Communication and Critical/Cultural Studies
Vol. 1, No. 4, December 2004, pp. 297–312

Routledge
Taylor & Francis Group

The Gamework

Judd Ethan Ruggill, Ken S. McAllister & David Menchaca

This article outlines the gamework*, a neologism designed to help scholars attend to the various kinds of work involved in computer game development, play and analysis. This work is integral to computer game artifactuality yet tends to be obscured by the aesthetic, narratological, mechanical, and economic aspects of games and gaming. We offer the gamework as a means for theorizing computer games as a form of culture that motivates work as much as (if not more than) play. Specifically, we point to how computer games participate in (1) labor culture; (2) an emergent culture determined by a work/labor/play dialectic; (3) artistic culture; and (4) cultural criticism.*

Keywords: Games; Culture; Work; Play; Art

> The games of a people reveal a great deal about them.—Marshall McLuhan, 1964[1]

According to the Entertainment Software Association:

- Fifty percent of all Americans age six and older play computer and video games.
- The average age of a game player is 29 years old.
- Thirty-nine percent of game players are women.
- Computer and video game software sales grew eight percent in 2003 to $7 billion and are expected to show strong growth over the next few years.
- In 2003, more than 239 million computer and video games were sold, or almost two games for every household in America.[2]

These are gaudy numbers, to say the least. And yet, they speak a profound truth—computer games are now as American as apple pie.[3] Americans play games at home, at work, at school, on vacation, in bus stations, on airplanes, in restaurants,

Judd Ruggill, Ken McAllister, and David Menchaca are members of the Learning Games Initiative, a University of Arizona-based research collective that studies, teaches with, and builds computer games. Correspondence to: Judd Ruggill, Department of Media Arts, Marshall 249, University of Arizona, Tucson, AZ 85721, USA. Email: jruggill@email.arizona.edu. The authors would like to thank Caren Deming, Ron Gard, and the two anomymous CCCS readers for their excellent suggestions on earlier versions of this article. Thanks also to Joseph Chaney for his interest and support.

ISSN 1479-1420 (print)/ISSN 1479-4233 (online)
DOI: 10.1080/1479142042000270449

on cell phones, over the Internet—everywhere. Games are truly ubiquitous, and their appeal transcends gender, class, race, and age.

Not surprisingly, this ubiquity has sparked ferment in the field of game studies. Academic journals and presses are starting to publish more game-related articles and books, universities are beginning to include game studies in their curricula, and popular presses are producing nostalgia books on game history and aesthetics. What is surprising, however, is that so much of the critical and popular work to date on computer games focuses on violence or the history of the medium. There are few "artifactual" studies—that is, studies that examine computer-game formation as a material element of culture—and those that do exist deal primarily with the process of turning an idea for a game into a salable product. Granted, in order to understand computer games as cultural artifacts scholars must address questions of production and consumption, but what about games themselves as culture (or, as Clifford Geertz might say, as "webs of significance")?[4] We believe the time has come to examine computer games as artifacts of human desire and expression, artifacts that have become so culturally pervasive and potent that they work to create those desires and expressions as well.

Part of the reason for the paucity of artifactual game studies of this sort in the US lies in the nature of the game medium itself.[5] Just as film differs from television, and prose from poetry, computer games are unique and thus require their own theoretical modalities. Computer games need to be treated as computer games, not as "electronic texts," "interactive films," "entertainment software" or any other sub-medium or permutation of an extant artifactual form.[6] Borrowing critical lenses from other fields, therefore, while helpful is also problematical. Such lenses can obscure games' uniqueness and yield unsatisfying if not inappropriate results. Game scholars are thus faced with the formidable challenge of synthesizing new theoretical modalities, a challenge that has so far proven difficult to meet.

Toward that end, we offer the *gamework*, a neologism designed to help scholars explore computer games as culture. As a term, the *gamework* is conceptually reminiscent of Thierry Kuntzel's "film-work," which in turn harkens back to Sigmund Freud's "dream-work."[7] In "The Film-Work," Kuntzel argues that film scholars must "refuse the manipulation imposed by the [filmic] spectacle in order to ask how that manipulation functions."[8] Abstracting films from their context as entertainment and re-imagining them as "works," argues Kuntzel, allows scholars "to rewrite [filmic] spectacle in the form of a text—to scrape away layers of referential opacity masking the work of signification."[9] Transforming films into "works" illuminates their signifying practices. We mean *gamework* to do precisely the same thing for computer games.

We also mean our neologism to help scholars go beyond merely "rewriting game spectacle in the form of a text." Though materially identical, a computer game and a *gamework* are substantively different. A computer game consists of the following four characteristics: (1) digital instructions that mediate interactions among players, rule sets, and developers' proffered multi-sensory play scenarios; (2) the storage and processing components within which these instructions are executed; (3) the documentation and packaging that sell and explain the game play; and (4) the player(s). A *gamework*, too, consists of these characteristics but also includes critical conscious-

ness about game production, distribution, and consumption. Our neologism is designed to recall and amplify the work that is so much a part of game development, play, and analysis. Game play, for example, requires all kinds of work including concentration, endurance, and coordination. Game development is similarly labor-intensive, with commercial games produced over years and by the sweat of dozens of programmers, testers, and others. Unfortunately, the work of development and play is largely obscured by the aesthetic, narratological, mechanical and (most intensely) economic aspects of games and gaming. We offer the *gamework* as a way to bring that work and the work of game-oriented cultural analysis to the fore.

In the following article, we will describe the critical lens of the *gamework*. We will argue that understanding games as artifacts means apprehending them in ways that highlight, rather than hide, their complexity and uniqueness. We will use the concept of the *gamework* to depict a computer-game experience that includes the various labors involved in game development, play, and analysis. In short, we will delineate the neologism as a way to theorize computer games as cultural artifacts, artifacts that motivate work as much as—and sometimes even more than—play. The term *gamework* signifies much more than how people *play* in industrialized, computerized, capitalistic early twenty-first-century societies; it also embodies how they labor, relate to one another, and rest, as well as how they make sense of the present, remember the past, and imagine the future.

We begin our description of the *gamework* by examining some of the ways computer games participate in labor culture. We then suggest that computer games blur the cultural signs and differences between work, labor, and play. Finally, we consider how computer games engage, and are engaged in, cultural production as works of art and subjects of criticism.

A Crew of Thousands

Like film and television production, commercial computer-game development is labor-intensive. Production time averages 18–24 months and can literally require a crew of thousands.[10] In addition to the cadre of programmers who design and code a title's engines and interfaces, game development involves testers, producers, distributors, attorneys, accountants, reviewers, salespeople/proprietors, advertisers (with their own teams of graphic designers, copy personnel, proofreaders, producers, and distributors), and manufacturers (to produce the technology on which games are developed and distributed, as well as the packaging in which games are sold). Whereas such labor is regularly recognized in film and television (via credit sequences that bookend their narratives), the computer-game workforce is often elided. Computer games tend to collapse questions of labor and authorship down to a particular designer, production company, platform, technical feature, or genre. None of the online titles available from PopCap Games©, for example, feature information about the games' authors.[11] Neither does the company's homepage, with the exception of the "Company History" section, which lists the three people who started PopCap and defines the company's labor pool as "nearly twenty employees and a host of contractors and development partners."[12]

This compression of labor (or laborers, rather) effaces not only the contributions

of the rank and file, but also the contestation and compromise associated with collaborative work. PopCap's games—and the games of virtually every other development house—thus have an integral part of their meaning-making process elided. The elision of many of the people who work on computer games reinforces the cultural stereotype that games are made by hyper-talented but antisocial computer geeks, masking what is usually closer to the truth—computer games are big business and are made by teams of highly trained artists and engineers supported by massive corporate networks. Games from this perspective are, in other words, primarily products and proliferators of corporate, not artistic, culture.

Even big budget games are mythically fixed by their producers within a quaint and bygone development culture. The International Game Developers' Association's 2003 Game of the Year, *Metroid Prime*, for example, is far more technologically and narratologically advanced than any of PopCap's games, and its budget and distribution network exponentially larger. Rather than just a few people, *Metroid Prime*'s in-game credits list just over one hundred workers, from the executive producer to "additional contributors." Engineers, artists, musicians, and testers are noted, as are designers, editors, writers, and translators. Support staff for all these people, however, are not listed; nor are the people to whom pieces of the game—for example, textures and voices—were outsourced. Hollywood films, by contrast, detail their workforce slavishly, regularly listing outside contractors and even personal assistants in the closing credits. No doubt, this has much to do with the strong presence of labor unions in Hollywood, something computer-game developers are just now beginning to discuss openly.[13] Thus, one point of imposed silence in game production—regardless of the intended audience and scale of distribution—occurs at the level below middle management. This silence threatens to become deafening as game-development studios continue to expand and adopt management structures modeled on traditional factory hierarchies in order to meet increasing demand for computer games.[14]

Another point where the work of computer-game development is effaced is the moment following the burning of a game's master disk. This production milestone, referred to in the industry as "going gold," marks the point at which a game has been deemed good enough to manufacture, package, and ship. Going gold is the nexus where a game officially exits the development culture and begins taking on all the cultural weight marketing departments and production budgets can amass. Like virtually all computer games, *Metroid Prime*'s credits list no one involved with the game after going gold, yet it is at precisely this moment that massive labor forces are brought to bear. Stampers, truckers, pilots, dock workers, secretaries, mail carriers, and thousands of other workers handle the game after it has gone gold and in many cases carry considerable responsibility for the title's success. The courier, for example, who fails to deliver a gold master to the duplication factory on time may well cause the game to lose its slot in the factory's production cycle, a mistake that will almost certainly cost the game's development house thousands of dollars in rescheduling fees and lost revenues, and likely incur upon the courier considerable financial and reputational penalties.

Unearthing the work (and workers) involved in computer-game development is one of the primary techniques for re-imagining games as *gameworks*, and thus apprehending games as culture. Like other media artifacts, how games "mean" is shaped by the ways they are produced, and even how this production is nominated and/or elided. Since the concept of the *gamework* is at heart as much a refusal as an acknowledgement of the "manipulation imposed by … spectacle," employing the neologism requires a genealogy (or at least the recognition) of the material production that is so often obscured for the sake of spectacle. Recalling the labor that makes computer games possible—possible to be designed, made, distributed, purchased, and played—is also key to connecting game production to game consumption. Game advertisers, for example, rely on celebrity in much the same way as do their film and television counterparts. For at least a decade, game-marketing agencies have credited celebrity game developers both in games and on game packaging. Players have learned to associate Peter Molyneux, Warren Spector, Roberta Williams, Chris Crawford, John Romero, and Shigeru Miyamoto with good/interesting/important work, and their expectations are carried forward into the play experience. The creation of these expectations influences how consumers play and judge games, which translates through word-of-mouth into sales. The mythic cultural cachet of the developer as "artiste" is thus maintained, albeit at the expense (literally) of the many other workers whose experience of the game industry is no different from that of workers in other creative-product industries, from book publishing to four-star restaurants.

Hard at Play

Like game development, game playing, too, is labor-intensive. Gaming requires strategy, skill, endurance, coordination, concentration, imagination—in essence, hard work. Players must not only decode the "frameworks of knowledge" created by developers, as Stuart Hall might say, but in fact *encode* these frameworks (or parts of them at least), shaping game worlds and their meanings according to strategy, taste, style of play, and other broadly acquired cultural responses to all that games have to offer.[15] Gamers actively help create the narrative, thematic, and ideological structures that determine the artifactual experience. In so doing, gamers also reproduce or consent to ideologies embedded within games themselves. This, too, is a kind of work. *Warcraft III*, for example, offers players considerable freedom to devise strategies for territorial expansion. However, because expansion is integral to the game's play, players must accept it as a primary goal, regardless of their inventiveness. For some, accepting this goal is difficult and takes work, and it is worth pointing out that seeing *gameworks*—not just games—is particularly hard work for players.

The work of play promises to become evermore demanding as programmers implement increasingly sophisticated artificial intelligence (AI) engines that preclude even developers from fully understanding how their games will unfold in the face of players' individual and collective initiatives. As the work of "creating play"

changes—from designing games with linear and predetermined plots to designing games that generate plots dynamically—gamers will no doubt embrace this process and find themselves playing differently. In 2004, dynamic games remain rare, largely due to technological and market constraints. Games such as *The Sims*, *Black & White*, and *Neverwinter Nights* may be considered progenitors of the move toward building games on sophisticated AI engines, focusing as they do on world and character development rather than plot advancement, but even these titles are limited in their flexibility and responsiveness to the work of players. Massively multiplayer online games (MMOGs) remain the standard for developer/player co-creative work, primarily because the majority of MMOG agents are other people, not computer-controlled avatars. Developers of MMOGs are already struggling with the challenges human agents create because this agency makes it impossible for developers to predict what people will do when they get together in a game world that has no predefined plot and that dictates only one objective to players: keep your character alive. And when the work of players includes creating new virtual cultures within the broad parameters of extant and varied technologies and global cultures, the *gamework* that gives rise to such effort must be approached as perhaps the most complex cultural artifact yet produced.

At a simpler level, games naturally also require work to learn how to play. One is not simply born with the necessary skills to snipe a virtual opponent from a distant hillock, nor is the use of an Xbox game controller intuitive; such skills must be learned and practiced. In fact, because games differ in interface and play, game skills must often be relearned for each new title. Some games have shallow learning curves, requiring players to master only three or four new concepts, motions, and play-logics. *Space Invaders*, for instance, uses only a horizontal axis of motion (left–right joystick action), a fire button, and three play-logics: missile timing, alien timing, and alien advancement.

Newer games typically have steeper learning curves. Flight games, for example, represent the most complex computer-game genre, often requiring players to master more than a hundred controls. Knowledge of three axes of motion; speed controls; take-off, flight, and landing procedures; tracking and evasion protocols; weapon selection; rules of engagement; and mission prioritization are de rigueur in titles such as *Jane's ATF* and *Wing Commander V—Prophecy*. The instruction books for such games are often intimidatingly thick, the fan communities small, and their members detail-oriented. Few people want to work that hard for fun. In games such as these, players must not only work to understand game play—what must be done in order to win—but also work to understand the complex technologies and rule systems by which a game's objectives are to be met. Flight games and other simulations actually draw on pre-existing subcultures to form new ones, and these new subcultures in turn encourage new industry developments, new jobs, and new appreciations for the people who do the real work these games simulate.

Regardless of a game's complexity and the steepness of its learning curve, however, a player's work interacts with the computer game's work to create the user experience. In other words, because players work hard, games must also work hard

to keep players engaged. It is this phenomenon in particular that drives the creation of evermore sophisticated games and expands the computer-game industry. Hard-working gamers increasingly demand harder working games, and thus game developers must work harder to meet those demands in one way or another. This game/work cycle is largely responsible for the fact that the computer-game industry consistently drives the advances made in home and mobile computing. To put it in broader cultural terms, the work of gamers has contributed to the fact that many TV programs are now broadcast in high-definition, that websites are visually rich and highly interactive, and that real commercial aircraft are capable of taking off and landing autonomously.

Contributions like these come at a price—and to gamers no less. Most computer-game players must work real jobs in order to pay for their playful pastimes. Billions of dollars are spent on computer games and game systems every year, money that comes primarily from wages earned from non-game-related work. While the number of people who work primarily to pay for their gaming habits is probably very small, it is certainly the case that even casual gamers are increasingly willing to spend a significant percentage of their wages on games and game components. According to the Entertainment Software Association, game sales have increased at least 5 percent in seven of the last eight years and are expected once again to show strong growth in 2004.[16]

In addition to recalling the work involved in computer-game development, then, re-imagining games as *gameworks* also requires an archaeology of the physical and cognitive efforts involved in game play. Recognizing games as culture means recognizing the learning inherent in coming to understand and master the objectives, parameters, physicalities, and economies that govern the work of play. Indeed, it is precisely this learning that shapes game development and thus game artifactuality. In *The Art of Computer Game Design*, for example, game designer Chris Crawford notes that

> [g]ames without smooth learning curves frustrate players by failing to provide them with reasonable opportunities for bettering their scores. Players feel that the game is either too hard, too easy, or simply arbitrary. Games with smooth learning curves challenge their players at all levels and encourage continued play by offering the prospect of new discoveries.[17]

Crawford suggests a number of design strategies for smoothing learning curves, including preserving "the illusion of winability" and offering players only "limited information." Ultimately, argues Crawford, these strategies and the learning they encourage are what define computer games and even game designers themselves. He explains that

> [m]ethods and ideals should not be used in grab bag fashion, for taken together they constitute the elusive element we call "technique." Technique is part of an artist's signature, as important as theme. When we listen to Beethoven's majestic Fifth Symphony, or the rapturous Sixth, or the ecstatic Ninth, we recognize in all the identifying stamp of Beethoven's masterful technique. If you would be a computer game designer, you must establish and develop your own technique.[18]

Part of theorizing games as culture, then, involves the work of identifying "technique," an eye for which one can only develop by becoming familiar with a variety of game styles, forms, periods, genres, modes, and methods of development.[19]

Playing at Work

In a recent issue of *Wired*, Julian Dibbel claims that the virtual workforce of MMOGs such as *Ultima Online* and *EverQuest* "generates more than $300 million in real wealth each year."[20] Players are not only selling and bartering within the confines of these MMOGs, but are auctioning off chunks of virtual real estate and game-related items on real-life websites such as eBay. More interesting than this "traffic in virtual goods" or the money it produces, however, is the fact that gamers are actually "playing" at work. That is, games such as *Ultima Online* require gamers to labor as part of game play. In order to earn the money for a larger house in Britannia (*Ultima Online*), for instance, gamer Troy Stolle "spent six months doing nothing but smithing: He clicked on hillsides to mine ore, headed to a forge to click the ore into ingots, clicked again to turn the ingots into weapons and armor, and then headed back to the hills to start all over again."[21] This virtual work was, of course, in addition to Stolle's real-life job as a carpenter. As Dibbel explains:

> Every day, month after month, [Stolle] was coming home from a full day of bone-jarringly repetitive work with hammer and nails to put in a full night of finger-numbingly repetitive work with "hammer" and "anvil"—and paying $9.95 per month for the privilege. Ask Stolle to make sense of this, and he has a ready answer: "Well, it's not work if you enjoy it."[22]

All this "work" raises a provocative question: At what point does playing a game become work?

According to Marx, work is effort expended by people in the unavoidable process of creating the materials they need to live. Work, as Marx puts it, "is the universal condition for the metabolic interaction between man and nature, the everlasting nature-imposed condition of human existence, and it … is common to all forms of society in which humans beings live."[23] But work becomes "labor" when effort is expended to create materials that are to be bought and sold, rather than used immediately and locally. In the material world, then, the difference between "work" and "labor" is fairly clear. The intangibility of computer games, however, makes such distinctions considerably murkier. When Stolle says "it's not work if you enjoy it," we can see from the context of his words that he means "it's not *labor* if you enjoy it." Marx would likely agree, as Bikhu Parekh suggests when he observes that Marx "aims, somewhat optimistically, to transform all labor into work, into a freely chosen activity that expresses its agent's distinctive powers and results in durable objects."[24] And Marx himself invokes "play" as an integral component of work—and specifically not labor—when he describes the moment when work degrades into labor:

> Apart from the exertion of the working organs [i.e., one's hands, back, and legs], a

> purposeful will is required for the entire duration of the work. This means close attention. The less he [the worker] is attracted by the nature of the work and the way in which it has to be accomplished, and the less, therefore, he enjoys it as the *free play* of his own physical and mental powers, the closer his attention is forced to be.[25]

In the context of computer gaming, work becomes labor when players' attentions are not so much captured as coerced.

This is not to say that playing at work is necessarily "fun." As Johan Huizinga notes, play is

> a free activity standing quite consciously outside "ordinary" life as being "not serious," but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.[26]

As gamers play at work—even work that seems as laborious as Stolle's, or as driven by ruthless profiteering as that required by *Railroad Tycoon*—they are nonetheless *playing*.[27] Under capitalism, work entails trading labor power for subsistence, that is, people must labor to earn their living. In Britannia and other online worlds, however, work is play; it is not "really" serious, though it can feel and look so when the play is particularly compelling. As Huizinga writes: "Any game can at any time wholly run away with the players. The contrast between play and seriousness is always fluid."[28] The labor involved in "doing nothing but smithing" is the work (not the labor) of game play. It is work for pleasure and escape rather than subsistence.

There is another type of work being done when gamers play at work, however: the work of culture formation. This is work being done *on* gamers, not *by* them. When developers construct virtual worlds within which players must work, and when gamers participate in this simulation, they reproduce culture. Huizinga recognizes this phenomenon but does not connect it to how the culture-building quality of play can, under the direction of capital, become a culture *industry*, an enterprise that commodifies culture itself. Adorno and Horkheimer, on the other hand, recognize the implications of playing at work all too clearly:

> Pleasure always means not to think about anything, to forget suffering even where it is shown. Basically it is helplessness. It is flight; not, as is asserted, flight from a wretched reality, but from the last remaining thought of resistance. The liberation which amusement promises is freedom from thought and from negation. The effrontery of the rhetorical question, "What do people want?" lies in the fact that it is addressed—as if to reflective individuals—to those very people who are deliberately to be deprived of this individuality.[29]

As gamers "relax" by mining ore, laying track, or planting and harvesting crops, they are continually coerced to cement labor and play together, and are increasingly blinded to the real social relations that inform and determine those real tasks.

Re-imagining games as *gameworks*, therefore, also involves acknowledging the ways gaming articulates work, labor, play, and pleasure together. In so doing, playing

at work takes on new meaning in the sense that computer games can actually de-naturalize socio-cultural practice through play and thus provide a means for reevaluating and resisting the taken-for-granted assumptions underpinning the status quo. Most games that simulate labor, for example, do so poorly. Ask any farmer how "real" *SimFarm* is, or any trucker how "life-like" *Big Mutha Truckers* is, and they will likely scoff. *Wired* magazine tried this recently, asking "14-year veteran of the road Tony Graziano" to review two recent truck driving games that purported to have "captured the feel of driving a 20-ton vehicle."[30] Almost without exception, Graziano found both titles "lame," in part because he felt the games distorted the "reality" of trucking and asked players "to forget everything you learned in science class." As Graziano explains:

> [t]he trucker uniform is a pair of Wranglers, a plaid shirt, and a baseball cap. Across the board, the characters' costumes—from ninja to disco king—seemed a bit far-fetched, if not uncomfortable, for long hauls. "Bobbie Sue drives in a checkered bikini top. You don't see that every day."[31]

In the process of trying simultaneously to simulate the long-haul trucking experience and transform that experience into a game, *Big Mutha Truckers* and *King of Route 66* ultimately de-link "trucking" from the reality of a job in which "[s]hifting is an art form."[32] At the same time, the games reassert that reality by demanding that players actually perform "real" trucking tasks in order to play. In the case of *Route 66*, this means "calling home, scheduling hauls, and checking road conditions."[33] To play at virtual trucking, therefore, means to play with notions of play and labor, and thus with notions of culture. And to play with notions of culture necessitates reflection on those parts of it that particularly define "the universal condition for the metabolic interaction" between human beings and the world in which they live.

The Work of Art

> We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art.—Valéry, 1964[34]

The recent *Game On* exhibition at the National Museum of Scotland and the Barbican Art Galleries in London confirms that computer games are now being "officially" recognized for their artistic merits (at least in Britain).[35] This recognition illuminates another facet of the *gamework*—namely, that games are "works of art" (with all the baggage that designation entails). They have, as Walter Benjamin says, an "aura" and an authenticity about them. Like other works of art, this aura is historical, "the essence of all that is transmissible from [a game's] beginning, ranging from its substantive duration to its testimony to the history which it has experienced."[36] Game auras are unusual because this history is compressed by technological innovation and the nature of the game market. Commercial game development, for example, is fairly involved, generally taking 18–24 months to complete. While two years may not seem particularly long given that some works of art can take

decades to go from idea to artifact (e.g., large architectural projects), it is an eternity in computer time, where substantial changes in processor power, speed, performance and architecture can happen yearly.[37] In effect, game developers design games to be played on technologies that often do not yet exist (or at least have not yet been disseminated).[38] This futurism is counterbalanced by the short shelf life—typically measured in weeks—of most computer games. In addition, hundreds of new titles are released every year. This constant release, coupled with new consoles and games that are not always backwards compatible, creates a certain hyper-presence. In essence, the hardware and software past is constantly being effaced as games are developed years in advance to be used up in the span of a few months.

This hyper-presence explains why last year's games seem relatively ancient compared to today's offerings. It also explains why games cannot help but be works of art, at least by Benjamin's reckoning. According to Benjamin, "[e]ven the most perfect reproduction of a work of art is lacking in one element: [the original's] presence in time and space, its unique existence at the place where it happens to be."[39] Though the evanescent nature of software problematizes questions of "originality," games cannot help but be of a particular time and place. They are thoroughly rooted to a unique instant by their aesthetics, the technology upon which they run, and the nature of the game market.[40]

By the same token, computer games lack "art's" necessary provenance. Games do not have the physical "presence of the original [that] is the prerequisite to the concept of authenticity,"[41] and thus to Benjamin's conception of art. DVDs, CD-ROMs, hard drives and other storage devices are undeniably "present," but the artifacts stored therein are immaterial. Such devices are merely vessels for holding games' digital instructions.[42] CD-ROMs crack, and hard drives crash, but digital instructions cannot "suffer in physical condition over the years" like other works of art.[43] Games cannot tarnish, weather, fade or decay, and a tenth-generation copy of game code is indistinguishable from its initial source. Thus, despite their lack of presence, games are always "original" and "authentic," and therefore undeniably works of art.

Emphasizing this "art"-ifactuality is yet another part of re-imagining games as *gameworks*. By claiming the computer-game experience as "a genuine experience as a step to greater individual fulfillment," to borrow Leo Lowenthal's definition of art, the *gamework* describes game artifactuality in ways beyond the "standardization, stereotype, conservatism, mendacity, [and] manipulated consumer goods" characteristic of popular culture.[44] Thinking of games as art raises a number of questions about the differences between art and entertainment, questions that seem to have faded with the advent of cultural studies and yet which continue to structure both critical and popular responses to computer games. As cultural formations, computer games do the most ancient work of art, not as *l'art pour l'art*, but as artifacts of cultural magic that bind people together, represent tradition, and inspire new thought.

The World, the Game, and the Critic

> In its suspicion of totalizing concepts, in its discontent with reified objects, in its impatience with guilds, special interests, imperialized fiefdoms, and orthodox habits of mind, criticism is most itself and, if the paradox can be tolerated, most unlike itself at the moment it starts turning into organized dogma.—Said, 1983[45]

The final work indexed by the *gamework* is that work required by criticism. Treating computer games as culture means recognizing that games are sites of conflict and contestation. According to Edward Said:

> culture is a system of exclusions legislated from above but enacted throughout its polity, by which such things as anarchy, disorder, irrationality, inferiority, bad taste, and immorality are identified, then deposited outside the culture and kept there by the power of the State and its institutions.[46]

Computer games, as culture, embody this system of exclusions. They are shaped by hegemony, and by aesthetic, economic, political, religious, and technological concerns. Since "criticism must think of itself as life-enhancing and constitutively opposed to every form of tyranny, domination, and abuse," these hegemonic concerns are of primary importance to the *gamework*.[47] They provide entry points for deploying the neologism and thus for resisting the tyranny of exclusion.

Of course, resisting tyranny is hard work. Not only is culture dynamic and therefore difficult to apprehend, but criticism is "most itself" when self-reflexive, making it difficult to employ. Part of re-imagining games as *gameworks*, then, involves negotiating these difficulties and acknowledging the challenging and constant work involved in computer-game analysis. Put another way, *gamework* (as both a neologism and a process) is interpellative; it declares that how games are understood is as much a part of game criticism as the study of games themselves.

This is especially important given that games have begun to profoundly affect America's economic, cultural and political landscape, and thus the work of scholars across the disciplines. The entertainment industry, for example, is radically reorganizing itself in order to more readily tap games' vast profit potential. In 2003, Sony announced plans to simultaneously eliminate nearly 20 percent of its workforce while dramatically expanding its already massive game division.[48] When one of the largest media companies in the world is happy to cut one fifth of its most valuable asset, clearly the business of entertainment has changed.

Games are likewise reshaping American culture. Not only are Americans spending more time playing video and computer games, but games are beginning to replace television as the "family" technology. According to the ESA:

- Sixty percent of parents say they play interactive games with their kids at least once a month.
- The vast majority of people who play games do so with friends and family. (Almost sixty percent of frequent game players play with friends, thirty-three percent play with siblings, and about one-quarter play with their spouse and/or parents.)[49]

It is the computer, rather than the television, around which families are starting to ritually crowd each night. The venerable "tube of plenty" is being replaced by the "joystick," and families are spending their quality time playing *Dance Dance Revolution* instead of watching *Friends.*

The US government has discovered the power of games, as well. The Army uses interactive war simulations not only to train its men and women, but to recruit potential soldiers. Released in 2002, *America's Army* is a free, multiplayer online game designed by the US Army "to provide civilians with insights on soldiering from the barracks to the battlefield." The Army claims the game depicts Army life "in the most realistic way possible."[50] Gamers go through Basic Combat Training at Fort Benning, join regiments such as the 82nd Airborne, and even face incarceration in a virtual Fort Leavenworth should they break the Army code of conduct. And yet, *America's Army* is still a game, a simulation with simulated consequences. It elides the very real intellectual, physical, and emotional rigors of Army life and thus makes a powerful recruiting tool. In essence, *America's Army* makes military service seem hip, fun, and easy.

The fact that games are affecting America's economic, cultural, and political landscape in such diverse yet equally profound ways reveals the work of re-imagining games as *gameworks* to be necessarily interdisciplinary. More than anything else, the process of examining how games engage, and are engaged in, cultural production is a process of examining the nature of culture itself, and thus the ways culture is studied even beyond the broadly constituted field of game studies. The work of criticism the *gamework* signifies, therefore, is also the work of synthesis and dialog, the work of coming to understand the complex and dynamic ways critical discourse works in concert and contestation in the creation of culture. The *gamework* ultimately works to highlight, rather than hide, game complexity at the level of analysis.

Conclusion

The Learning Games Initiative (LGI), a research consortium established in 1999 to study computer games and to track others' similarly focused research in different disciplines around the world, maintains a database containing over 2000 bibliographic citations.[51] Each entry represents considerable work on the part of authors, researchers, publishers, and many others who have taken it upon themselves to explore how and why computer games work in the ways they do. Some entries address behavioral concerns, while others describe business strategies. Many are epideictic, either blaming computer games for a host of personal or societal catastrophes, or praising them for pushing the boundaries of art, entertainment, and technology. In every case, however, the entries document the expanding web of significance that computer games are catalyzing, not only among cultures of the US, but also around the world.

Among the most important consequences of this expansion is that new communicative art forms—computer visualization, dialogical simulation, machinima, and

interactive music, for example—are being propelled by (and, arguably, propelling) cutting-edge refinements in the processes of globalization. Today, there are 3D texture sweatshops in Taiwan where employees are paid next to nothing to create the repetitive images (bricks, grass, clouds, etc.) that populate most computer games. At the same time, countries such as Cambodia are experiencing overwhelming surges of tourism by westerners who have played *Tomb Raider* or seen its spin-off movies. Such "successful" constructions of mass culture and its desires depend on the exploitation of labor as well as the deployment of techniques which elide or highlight that exploitation. Considered alongside other forms of mass culture—Hollywood films, reality TV shows, and much of the music industry, for instance—this phenomenon is hardly surprising. What is surprising is that it has taken the entertainment industry so long to recognize this opportunity. More surprising, perhaps, is the fact that it has taken scholars even longer to turn their attention toward the problematics the electronic arts/electronic business dialectic inaugurates and supports. Increasingly, computer games "just make sense" as an integral part of industrialized cultures worldwide. The *gamework* calls attention to the mechanisms and implications of such common sense and the spectacle it teaches. The *gamework*, in short, takes computer games seriously by interrogating the social and cultural consequences of their significations.

Notes

[1] Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964), 238.

[2] Entertainment Software Association, "Top Ten Industry Facts," Media Center, http://www.theesa.com/pressroom_main.html (accessed 27 February 2004).

[3] We employ the term "computer game," instead of the more common "video game," because it is computation, rather than visualization, that distinguishes the medium. While most games have a visual component (e.g., *Monopoly*, *Dungeons & Dragons*, *Jeopardy*, and *The Gong Show*), only computer games utilize integral electronic microcircuitry to process player responses. In addition, there now exist numerous computer games for the blind. Naturally, these games use no visual elements (for examples, see http://www.gamesfortheblind.com).

[4] Clifford Geertz, *The Interpretation of Cultures* (New York: Basic Books, 1973), 4–5.

[5] Interestingly, Denmark, Finland, Sweden, Japan, and other countries seem to be further along than the US in the study of game artifactuality. It is important to note, however, that we are not claiming there is a paucity of computer-game studies in the US generally, for indeed academic work on games is proliferating. We mean only to point out here that very few of these studies so far recognize that computer games are more than "texts" that have certain limited influences (e.g., on players). Such studies, which may examine the roles of violence, gender, race, or genre in particular games, rarely extend their analyses further than the game itself to investigate how the game is both a product and producer of the culture within which it has emerged. Even game developers themselves recognize this lack, as is clear in these recent comments from legendary game developer, Ernest Adams: "We need not merely reviewers, but critics. Right now, we don't have in-depth criticism of games; we have reviews. Reviews only compare games to other games; they don't analyze games in their larger cultural context. *Real* critics bring to their profession not just a knowledge of the medium they are discussing, but a wider reading and an understanding of aesthetics and the

human condition." Markus Friedl, *Online Game Interactivity Theory* (Hingham, MA: Charles River Media, 2003), 400.

[6] Computer games are in fact very different from other kinds of games. In addition to utilizing microcircuitry to facilitate play, computer games also allow for scenarios and interactions that are nearly (if not completely) impossible in other types of games. MMOGs such as *Dark Age of Camelot* and *A Tale in the Desert*, for example, allow thousands of players to interact with one another in the same game space at the same time. These players need not even live in the same town, let alone the same country (or even speak the same language, for that matter).

[7] For an explication of the "dream-work," see Sigmund Freud's *The Interpretation of Dreams* (New York: Avon, 1998).

[8] Thierry Kuntzel, "The Film-Work," *enclitic* 2, no. 1(1978): 41.

[9] Kuntzel, 42.

[10] According to Midway Games, some titles take even longer to develop, and adapting a game from one platform to another takes an additional three to twelve months, further extending the development period. Midway Games Inc., SEC 10-K Report, 28 March 2003, http://web.lexis-nexis.com/universe.

[11] http://popcap.com/

[12] PopCap Games, "Our Mission," http://popcap.com/aboutus.php (accessed 5 August 2003).

[13] For examples of these discussions, see any of the various forums established by the International Game Developers Association's Quality of Life Committee (http://www.igda.org/qol), or Jennifer Olsen's editorial, "Quality, Not Quantity," *Game Developer*, February 2004, 2.

[14] See "The Software Factory" in Andrew Rollings and Dave Morris's *Game Architecture and Design* (Scottsdale, AZ: Coriolis Group, 2000) and "Workers and Warez: Labour and Piracy in the Global Game Market" in Stephen Kline, Nick Dyer-Witheford and Greig de Peuter's *Digital Play: The Interaction of Technology, Culture, and Marketing* (Montreal: McGill-Queen's University Press, 2003).

[15] Stuart Hall, "Encoding/decoding," *Culture, Media, Language: Working Papers in Cultural Studies, 1972–79* (London: Hutchinson & Co., 1980), 128–38.

[16] Entertainment Software Association, "Industry Sales and Economic Data," Media Center, http://www.theesa.com/pressroom.html (accessed 27 February 2004).

[17] Chris Crawford, *The Art of Computer Game Design*, http://www.vancouver.wsu.edu/fac/peabody/game-book/Chapter6.html.

[18] Crawford.

[19] Many avid gamers are already able to identify technique, recognizing homages to Shigeru Miyamoto in the work of newer developers, detailing the history of game clones, and even carefully noting details about the private lives of key personnel in a game's development in order to see if those details influence the game's aesthetics and kinesthetics.

[20] Julian Dibbel, "The Unreal Estate Boom," *Wired*, January 2003: 108.

[21] Dibbel, 110.

[22] Dibbel, 110.

[23] Karl Marx, *Capital* (New York: Vintage Books, 1977), I: 7.3.

[24] Bikhu Parekh, "Hannah Arendt's Critique of Marx," in *Hannah Arendt: The Recovery of the Public World*, ed. Melvyn A. Hill (New York: St. Martin's, 1979), 85–86.

[25] Marx, I:7.1—emphasis added.

[26] Johan Huizinga, *Homo Ludens: A Study of the Play Elements in Culture* (Boston: Beacon, 1986), 13.

[27] The notable exception to this is when players intentionally labor in a game to create items and characters that they intend to sell for real money at auction.

[28] Huizinga, 8.

[29] Max Horkheimer and Theodor Adorno, "The Culture Industry: Enlightenment as Mass Deception," in *Dialectic of Enlightenment* (New York: Continuum, 1972), 144–45.
[30] Suzanne Ashe, "In the Driver's Seat," *Wired*, May 2003: 70.
[31] Ashe.
[32] Ashe.
[33] Ashe.
[34] Paul Valéry, "The Conquest of Ubiquity," *Aesthetics*, trans. Ralph Manheim (New York: Pantheon Books, 1964), 225.
[35] For a really pretty book documenting the *Game On* exhibition, see Lucien King's *Game On: The History and Culture of Videogames* (New York: Universe, 2002).
[36] Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, ed. Hannah Arendt (New York: Schocken, 1969), 221.
[37] As Illkka Tuomi points out, "the definition of computing power depends on the tasks for which the computer is used." Illkka Tuomi, "The Lives and Death of Moore's Law," *First Monday*, 2002, http://www.firstmonday.dk/issues/issue7_11/tuomi/. Hardware designs, however, change regularly, and their capabilities often increase at linear and sometimes even exponential rates.
[38] John Carmack, one of the legendary designers of the *Doom* franchise, is well known for obtaining pre-release versions of video cards in order to develop his games. See David Kushner, "Prepare to Meet Thy Doom," *Wired*, May 2003: 150–53, 160–61.
[39] Benjamin, 220.
[40] The notable exception might be emulation software. Emulators such as the Multiple Arcade Machine Emulator (MAME) faithfully reproduce every detail of old games—graphics, sounds, set-up and testing utilities, and gameplay—for more contemporary computer systems. Arcade games from twenty-five years ago like *Tempest*, *Defender*, and *Donkey Kong* can thus be run on the latest multi-gigahertz computer—a violation of Benjamin's time/space aura criterion. By the same token, in order to run older games, an emulator effectively has to transform the computer it runs on into an older model, a transformation that recalls both the time and space in which the game was originally rooted.
[41] Benjamin, 220.
[42] The idea that games have no physical presence is made even more complicated by the development of game engines that render environments "on the fly." *Halo II*, for example, uses no pre-rendered graphics, which means that when players see the game environment on their screens, they are essentially seeing them for the first time. The game environments are not stored on the game's disks, but generated during play.
[43] Benjamin, 220.
[44] Leo Lowenthal, *Literature, Popular Culture, and Society* (Palo Alto, CA: Pacific Books, 1961), 6; Lowenthal, 11.
[45] Edward Said, *The World, the Text, and the Critic* (Cambridge, MA: Harvard University Press, 1983), 29.
[46] Said, 11.
[47] Said, 29.
[48] Hoover's Inc., "Sony Corporation," *Hoover's Company Profile Database—World Companies*, LexisNexis Academic Universe, http://web.lexis-nexis.com/universe (accessed 24 June 2003).
[49] Entertainment Software Association, "Top Ten Industry Facts."
[50] United States Army, "America's Army: The Official U.S.Army Game," http://www.americasarmy.com (accessed 15 October 2003).
[51] http://www.mesmernet.org/lgi