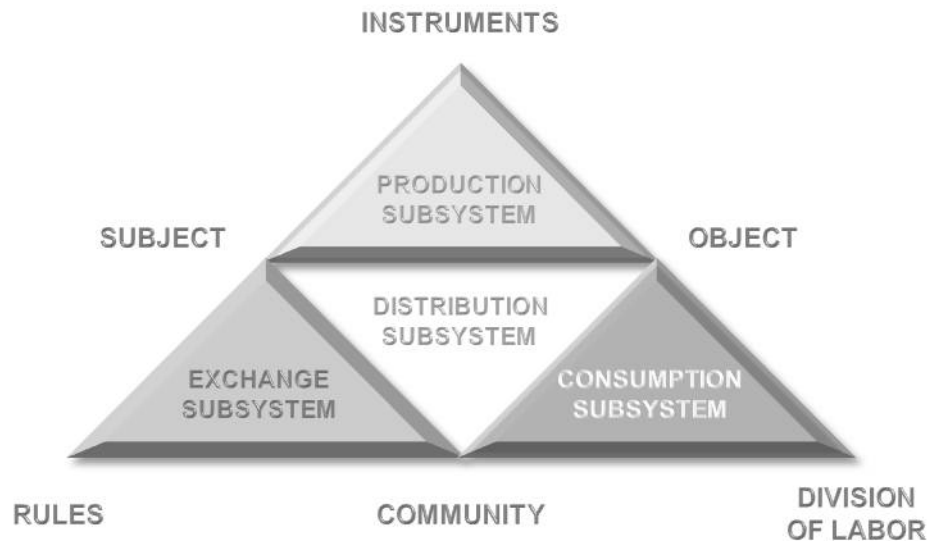

Figure 1
Triangle of Activity (Engeström, 1987)

Activity systems combine an actor (individual or group), the *subject*, who uses tools (*instruments*) to perform work on an *object*, expecting some outcome. The *subject*, *instrument*, and *object* nodes make up the *production subsystem*, one of four subsystems (along with *exchange*, *distribution*, and *consumption*). While Vygotsky stopped at the *production* subsystem, Engeström folded in three elements representing aspects of the larger collectivity where work is performed: *rules* (standards of community practice controlling how work is performed); *community* (totality of the collective in which work is performed); and *division of labor* (specialized tasks relevant to the work activity, as performed by work-defined subgroups of the overall collectivity).

All nodes except *instruments* intercombine to form the other subsystems. The *subject*, *rules*, and *community* nodes form the *exchange subsystem*, which places value on the activity/work made in the *production subsystem* so that its products, with their value, can be exchanged. The *subject*, *object*, and *community* nodes make up the *consumption subsystem* where work products from production and valued in exchange are consumed by the collectivity. Finally, the *object*, *community*, and *division of labor* nodes form the *distribution subsystem*, in which valued work products are disseminated to the community for consumption. These nodes,

forming systems and subsystems which interrelate harmoniously yet in contradiction with each other, provide an ideal template to explicate the complex activities involved in gameplay.

Activity Theory and Gameplay: The Case of *Syberia*

The Syberia *Game*

Syberia's plot concerns a vanished artisan who invented a process to manufacture incredibly lifelike robots (or, as residents of French Alps village of Valadilene call them, "automatons"). This enigmatic character, Hans Voralberg, proves key to attempts to negotiate the sale of the facility that makes the automatons, from the Voralberg family to an international toymaking conglomerate. The gamer plays in third person as Kate Walker, an American attorney sent to Valadilene to finalize the sale.

However, Kate quickly learns her assignment is not as straightforward as it seems (it seldom is in a PACAG!). Almost from the moment she arrives, she learns that the Voralberg family matriarch who negotiated the sale (Anna Voralberg) has just died. Indeed, at the game's outset, in an extraordinarily evocative cutscene[1], Kate stands beside the road while Anna's funeral procession, attended by automatons dressed in old-fashioned funereal black, lurch slowly, haltingly by. Because Anna's artisan brother Hans, the only other known member of the family, apparently died in a falling accident as a child, Kate initially sees the sale of the company as routine, involving just Anna, not any other living relatives. As she accumulate clues, however, she discovers Hans did not die, but fled his domineering father, Rudolph, east toward what is thought a mythical land, Syberia, allegedly inhabited by giant mammoths. Kate sees that, since another Voralberg may have survived, it must be he is brought into the decision on disposing of the estate. At least, Kate has to confirm whether Hans is alive or dead.

One of the first steps in beating the opening level is for Player to find the Voralberg estate. On its grounds are not only the factory where automatons are made, but information and resources without which Player cannot proceed. For example, on the estate is a life-size clockwork wind-up train (no, that is not a misprint!) in which Hans apparently fled and along whose tracks Kate must now follow through Russia and beyond, toward Syberia.

Identifying the Nodes of the Triangle

Like any systematic investigative procedure, activity theory begins by selecting details from "real life." This arises from observations of stress points in the performance of an activity, bolstered by cognitive effort in fitting these observations into a cohesive whole. Our first step, after painstakingly analyzing the gameplay journal

of PI/Player, was to decide which of myriad elements of real-life gameplay activity were most relevant to the system we wanted to define; these elements we placed on the triangle's nodes (Figure 2).
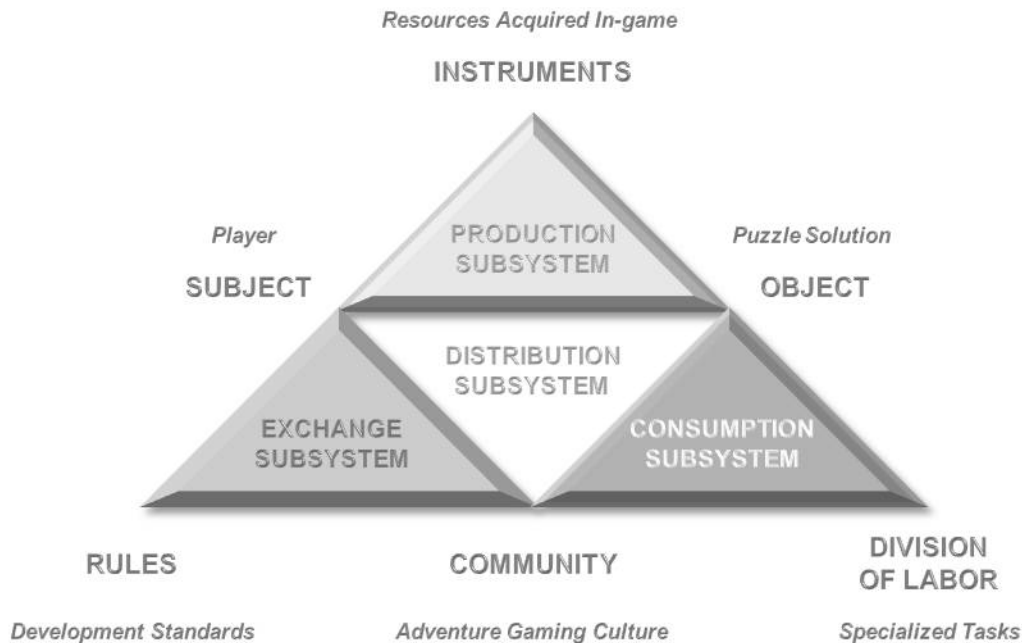

Figure 2
Triangle of Activity with Gaming-Specific Nodes Identified

Individual-based nodes (subject, instruments, and object nodes). We begin with the *subject* node (Figure 1). The *subject* is obviously Player. Among various qualities for Player on this node, our survey of the variables of concern caused us to focus on psychological qualities potentially useful in solving PACAG problems. We viewed these as innate qualities brought by Player prior to first engaging the game, such as intelligence; memory; ability to pay attention and to reason; drive and persistence, especially in the face of frustration; and a host of others[2].

To delineate the system we focus on tension in Player, assuming the principal goal is to solve all the puzzles, advance through the levels, and "beat" the game. We see the conflict experienced by Players as between their desire to be self-sufficient in achieving the *object*, against a desire to do this without suffering too much frustration, frustration that may cause one to turn to resources (hints, cheats, and so on) beyond those brought to the game (*subject*) or acquired playing it (*instruments*). We see this tension in the top subtriangle (Figure 1), the *production subsystem*. The *production subsystem* is the most rudimentary rendering of activity, including only the *subject*; the *object* acted on; and the mediating effect of *instruments* in achieving the *object*.

Community-based nodes (rules, community, and division of labor nodes). The *production subsystem* (Figure 2) represents resources in the immediate domain of Player: what Player is (*subject*); uses (*instruments*);

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and achieves (*object*). Resources beyond those in the *production subsystem* are assigned to the lower portion of the activity triangle, on the community-based nodes (*rules*, *community*, and *division of labor* [Engeström, 1987]). Considering the broader sociohistorical context represented by these latter nodes is useful in engaging new approaches to PACAG puzzle solving.

In this activity system, the *rules* node includes *developmental/distribution standards*, a term encompassing the array of practices involved in developing and marketing a game. Developers appear to adhere to a "fairness doctrine" with respect to game design. According to this understanding, they have a duty not to keep from Players facets of the game that would allow them to beat it. In other words, they should "play fair," an understanding implying not only intent but design skill. In a "well designed" game (and what "well designed" means provokes considerable disagreement), (1) all resources needed to complete the game should be more or less readily at hand, so that (2) any able and persistent Player can, through application of sufficient effort, combine these resources to come up with a solution. A corollary is that getting resources and appropriately interrelating them, for most Players, should neither be too difficult (so frustrating that one gives up) nor too easy (failing to satisfy a quality on the *subject* node, the personal satisfaction of self-reliantly "beating" a sufficiently challenging game). As a composite term for these design principles, we have chosen "standards."

The second of the system's collectivity-based nodes is *community*, which includes all cultural qualities of the PACAG gaming culture. Though not precisely defined, PACAG culture seems to be distinct from broader gaming culture(s), primarily because it attracts Players who seem different from those who play other games, such as first-person shooting (FPS) games or real-time strategy (RTS) games. PACAGers tend to be of a questing temperament; more inclined to involvement in virtual mental rather than physical challenge; and more likely to enjoy immersion in a fantasy-type environment.

On the *community* node, this sense of individualism is broadened to refer to "questing" values to which PACAGers appear to subscribe. The notion of the quest is intrinsic to PACAGs, with Players "producing" solutions by overcoming many obstacles. Developers heighten the fantasy element by using opportunities to conflate Player's "real world" experience of playing the game with the game's story line--for example, Player does not simply press correct keys at appropriate places, but by so doing, in the story vanquishes a daunting opponent.

To the extent that they can be seen *as* a community, PACAGers are an embattled collective. In the early days of video gaming, PACAGs comprised the most popular genre (Harker, 2002). Over time, as developers shifted attention toward more profitable genres (such as FPSers and sports games) PACAGs have retreated from the center to the periphery of game designer attention. As a result, PACAGers have become more cohesive in the

face of what they perceive as a threat to "their" special culture (see, for example, Pearce's [2006] depiction of the *Myst* virtual "diaspora"). On the *community* node there is tension between inclusiveness engendered by being a member of the PACAG culture and the cultural value of individualistic, self-reliant questing by each member.

The *community* node, along with the *subject* and *rules* nodes, forms the *exchange subsystem*. The *community* node is particularly interesting in that it is the only node involved simultaneously with three separate subsystems. Apart from its role in describing the *exchange subsystem*, it also links with *subject* and *object* nodes to form the *distribution subsystem*; and again with *object* and *division of labor* nodes, to form the *consumption subsystem*. Nodes other than *community* inter-link either with a single subsystem each (the *instruments*, *rules*, and *division of labor* nodes) or with two (the *subject* and *object* nodes). That the whole activity triangle is drawn into the focal *community* node is a testimony to the power of the collectivity in defining any activity.

Finally, the *division of labor* node is where we identify specialized practices of those who develop, market, comment on, and play games. This extends the contradiction on the *community* node (and the *subject* node) to myriad tasks involved in developing, playing, and marketing a video game. In tension with this idea is the notion of specialized roles in the gaming community working more or less cooperatively, giving Player (who, by playing, automatically becomes a participant in that "community") resources with which to help solve game puzzles. These resources, again, have been provided by others performing within their own specializations.

Because we originally focused on individual activity, when we first conceived this node, we had in mind specialized work in which people composed texts explicitly to help Player. Such written texts are widely available in printed form and even more extensively on the Internet in, for example, walkthroughs or guides that take Player step by step through the game, and more recently gameplay videos posted on sites like *YouTube.com*. Following release of nearly any game, one will shortly find on the Internet walkthroughs in various venues. These vary in detail (some explicitly define every step, even providing alternatives, while others offer more general and less precise hints and suggestions) and level of sophistication (while the majority of walkthroughs are entirely text, a comparatively lesser number provide written advice and pictures captured directly from the game ["video caps" or "screenshots"]). There are even walkthroughs that provide short videos showing actual gameplay.

For Players adhering to the core value of self-reliance (*subject*), to consult a walkthrough (or other form of help) is bad form, an admission that one has given up solving the puzzle on one's own. In this system, to consult such help is to take advantage of resources made available (at the *division of labor* node) through the efforts of others who took the trouble to play the game and the greater trouble to compose a walkthrough.

In defining this node, we wanted to focus on more than simply explicit help in conventional venues such as walkthroughs. We looked toward a more expansive domain that, even if not explicitly designed to provide resources to Player, nevertheless worked toward that goal. As we did so, we became aware of a much broader range of information, involving resources that, happily, did not seem to violate the implied questing value to avoid walkthroughs and other "cheats." Indeed, in some ways, pursuit of opportunities in this realm of help sources is similar in difficulty and creativity to consulting (or even writing) a walkthrough. To name just a few, these include: reviews (including websites; television commercials; trailers in movie theaters and even more extensively on the Internet; print advertisements; reviews of games on television, radio, and in newspapers; and other sources). In other words, our conception of *division of labor* and the products thereby produced expanded enormously.

Primary Contradictions

The whole notion of the activity triangle is built upon what Marx called the *production-consumption paradox* (see Engeström, 1987, p. 37), depicting an inescapable tension in all human enterprise. To survive, a collectivity must *produce*, but at the same time *consume*. Here consumption involves using resources to enable Player to successfully complete the game. These, as seen in the *production subsystem*, encompass what Player brings to the game (*subject*), combined with that which is discovered through play (*instruments*). These resources do not function in isolation. For example, Player might succeed by combining some functional element (say, an object needed to complete the working of some mechanism ["in the game," hence *instruments*]), but that is actualized by personal qualities, such as the ability to remain undeterred by frustration after failing to immediately find where the functional element needs to be used (part of Player's mental landscape, hence *subject*).

To reflect these tensions, each node specifies, first, a facet reflecting action that is individually (self) oriented. This facet is placed in conceptual tension with another reflecting what is collectively (group) oriented. On the subject node (Figure 3), we identify one of these production-consumption tensions (Engeström's [1987] technical term for these is "primary contradictions" [p. 43]) as between the idea of a completely self-reliant Player who depends only on resources s/he brings to the game (*subject*), enabled through combination with what s/he learns through playing the game (*instruments*). At one or more points in any game, Players encounter puzzles or problems they cannot solve initially or even after repeated tries. In terms production-consumption, it could be said that the drive to solve a problem (to "produce" a solution) is in tension with the specifics of sociohistorical circumstance imposed on the production process (i.e., obstacles). An example of latter is the stressful demands upon ("consumption of") one's personal resources, such as patience and tolerance to endure frustration.

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Figure 3
Triangle of Activity with Nodal Tensions Identified

The distinction on the *subject* node sets the tone for primary contradictions on the other nodes. Moving to the *instruments* node, the primary contradiction is between two classes of information, both of which are contained "in the game." The first is that which is perceived and/or processed by Player in an appropriate fashion; the alternative is that which is not so perceived and/or processed. Colloquially, it is the difference between what one "gets" and what one doesn't. For the former type, production occurs when what developers program ends up "working," that is, the pieces fit together and the puzzle is solved. As Player uses resources available from developers, combining these with his/her abilities, s/he "produces" a solution.

The cost (consumption) to the system is when information at the *instrument* node is not processed appropriately. This expenditure is tied to personal costs referred to in the *subject* node primary contradiction. In a well-designed game (one without significant "glitches") personal frustration often arises from failure to notice what ought to have been obvious. The consumption aspect of the paradox provokes a common response in Players (often laced with profanity!), "How could I have missed *that*?" Such a response is an implicit acknowledgement that previous efforts were misdirected, but also a lamentation over wasted effort that could have been more productive had Player only noticed that one small thing s/he persistently missed.

The basis for this entire analysis in fact is built on an error in playing, one that led to almost no production and a massive amount of consumption. Recall that, in our earlier discussion of the game, we noted that in *Syberia*'s initial phases, it is vital to locate the Voralberg estate. For a very long time PI/Player could not do this, even though in retrospect it should have been easy. We confirmed these ideas through analysis of PI/Player's first experience playing *Syberia*. Reviewing the opening cutscene, we were embarrassed to find an embarrassingly large number of clues to the existence, location, and even the visual appearance of the Voralberg estate.[3] Missing the estate, not to mention its location and various distinct subelements (such as the train station and automaton factory) led to a significant and easily avoidable consumption of PI/Player's time and energy.[4]

This process proves that, when one tries to advance past a particularly difficult sticking point, one should consider possibilities beyond what is in the *production subsystem,* however that may be defined. The problem is that the *production subsystem* is the point where most people stop, not where they begin. PI/Player came upon the estate literally only after exhausting all options in the *production subsystem*--his "conventional repertoire," so to speak. Conan Doyle had his fictional detective Sherlock Holmes famously saying that, when one has eliminated all that is impossible, whatever remains, however improbable, must be the truth (Doyle, 1890). Failing to find the Voralberg estate (and at that point not even aware it was an estate that was being sought) and in the process exhausting the "usual suspects," PI/Player had to either confess weakness and consult a walkthrough (or some other form of "cheating") or else venture into Holmes's realm of the "improbable," a realm beyond what a frustrated Player normally would consider "legitimate" resources.

The approach PI/Player resorted to could hardly have been more unconventional. He was driven to speculate about abstract principles of game design assumed to comprise the consciousnesses of *Syberia*'s developers. This was done, despite the fact that PI/Player's knowledge of game programming is nearly nonexistent. Specifically, he posed this question: *why does* Syberia *seem so "two-dimensional"*? Obviously this kind of question will never appear in any game instruction book, guide, or other conventional source of information. Indeed, faced with repeated failure of conventional approaches, a limited conception of resources, as in the *production subsystem*, might dictate that the only "solution" is to abandon the game, thinking either it is not worth the effort (failure at the *subject* node) or an error in the game's design (failure at the *instruments* node).

PI/Player asked whether *Syberia*'s designers were consistent with their own design principles. Influenced by chief game designer Benoît Sokal, a renowned illustrator of comic books, *Syberia*'s developers consistently lavished attention on background and landscape in an attempt to convey depth. There are many examples: the playing character, Kate, frequently has to be navigated into screen depictions where she is facing mountains or

buildings rendered as vastly distant. When she enters the Voralberg automaton factory, she is in a very large, not to say cavernous, interior. Even though this approach doubtless involved strategic considerations, the developers subscribed to graphic design principles showing they were thinking in three dimensions and were aware of how such considerations affected gameplay.

Once this speculation entered the mind of PI/Player, so did other thoughts about the "three-dimensionality" of puzzle-solving resources in areas not previously explored, such as an area on the other side of the main street. In the game's initial phases, this possibility is obscured by the fact that PI/Player has to have Kate repeatedly go up and down the main street, in a right/left, left/right direction, to get to various resources and locations. Thus, early on, Player falls into the habit of seeing Kate move along a two-dimensional path, as seen from the perspective of someone on the side of the road opposite where her resources are found (as she walks from the hotel, this would be on her right, whereas the perspective of PI/Player is on her left, roughly in the area where the "missing" Voralberg estate is located). However, one should note that, as this activity system is defined, neither this intuition nor the ideas that stimulate it *can be readily consciously ascribed to any of the three nodes in the production subsystem*. This is because the idea does not come from Player (*subject*); in-game resources (*instruments*); or goal (*object*). The emergence of such insight can occur only when Player advances, by act of will, into the realm of *community*, through speculating about game designers' intentions.

Next, on the *object* node (completing the *production subsystem*) we derived the primary contradiction as between, on the one hand, what we might call an "appropriate" combination of ability (*subject*) and perception (*instruments*), and on the other hand, inappropriate combination of these. Here, as on the *instruments* node, successful production (appropriate combination) is a process of fashioning the solution (or, *a* solution) as apparently intended by game designers. Personal and in-game resources combine to fashion a solution to satisfy the self-reliant side of the primary contradiction on the *subject* node.

However, for the opposite of the contradiction, where one fails to appropriately combine resources, there is considerable cost. The *object* cannot be achieved because the effort is to no avail. After playing several PACAGs, we think this single factor is the most difficult of gaming elements to deal with. One often literally reaches the end of one's rope and must then make a decision about whether all this trouble is worth it.

We decided to consciously incorporate features of the broader gaming culture and community to improve our ability to solve particularly knotty PACAG problems/puzzles. This moves the area of inquiry from discrete individual actions to collective activity. In the *production subsystem* we saw how less desirable features of the primary nodal contradictions were those that led to inability to function as the game developers (appear to) want.[5]

These contradictions highlight questions confronting Players who, in quandaries over particular problems, try to determine what developers intend. Questions of this sort are not easy to answer: is the problem that one has simply failed to put things together appropriately (relating to Player him- or herself [*production subsystem*]), or are the game makers playing fair, and skillfully, with Player (relating to the designers [*community*])?

As we have seen, there is an intimate connection between the *production subsystem*, which functions at least conceptually at the individual level, and this *rules* node, which actualizes a collective understanding according to which Player's good efforts should not be wasted, but should, followed persistently, lead to success. In production-consumption terms, this is the tension between producing a well designed game, and failing in one or more aspects that would result in a well-designed game.

This interface between the *production subsystem* and *rules* node is shown in PI/Player's solution to the estate location problem in *Syberia*. One could ask: why did PI/Player find himself trying to distinguish between two- and three-dimensional space as a source of information to locate the estate and thus the resources needed to advance in the game? Based on previous knowledge of *Syberia*, one of the most feted PACAGs in gaming history[6], PI/Player was more than willing to give the designers credit for adhering to good standards. Such a favorable assessment comes not only from a Player's immediate experience through playing the game, but the game's reputation in gaming culture. Reputation involves features of the *community* and *division of labor* nodes. Simply put, PI/Player assumed *Syberia*'s developers knew what they are doing, perhaps the ultimate compliment, since it says in effect that when frustration reaches a peak, it is Player who is at fault, not the designers.

The chief reason we were led to consider sources other than conventional help texts was the discovery, through post-play analysis of PI/Player's journal, that considering the community-based ("bottom") nodes of the activity triangle led the PI/Player to think in ways that resulted in a break in a persistent impasse in solving a problem. That impasse was a pattern of "two-dimensional" thinking that kept PI/Player from finding the Voralberg estate and its associated resources. Once PI/Player started thinking according to the expanded notion of *division of labor*, a next logical step was to consider how many specialized tasks there are in creating; marketing/distributing; and playing games. This not only offers a considerably richer field to speculate about problem-solving resources, it substantially clarifies the relation of Players to the gaming community[7].

As an expression of the production-consumption tension on the *division of labor* node, in Figure 3 we see PI/Player as performing *only the role of PI/Player*. This is set against PI/Player's role in concert with others who do specialized tasks and elaborates the conflict on the *community* node, where individualistic qualities of PI/Player

were in tension with the need to reach out for help. At the *division of labor* node, these divergent tendencies are cast in terms of what the PI/Player does, versus what others do in performing their roles.

Summary

Activity theory represents a way to construct a model for a set of circumstances while those circumstances are still evolving. In Engeström's original conception, the first step in deciding the approach to use in analyzing a system of activity, after settling on the nodes, is to determine primary contradictions, as defined by the production-consumption paradoxes on each triangle node. This delineation is the basis upon which to advance to the next stage, where secondary contradictions are explored.

Once primary contradictions are determined, one must then go back and ask whether these interrelate with each other in a coherent pattern, both in terms of what the system "is" at a point in time and the direction it may take in the future. Once the initial system's elements are settled on, there remains not only the analysis of the activity but the eventual application of this model to the "real" activity and subsequent revision of it to accommodate circumstances related to the target activity. Activity theory does not constrain the analyst to a particular point of view, either in advance of or after analysis, but encourages ongoing adaptation of the model to circumstance, as well as the reverse.

Our next step is to look at how some of the primary nodal contradictions interact with one another to form secondary contradictions. Identification of nodes and primary contradictions leads to the central task of identifying faults/fissures in the system and simultaneously pointing to where improvements may be attempted. Given limitations in space, we concentrate on the three secondary contradictions most applicable to improving play.

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***Syberia* Puzzle Problems:**
Secondary Contradictions and Improving Performance

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Secondary contradictions emerge from the corners of the activity triangle, and they represent forces that tie two nodes, and these nodes' associated primary contradictions, together. While primary contradictions are similarly themed (here, individual effort versus community cohesiveness), secondary contradictions show what happens when one looks at the system for stress points that arise when nodes don't seem to be functioning together optimally--and this is the first step to improving functioning. As Kaptelinin and Nardi (2006) put it, this is one way to "understand cooperative work as a continuous attempt to resolve the contradiction between the common object of a joint endeavor and the potentially conflicting perspectives of the participants" (p. 88). The main idea behind the secondary contradictions is to expand the analyst/Player's perspective from local to global.

As shown in Figure 4 (by the dark, wide arrows) the first secondary contradiction is between *subject* and *rules* nodes. This is the contradiction between Player's good faith efforts and the level of the game's design quality. This contradiction came to our attention through noting the experience of PI/Player who, after many failures, finally came on the Voralberg estate. Not only was this experience the one most highlighted in journal entries, it served as the focal point stimulating description of the activity system for solving problems in general.

Another secondary contradiction is between the *instruments* and *community* nodes. This contradiction highlights tension between desire to appropriately process information from the game to achieve a solution, as against the urge to fit into the adventure gaming culture (in both its individualist and collectivist senses). This is a conflict between often considerable demands for efficient and correct processing of information (in following what developers seem to intend), against the urge to satisfy the questing need to have beaten the game, as supported and reinforced by PACAGers. One result is frustration that one does not (as compared to others) quest ahead as quickly as one might like, due to perhaps less than optimal processing of knowledge gained playing the game.
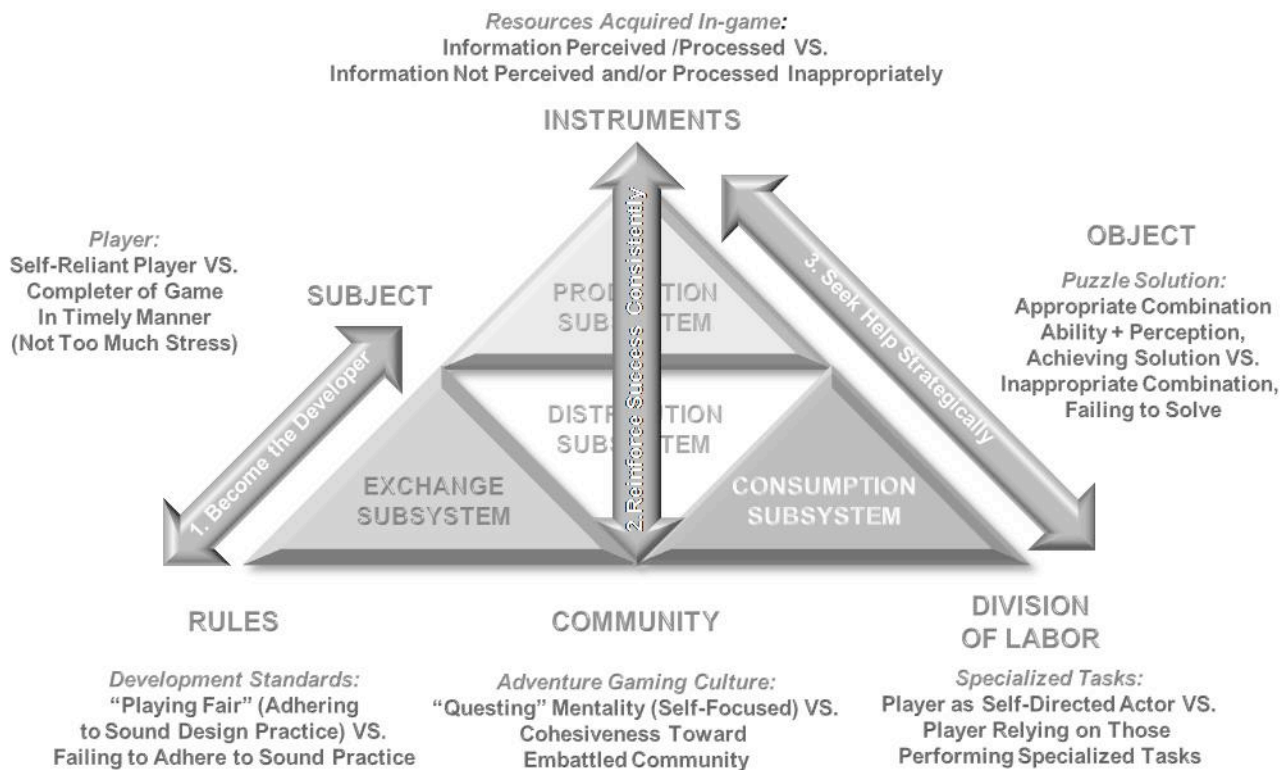

Figure 4
Triangle of Activity with Secondary Contradictions Related to PACAG Gameplay

The final secondary contradiction is between the *instruments* and *division of labor* nodes. This also relates to finding ways around obstacles to one's progress by seeking help from other sources. It centers on the tension between the appropriate processing of knowledge gained solely through one's own efforts (that is, through playing the game) and knowledge that has been gathered by other people and distributed for PI/Players to use as help should they wish. Such information is available both from widely-known sources (such as game guides and walkthroughs) and others less well known (such as game reviews; formal and informal discussion venues; advertising; and other types of promotion).

We turn now to a discussion of each secondary contradiction in more detail. Given our eventual goal of providing a ready means for improving Player performance, in these subsequent elaborations we associate each secondary contradiction with a mnemonic device for PI/Players to easily remember: (1) for the contradiction between the *subject* and *rules* nodes, "Become the developer"; (2) for the contradiction between the *instruments* and *community* nodes, "Reinforce success consistently"; and (3) for the contradiction between *instruments* and *division of labor*, "Seek help strategically." The reasons for this wording will become evident.

Secondary Contradiction 1 [Subject--Rules]: "Become the Developer"

From the first, our attempts to "get into the heads" of *Syberia*'s developers made the phrase "become the developer" a natural fit. The contradiction comes from a gulf separating what most ordinary Players know about game design, compared to what the experienced game developer[8] knows. In most cases, this gulf is unimaginably vast. The developer knows everything about how the game is put together and has tested and retested it, both in-house and through observing Players playing it. Player, in most cases, knows almost nothing about such processes (obviously excluding from this category Players who are also developers).

Here we modeled the secondary contradiction and its mnemonic device "Become the developer" on repeatedly frustrated attempts by PI/Player to find the Voralberg estate. After exhausting all the resources gained through his own exploration (*instruments*), as well as his pre-gameplay resources (*subject*), PI/Player came to a point activity theorists call a *springboard* (Engeström, 1987, p. 18). This is a "jumping off" point in the evolution of an activity system where it seems no longer possible to derive an effective solution. Out of frustration, one must go beyond one's customary resources to seek help in what lies beyond.

However, even though the principal author was forced, out of despair, to settle on this idea, it did open a spectrum of possible sources of knowledge. Potentially these might encompass everything from mundane stream-of-consciousness strategies (such as casual observation) to more extensive explorations in which Players

consult sources to enhance their understanding of game design, folding such knowledge into their playing of the game. As at least a minimal benefit, for Players to consider what might be in the mind of the developer would probably result in a better understanding of the tension on the *rules* node. This is another way to describe the distinction between designers "being fair" with PI/Players through good game design, following standards that would permit reasonably persistent, self-reliant PI/Players to solve the game's puzzles.

Secondary Contradiction 2 [Instruments--Community]: "Reinforce success consistently"

In this contradiction, the tension relates to a quandary confronted by PACAGers facing contradictory demands from the roles, first, of the playing the game as an individual, and second, of being a member of a community. Community membership, as noted previously, is actualized by Player simply playing, which makes her or him "join" at least two communities: Players of that particular PACAG, and more broadly, anyone who plays any PACAG.

How does one reconcile these two goals? An easy and useful way is to make sure every achievement PI/Player makes is immediately situated within the broader culture(s). This causes each achievement to take its place, not simply as an affirmation of PI/Player's functional success, but as a *testament to one's place in the culture of PACAG Players*. As an example, consider this affirmation from PI/Player's journal for *Syberia II*, the game in which he tried to improve gameplay, based on principles from the activity theoretical analysis of *Syberia*.

> I am pleased that the factors that my previous hard work led to have permitted me to bring
> together disparate elements of this new environment. It is reassuring to find that the importance
> of keys, well established in the original game, is carried over here. In any case, I am heartened by
> the fact that the analysis seems to be bringing the game together conceptually.

Notice how, in the above passage, a narrative of accomplishment reinforces membership in both the PACAG community and another community that, with the release of *Syberia II*, might be called a "*Syberia* community." Simultaneously, it acknowledges that what you are now reading about, an activity theoretical analysis of the first *Syberia* game, together with its application to the follow-up game, ties the two activities together under the auspices of activity theory. Also, by contemplating the two games in this way, one creates a distinct, overarching activity system of its own.[9]

The slogan and its underlying logic also point to the need to formulate affirmation *consistently*. That particular qualifier has to do with Player's feeling of accomplishment at solving a puzzle. Although such "rushes" of emotion are as common in PACAGs as solutions that stimulate them, seldom do they extend beyond an all-too-brief "warm glow" that fades, until one is stymied by the next difficult problem! The aims of the mnemonic device--

affirm immediately *and* consistently--are to ensure Player fortifies an otherwise ephemeral sense of achievement by conceiving objectively what the accomplishment means, locally and globally.

The benefits of reinforcing success consistently are (at least) threefold. First, the affirmer enhances and extends the accomplishment by linking it with others. This is an extraordinarily active and difficult mental process. It involves thinking, not simply about the affirmed achievement, but other potentially related aspects of the game. Seldom are connections between the achieved and associated tasks obvious: one has to search them out, much in the same way one identifies nodes and contradictions in activity theoretical analyses. Colloquially, one could say that each formulation of an affirmation comprises a "mini" activity theoretical analysis.

Second, the slogan relates positively to Player emotion. Simply put, reinforcing success consistently is a way for Players to "pat themselves on the back," perhaps stimulating them to remember what they have accomplished, rather than take the easier path of bemoaning how they have failed. A particularly favorable feature of the affirmation, especially when one uses it in a journal as PI/Player did, is that, once made, it can be referred to repeatedly. As one plays a difficult PACAG (though we would judge *Syberia* a game of low to moderate difficulty), one easily becomes frustrated at not grasping specific bits of information needed to move forward. Failure to obtain this information can consume Player's attention, to the point of driving out recognition of the considerable number of things that have been accomplished.

Finally, the act of reinforcing success consistently is a reward toward which Player can work. PI/Player, applying the quoted recommendation to his play and subsequent commentary on *Syberia II*, and after writing the first three or four affirmations, came to expect the warm feeling accompanying the act of affirming. In some ways, this activity is incentive to solve puzzles--one cannot write an affirmation unless one has achieved something.

Of the three recommendations, this is the only one with which we were at first uncomfortable. Affirmations so infuse popular psychology that they have, perhaps legitimately, become objects of ridicule. Once the principal author affirmed consistently while playing *Syberia II*, it became evident that affirmation is not merely a matter of making a "feel-good" utterance, but formulating a conceptual focal connection uniting previous, present, and future activity. Thus, affirmation is not an end in itself, but emerges organically from the activity to which it refers.

Secondary Contradiction 3 [Instruments--Community]: "Seek help strategically"

In this contradiction, tension is between Player's sense of identity as a self-sufficient actor, and the sense of accomplishment such a self-concept brings. As noted previously, the *instruments* node represents what one is able to achieve, on one's own, through playing a particular PACAG. Providing it does not take too much time and

energy, the best outcome is to "beat" a game without assistance, serving as a strong testament to Player's skill and persistence. A less appealing outcome is to have to admit one's comparative lack of competence (or persistence) by "cheating," that is, consulting a source which either hints at or explicitly tells one what to do in order to play all or part of a game.[10] For many gamers, to consult such sources is an admission that one is perhaps not a "real gamer," that is, not entitled to be included in the community of PACAGers. At the same time, it is curious that, given the wide availability of such sources, there should be any reason *not* to use them.

Part of the reason for the disdain may be that the typical walkthrough, if well written, often reads as if addressed to a child. It tells Player to do this, then this; which way to turn; specific locations of items and information; hints and tips on how to move; and so on. A good example is from one highly detailed (and widely cited) walkthrough for the Barrockstadt phase of *Syberia*:

> Go to the right when you leave the steps and on the next screen. When the camera angle changes follow the river to the left until you come to a barge. Talk to the people on board. The man speaks a mixture of different languages but the woman translates it into English. Use every subject[11]. The barge has a strong motor and they might be able to tow the train with the barge, but the lock is closed and the barge is stuck. But if you could open the lock it might work. They want 150$ for the job. After some bargaining they agree to do it for 100$. The problem is that you do not have 100$. You must find a way to raise the money. Better go and see the Rectors, maybe they could help.

Once such explicit information is provided, not much is left for Player to do. Indeed, in this walkthrough, highly detailed verbal descriptions are augmented with abundant screenshots, communicating help in at least two explicit forms. Given the importance placed on self-reliance, it is easy to see why consulting a walkthrough ranks low among most Players' priorities for ways to overcome an obstacle. Hence, for many PACAGers, walkthroughs are a last resort. We should remember that the goal in analyzing this system is to extend our conception of help to sources that, while more widely available, are not as criticized by the PACAG community.

We chose to phrase our mnemonic device "seek help strategically" to show how PACAGers might consider the universe of information beyond conventional (though despised) sources. The difference between these two domains is that those in the former are culturally proscribed, whereas those in the latter generally are not. Indeed, some of the latter type sources PI/Player identified before playing *Syberia II* would not even be recognized as help sources by most PACAGers and consequently might escape charges of "cheating."

Nor should one dismiss this distinction as merely a matter of labeling one source of help "legitimate" and another not. There is a significant functional difference between human activity in a walkthrough, centerpiece of a largely passive process[12] in which Player is told precisely what to do; and to "seek help strategically," an active

process requiring considerable effort, especially given the large number of sources for such help. To seek help strategically, one has to look for clues in different sources, instead of having their significance spelled out.

As PI/Player played *Syberia II*, some sources from which he sought help were extraordinarily mundane and perhaps ubiquitous among PACAGs. An interesting one we never previously considered was to turn on screen titles. In most PACAGs, there is an option to either rely on the sounds of the game to convey spoken words and/or sound effects or to turn on titles that show in written form what characters are saying or sounds they hear (a designer accommodation to Players who might be hearing impaired). The principal author accidentally stumbled on this while trying to decode some of the less understandable terms in *Syberia II*, a game with much exotic terminology. In most cases, to both see and hear words is informative, leading to an increase in one's comfort level (a not insignificant benefit) and on occasion clearing up misunderstandings that could distract attention from more salient features of the game. As part of "the game itself," this is not considered "cheating."

When we came up with the idea of seeking help strategically, as sources we had in mind marketing and promotional communication such as trailers, advertisements, reviews, and the like. While we still believe these and similar forms of communication could help Players, they barely figured in PI/Player's playing of *Syberia II*. A more unexpected feature that did play a major role was the journal PI/Player kept while playing the original *Syberia*. This highly unconventional source is of course an artifact of our research. Indeed, information in the earlier journal proved so useful that, of roughly a dozen instances of seeking help strategically in *Syberia II*, only two are *not* from the original *Syberia* gameplay journal.

That the first journal proved such a useful source for solving difficult problems in *Syberia II* is dramatic testament to the power and flexibility of activity theory. To illustrate, consider the passage below from the *Syberia II* journal. To prepare this, you should know that one of the keys to both the first and second *Syberia* games is that there exists a lost tribe called Youkols who dwell in Syberia. Syberia and the Youkols are thought by "legitimate" anthropologists and others to be fairy tales manufactured by parents to entertain and comfort children. While *Syberia* does refer to Youkols, the greater part of how they are described, particularly their culture, is not fully revealed until *Syberia II*, in which Kate makes the journey to Syberia with the childlike Hans Voralberg, who has believed all along that Syberia, the Youkols, and especially the mammoths that populate the land, are all real. Others referred to in the quotation below are: Malka, a young girl with information Kate needs to gain access to a monastery that in turn holds the human and herbal resources to heal the ailing Hans; and the Bourghoffs, two evil brothers who have gasoline Kate needs to start a coal conveyor that provides fuel to get the train moving toward its eventual destination, Syberia. *S1* is our designation for the original *Syberia* game.

Malka continues: the Bourgoffs are liars and thieves. One is small, smells, and walks like a penguin, and the other is big and stupid--a "yookie." Okay, that sounds like something I heard before. ***Seek help strategically:*** check back with the journal for *S1*. Yes, there it is: "Okay, she meets Professor Pons--another long conversation (this really is an academic institution!). She learns of Hans's obsession with the mammoth toy, which is said by Pons to be a sacred object of a legendary tribe (the Youkols) in Syberia (also legendary)." (Entry 8, Session 5) The "Youkols" are a tribe: is "yookie" an abbreviation of that? Would they carry a narrative element that far across the second iteration in a series of games? And, even more puzzling: why on earth would I have re*mem*bered that? :-)

It would be hard to invent an example that so precisely illustrates the multiplex and interrelated nature of human activity. The overarching structure of activity theoretical analysis encompasses both the playing of the original game and the journal tracking PI/Player's progress through it. More, the symbol "Youkol" is an element common to both games, reflecting a conscious decision on the part of developers to connect the experiences of playing the two games and have some Players perhaps consider the games as phases of a single activity. Although such decisions are based on aesthetics, they are also clearly made with marketing in mind. *Syberia* was one of the best-selling PACAGs in gaming history, so the decision to extend the story line into *Syberia II* makes an excellent selling point. It takes a world gamers have enjoyed "being in" and inviting them in again. PI/Player, by using our activity analysis of the original *Syberia* journal as a source to construct recommendations to improve play in *Syberia II*, made conscious connections to the original analysis in systematic ways that would never occur to a casual recreational Player. The web of activity proves thus to be an ever-expanding system far too complex to describe by hypotheses and imposing limits on relevant variables. To contemplate even this comparatively narrow "slice" of activity is to be humbled by life's complexity. Like any form of communication, the apparently simple act of using information and reasoning to solve a video game puzzle turns out not to be simple at all.

Considering how it was derived and what it accomplished, *seek help strategically* could be viewed as both the most and least rewarding of the three principles. It was the most rewarding because it linked activity theoretical data in both game journals, thus providing an extraordinarily rich source of ideas concerning game design. Indeed, between playing the first and second games, PI/Player would almost certainly have forgotten information that proved perhaps most consistently useful in overcoming obstacles.

At the same time, this secondary contradiction was the least rewarding in that, once PI/Player began to find such a rich source of ideas in the original journal's entries, he no longer perceived the need to seek other kinds of information (a feature of the second journal not evident until long after the game was completed--not, in fact, until we began writing this paper). The result was a lack of development in ideas that originally drove the first two phases of the analysis. The original options about possibly different unconventional sources lay largely fallow.

This is a point that needs to be addressed in future research. One approach might be to play/analyze a different PACAG, that is, one that is not a *Syberia* game (as of now, in any case, there are no other *Syberia* games). Without a preceding game--and particularly without a detailed journal to refer to--the analyst/Player would be forced to consider other sources of information mentioned in the analysis of primary contradictions.

Connecting the Activity Systems: Next Steps

To call this a work in progress would be to vastly understate the case. While the overall goal of improving gameplay in *Syberia II* was clearly achieved (details to follow momentarily) there were some unanticipated trajectories. A great advantage of activity theory (though one that often initially causes practitioners headaches) is its flexibility in meeting emergent circumstances. Activity theory does not denigrate, but acknowledges and even celebrates the incomplete nature of the provisional activity systems it describes. Analysts realize even a conditional picture of a system that has been worked out is but a selective snapshot of activity. That activity, *in situ*, comprises infinitely myriad details that could never be encompassed by any act of communication, least of all by words and a triangular diagram. Activity theorists accept this and with it uncertainty about where the analysis is going, as it continues to evolve, realizing that the job of describing the system can never be finalized.

Fortunately, this project is based on a measurable, functional outcome allowing a determination, at least approximately, of the effectiveness of recommendations derived through activity theoretical analysis of *Syberia*. One ancillary goal was to show how gameplay could be better understood in an as yet unplayed video game, chosen to be as similar as possible to *Syberia*. Hence, the only measure of change in ability, as the result of applying the recommendations, is the effects on gameplay in *Syberia II*. Looking at this change, one would be especially interested in questions such as whether the second game was finished faster and/or with less trouble, as well as whether some of the frustrating traps and pitfalls encountered in the first game could be avoided.

To those adopting a traditional perspective toward methodology, "measurement" as just described presents difficulties. The most trenchant and overt problem is that one is comparing two different games (obviously, there would be no point in replaying the first game to see if problem solving is faster or less troublesome--that game would be too familiar to Player). This means that, despite similarities, there are bound to be many ways in which the games are not similar.

To take one of many dissimilarities, some reviewers found *Syberia II* to be the more difficult of the two games. The subjective judgment of PI/Player is that the first *Syberia* game, being more linear, is easier. To solve nearly all the puzzles in *Syberia*, all one usually need do is, first, find the right resource(s) (which often requires

considerable hunting) and, second, the appropriate point(s) to apply these resources. In *Syberia II*, the puzzles often required more creative linking by PI/Player. In the latter game, it was seldom enough to simply find and apply resources, but to put them together in ways not immediately obvious. In this respect, *Syberia II*, but not *Syberia*, seemed like *The Longest Journey*, another enormously popular and well-received, though considerably more difficult, PACAG.

These factors make it difficult to discuss improvement through such conventional procedures as comparing length of time and ease of play. With respect to activity, it is more useful to look at the *Syberia II* journal--part of the dependent variable, you could say--to compare how easy or difficult it was to solve problems. However, this introduces what for some may be a troubling amount of subjectivity on the part of the researcher (who, in this particular study, is also the subject, and hence doubly susceptible to the perils of bias). In the following, we confine ourselves to what PI/Player observed about his own gameplay, which, given the visceral nature of Player involvement in video games, may in fact be a better way to approach this kind of project.

Despite difficulties "running the numbers" on the games, some statistics (taken with an appropriate degree of caution) are revealing. Table 1 (below) shows key comparisons, in terms of time taken to play the games. Although it took more sessions to play *Syberia II* (17, as against 15), the time was about ninety percent of that for *Syberia* (32.51 hours, as against 36.35 hours).

Table 1
Session Detail and Time Taken to Play *Syberia* and *Syberia II*

	Syberia	*Syberia II*
Number of Sessions	15	17
Shortest Session	20 minutes	35 minutes
Longest Session	4 hours, 40 minutes	4 hours, 55 minutes
Total Time Spent	36.35 hours	32.51 hours
Average Session Length	2 hours, 4 minutes	1 hour, 54 minutes

A couple of considerations make this approximately ten percent reduction in overall gameplay time more noteworthy. First is that the journal for *Syberia* is considerably shorter than that for *Syberia II*, meaning that the second journal took much longer to compose.[13] The first journal runs about 47 single-spaced pages, the second almost twice that length, about 79 pages. Furthermore, due to an unfortunate error recording/restoring the commentaries, the *Syberia II* journal is missing its sixth session, a moderately lengthy gameplay episode of about 2 hours and 19 minutes.[14] Had that session been included, *Syberia II*'s journal would probably have been *more than twice* the length of the first journal. That the second journal is lengthier is due to increasing attention paid to

material linking the two game commentaries together, particularly with the inclusion of commentary on how recommendations derived from the first game were being used to improve *Syberia II* gameplay.

A second reason the second journal was longer may have been that PI/Player had become more adept at writing about games in the *Syberia* series. In the first journal, several passages reveal that PI/Player had scarcely a clue as to what was going on. By the time of the second journal, however, he not only had an increased facility with the vocabulary associated with the virtual "worlds" of *Syberia*, but more importantly, better grasp of the vocabulary of activity theory itself, as applied to *Syberia II*. This included most notably descriptors assigned to the nodes and contradictions. In short, for the second journal, PI/Player had a lot more to talk about.

More subjectively, PI/Player found gameplay in *Syberia II* considerably less stressful than in *Syberia*. Although it is very difficult--impossible, actually--to find consensus among game reviewers (what one perceives as difficult, the next dismisses as far too easy), we agree with those reviewers who claimed *Syberia II* requires more creativity in linking resources and relies on what could be considered a higher (more difficult) style of problem solving. Despite the possibly greater level of difficulty, however, in *Syberia II* PI/Player was almost never derailed by troubling situations like the "missing" Voralberg estate from the first game.

One reason for a greater comfort level with the (possibly) more difficult *Syberia II* is that in the latter PI/Player sensed access to a far greater repository of resources. An important advantage to activity theory is that using it expands the realm of possibilities for what can be used in that activity, giving one considerably more to work with.[15] Put another way, in *Syberia II*, with the three principles in hand, PI/Player *perceived* considerably more tools than in the first game. This had important practical implications: when conventional tools, largely available to other Players, failed to work, PI/Player *still had resources to turn to*. More importantly, in almost every case all it took to solve a problem that seemingly had the potential to develop into an impasse was simply to apply one of the three recommendations. In some cases, breaking past the incipient obstacle was absurdly easy, in others far more difficult. However, in no case did these cost even remotely as much time and effort, nor cause as much distress, as did several similar situations in *Syberia*.

Another reason *Syberia II* seemed easier to play is that, as PI/Player played through the same kinds of situations that caused him distress in the first game, there was a feeling of participating in a greater plan, on a grander scale, than might have occurred to someone just playing the game "by itself." Many factors are involved in this more encompassing view, including, at minimum, play of the first game; its activity theoretical analysis; derivation of suggestions, as well as their use in the second game, its play, and its analysis; and the sense that

the play/analysis of the two games were evolving into an overarching, multiplex activity system which can develop its own trajectories when applied to PACAGs in the future.

Despite the enormous effort this project required, an approach like this toward the study of video games is long overdue. So long as we insist on separating Player and analyst, and on treating video games as just another form of mass communication that can be analyzed according to variables we apply in other research, we will fail to grasp the true experiential nature of video games. Video games are artifacts of modern communicative life that cannot be dismissed as trivial or inconsequential, nor treated as separate from Players. We are not arguing that video games can be understood only from the point of view of Player and commentator, as we have chosen to do here. Nevertheless, we do feel that the person who tries to "study" video games without being a Player, at least of some video games, risks misunderstanding this vitally important form of new media and of distorting any findings to such a degree it would be obvious to the real experts, the *Players*. It is hoped that that the current project, especially given its emphasis on dynamic activity evolution (as against static understandings based on conventional experimentation, observation, and ultimately the scientific method) will constitute a first step in forging just such a contextualized understanding.

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[1] A "cutscene" is a video presentation placed in a game to provide continuity, during which Player has limited or no input. Most cutscenes (except interactive ones) can be skipped. Game developers, perhaps because of the linking of video games with violence, increasingly prefer to call these "cinematics." We like "cutscene" and have retained the term here.

[2] In many activity theoretical studies, such elements as mental models, previous experience, and the like are thought more appropriately assigned, not to the *subject* node, but to the *instruments* node. We take the position that these qualities should be considered innate to Player (*subject*), and what Player learns through playing the game should be considered *instruments*.

[3] The very first frames of the opening scene depict a marching automaton beating a funeral drum, while in the background is a building with part of the name "Voralberg" painted on the brick surface. Not only that, as the procession passes, one can see the train station (later found on the estate) in the background, *and*, as if this weren't enough, Kate is shown walking across the bridge from the toy factory area to the side of the street where the hotel is, with the image of the factory behind Kate as she prepares to enter the hotel. In short, from the very first, if one is paying attention, the existence and location of the Voralberg estate is confirmed in at least three separate ways.

[4] This has led us to a kind of "first commandment" for PACAG play: carefully watch cutscenes, especially the initial scene. If the game permits, one should replay these scenes. Both *Syberia* games are well-known for high-quality cutscenes, several of which are evocative and startlingly beautiful. We (and many reviewers) always thought this was the reason Player can, from the main menu, access the cutscene associated with every completed level. However, it might also be because the designers intend the cutscenes to serve an informational function, not just an aesthetic one. If the game is well designed (as both *Syberia* games are), everything Player needs to know about the game's environments for a given level is probably contained in the entry cutscene.

[5] We assume developers want Players to solve the game in the way they specify, via the way they program the game, but of course it is impossible to know this.

[6] As an adventure game, *Syberia* can be justifiably called a classic. Reviews on its initial release were highly positive; on the review summary website *metacritic.com*, *Syberia* rated 82 out of 100 (*Metacritic*, 2002), well in the "generally favorable reviews" category (75-89), with 11 of the 27 reviews cited above 89 (in the "universal acclaim" category) and all but four of the remaining reviews in the "generally favorable" category. Only one review was negative. In perhaps the ultimate test of a game's quality, its followup title, *Syberia II*, achieved nearly as high a score on *metacritic.com* (80 points) and was truly a sequel in that it picked up the storyline where it left off and completed it.

[7] Although it may not be evident, delineating an activity system is an incremental process, in which nodes and contradictions are formulated, accepted/discarded, and/or modified according to how the activity system as a whole has to be fine-tuned. In other words, depiction of an activity system is gradual and, in contrast to the typical process in conventional theory application, does not arrive fully formed as a tool to aid in analysis. The modification of the *division of labor* node, referred to here, is a good example.

[8] For convenience we can speak of this entity in the singular, even though for games as sophisticated as *Syberia*, there are a large number of professionals on the development team.

[9] Although we do not get to it in this paper, a complete analysis would include looking at quaternary contradictions, or contradictions between "discrete" activity systems kept conceptually separate in preliminary analysis.

[10] An unobtrusive measure of the gaming community's attitude toward hints and walkthroughs is that, on gaming websites these two forms of help are nearly always grouped with "cheat" codes (sequences of computer keys and console buttons that can offer enormous advantages-- for example, "unlimited health"--to Players). "Cheats" get that name because they are clearly resorted to Players who cannot beat the game under conditions defined by developers. That walkthroughs are included by gaming websites in the same category as cheats perhaps shows the disdain of gamers toward those who need such help.

[11] This odd phrase refers to the method by which Kate "converses" with NPCs (non-playing characters). When one clicks the "speak" icon a memo pad with conversational topics--"subjects"--appears on the left side of the screen. "Use every subject" means exhaust all conversational topics before moving on.

[12] It is "largely" passive because, even if one consults a walkthrough, one still has to execute its instructions. For a truly damaging blow to the ego, try consulting a walkthrough and then *still* not be able to solve a puzzle, an embarrassment PI/Player endured in the most difficult PACAG he ever played, *Schizm: The Mysterious Journey.*

[13] Too late, we realized that merely recording the total amount of time devoted to each session was not an accurate way to estimate gameplay time, since much, indeed most, of that time is taken up writing the journal. Although it would have been more trouble, PI/Player should have separated the time spent on play and writing. This problematic will be addressed in future work with this model.

[14] The time taken to play Session Six is included in the total time to play the game; this is because the records for time taken were recorded in a separate document.

[15] Obviously this is a matter of perception. The resources were "there" all the time, but process of applying activity theory is what serves to bring *awareness* of "hidden" resources out into the open.