Chapter 11
Thumb Wars: Body and Mind in Video Games

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No human being is innocent, but there is a class of innocent human actions called Games (W.H. Auden)

Some people's first memory involves their parents. Others think back and recall beloved pets, happy outings, joyous occasions. Me, I remember my first Atari.

I received my first video game console – the Atari 2600, to be exact – in 1983, when I was 7 years old. As soon as my father plugged the wood-encased machine into the television set, I felt a strange sensation. There I was, in the same cavernous living room, on the same battered, blue couch, looking at the same clunky TV resting atop the same rickety wooden table, and yet there was one concrete difference: as soon as I grabbed the Atari's joystick in my hand, I could tell the images on the screen what to do.

To my impressionable mind, this was as close as one got to magic. I grasped the bulky plastic cube with the rubbery black stick protruding from its center and the shiny red button at its base as hard as I could. I jerked it around, pressed it, moved it from hand to hand. Sometimes, I would even ignore the game itself and just move the joystick around, pressing the button just to see the pixilated objects on the screen respond to my commands. Soon, I too had developed what was then fondly called "the Atari thumb," a patch of skin made callous by continuous pressing of buttons; the blister was a source of much pride, as if the virtual battles I was fighting on screen somehow manifested themselves in real life and registered themselves on my flesh. I had neither the intellectual capacity nor the inclination to think about the play experience in depth, but, even at that early age, I understood, immediately and instinctively, that video games offered a sensation unlike that offered by any other medium.

But just what was the nature of that sensation? And how exactly did it differ from similar sensations offered by other media? These are, of course, sizable subjects that require a canvas larger than the one offered here. But there are, perhaps, some observations that could be gleaned from asking the right questions about video games, or consulting with the right sources. Like Martin Heidegger.

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Video Games and German Philosophy

At first glance, the famous German philosopher may not seem like much of an authority on video games. But the central obsession at the core of Heidegger's work is the key, I believe, to understanding the video game playing experience. It is the idea of human subjectivity.

It is, of course, a concept that has kept philosophers occupied for centuries. René Descartes, most famously, summed Man elegantly with his *cogito ergo sum*; we think, the Frenchman suggested, and therefore we are, which means, to put it roughly, that we are not truly actors in the world but rather spectators, detached observers in whose minds the grand drama of human life unfurls. We watch, and then reconstruct the world as an image in our minds. In so doing, humans possess the transcendental freedom usually associated with God.[1] If television had a patron saint, it would have to be Descartes.

This kind of transcendental talk, however, made Heidegger mad. Man, he claimed, does not inhabit the World as water does a glass: While the glass can be emptied of the water without fundamentally affecting the nature of either, the same cannot be said of Man and the World; and Man, unlike the glass and the water both, is aware of his encounter with the world and does not merely coexist with it as one object beside another. Or, for that matter, as subject to object; to drive that point home, Heidegger gave a well-known example involving a hammer:

> Hammering does not simply have knowledge about the hammer's character as equipment, but it has appropriated this equipment in a way that could not possibly be more suitable. . .. The less we just stare at the hammer-Thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the more unveiledly is it encountered as that which it is – as equipment. The hammering itself uncovers the specific 'manipulability' of the hammer. The kind of Being which equipment possesses – in which it manifests itself in its own right – we call *readiness-to-hand*.[2]

It's a dense statement, but one that conveys a sentiment familiar to every gamer: it is not enough for one to observe a hammer – or, for that matter, someone else hammering – to grasp the hammerness of the hammer; for that, one must pick up a hammer and drive a nail through a wall. Only then is the hammerness of the hammer-thing fully experienced as such. Similarly, it is not enough for someone to observe a video game being played to grasp its true essence; for that, one must pick up a controller and play. This is precisely what I felt at seven, clutching the Atari joystick: for the first time, I wasn't just observing, but experiencing.

It's a radical idea, and it is not without its radical implications. When experience is placed at the center, everything changes. Even space: while Descartes understood space as most of us probably would, namely as a fixed grid with exact coordinates, Heidegger, as Stehen Mulhall explains, saw it in terms of its usefulness to us:

> [A human being] most fundamentally understands its spatial relations with objects as a matter of near and far, close and distant; and these in turn are understood in relation to its practical purposes. The spectacles on my nose are further away from me than the picture on the wall that I use them to examine, and the friend I see across the road is nearer to me than the pavement under my feet; my friend would not have been any closer to me if she had

> appeared at my side, and moving right up to the picture would in fact distance it from me. Closeness and distance in this sense are a matter of handiness and unhandiness; the spatial disposition of the manifold of objects populating my environment is determined by their serviceability for my current activities.[3]

There are, however, two sides to this idea. Just as we understand the objects surrounding us primarily in terms of their use-value – namely, understanding of a hammer not for some abstract "hammerness" but rather for its serviceability in driving nails into surfaces – we must also understand ourselves first and foremost as practitioners. And no practice, of course, can exist unless it can be practiced by many. One, to paraphrase Wittgenstein, cannot follow a rule privately; a rule is a rule precisely because it implies to all. Which leads Heidegger to the following, startling conclusion:

> The Self of everyday [human beings] is the they-self, which we distinguish from the authentic Self – that is, from the Self which has been taken hold of in its own way. As they-self, the particular [human being] has been dispersed into the 'they', and must first find itself.[4]

Heidegger, a member of the National Socialist Party, was no stranger to the consequences of particular human beings fading into faceless collectives. But his ideas, while politically terrifying, nonetheless suggest fascinating possibilities where media are involved. Heidegger, alas, never lived to see these potentialities: he was born 6 years before the Lumière Brothers held the first public screening of a motion picture, and considered cinema the chief medium of his time. He believed it had changed the world. The story of modernity, Heidegger insisted, was not that of interchangeable worldviews struggling for prominence, but rather of mankind's attempt to "conquer the world as image."[5] At the heart of this effort, he argued, lay the fundamental essence of technology: *Bestellbarkeit*, or the ability of being placed and displaced at will, on order, on demand. As man made cameras and created representations of himself and his surroundings, he could turn the world into a picture "whose ultimate function is to establish and confirm the centrality of man as the being capable of depiction."[6] The subject, in other words, becomes the reference point of things as such.

This formulation, written with cinema in mind, should not be foreign to any avid television watcher. Television watching, after all, is an experience that demands, that places at its heart, a subject, who, with the click of a button, commands the appearance of the images on screen. The distance between screen and sofa is, indeed, the critical distance between the Cartesian empirical universe and its re-creation in the subject's mind. As was repeatedly demonstrated by scores of researchers in both cultural and communications studies, such a distance creates ample space for interpretation and reinterpretations. Consider the following example, the renowned study by Elihu Katz and Tamar Liebes concerning divergent meanings assigned to a commonly viewed episode of the television series "Dallas." Sitting in a living room along with several couples, a researcher observed the conversation that unfolded before, during, and after the broadcast, noting that each participant, despite the communal experience of viewing, nonetheless interpreted the meaning of the

episode according to his or her own preexisting set of cultural, religious, and socioeconomic biases. As Katz and Liebes note:

> This group is of particular interest because it illustrates vividly how community members negotiate meanings by confronting the text with their own tradition and their own experience. The conversation suggests that the program serves viewers as a forum for discussion of personal, interpersonal and social issues such as justice; whether or not fathers have equal rights in their children; child-rearing problems; gender-role differences; attitudes towards adultery and divorce; the problem of cramped quarters; religious demands; and the harsh reality of prolonged war in Lebanon. Consider also the references to other texts – especially religious ones.[7]

The viewers in this case are subjects, capable of depiction at will, constructing their own world-picture. They would have been easily recognizable to Heidegger, who might claim that in television, even more than the cinema, they found a safe haven in which to fashion the world in their own image and understand it according to their own particularities.

Portrait of a Gamer

But it is the video game player, not the television watcher, who may be the truly Heideggerian creature. For the gamer is not a Cartesian subject; he does not observe, and therefore lacks the critical distance to establish his liberating world-picture. Instead, with his controller at hand, he acts.

To understand the nature of the gamer's actions, one must take another cue from Heidegger and experience, rather than merely observe, video game play. Throughout the course of a prolonged and detailed phenomenology, involving structured play of Nintendo's hit title "The Legend of Zelda: Twilight Princess," I've discerned a few elements that help typify the gaming experience. Taken together, they portray a medium radically different from its predecessors.

For one thing, there's the matter of the hands. It's our limbs, much more than our minds, that are at the center of game play. After a few hours of acquainting myself with the game's world and its set of controls, I noticed a sense of muscle memory setting in, and my body became freer to incorporate itself into the game play experience; as my manual dexterity increased so as to allow for seamless play, I now played primarily through my fingers.

Which, in turn, raises an interesting question, given that video games are still, like television, a visual medium. In a sense, they must always strive to strike a balance between catering to the eye and the hand. This is a constant tension, and it makes up much of the play experience; and yet, the better I became at performing the ballet of thumbs which was manipulating Link, the game's protagonist, the less adamant was my gaze upon the action unfurling on the screen. Of course, no video game player could ever close his or her eyes altogether and give in to sheer movement. Every game still greatly depends on visual, and to a lesser degree audible, clues that provide such information as the location of enemies, the geography of worlds, etc. But the more I played, the more peripheral vision sufficed to fulfill my visual needs.

I was now gleaning nothing but the most essential information from the screen, and then allowing my fingers to guide me through the interaction.

Quoting the basketball great Larry Bird, the philosopher Hubert Dreyfus shed light on a similar phenomenon: "[A lot of the] things I do on the court are just reactions to situations . . . A lot of times, I've passed the basketball and not realized I've passed it until a moment or so later."[8]

Author David Sudnow, in a now largely outdated study of the first generation of video game arcade machines, further elaborated on this shift from eye to hand. Devoting many hours to playing "Breakout," an early and simplistic video game in which the player manipulated a paddle across a screen, using it to bounce a ball and destroy layers of bricks situated toward the top of the screen, Sudnow, too, noticed the shift between the faculties as he became a better player. "At first it felt like my eyes told my fingers where to go," he wrote. "But in time I knew the smooth rotating hand motions were assisting the look in turn, eyes and fingers in a two-way partnership."[9] Later on in the account, he admitted that what at first consisted of gluing his eyes to the ball,[10] soon became largely a manual motion, and that, at his new stage of mastery, "peripheral vision sufficed."[11] Even later, he claimed that his eyes would rove across the screen, looking now not so much at the places where the ball was falling but rather at the places where the ball was likely to fall in the near future; with the ball being small, the paddle rather large, and the game consisting of only one screen, there were only so many distinct positions for the paddle to assume, and Sudnow found that, once his hands took over the mechanics of game play, his eyes were free to assess the possibilities. "The eyes," he added, "could plan."[12]

But while Sudnow's account fits well with the narrow game environment of "Breakout," in a more complex game, which incorporates many screens and a multitude of objects that require varying, differentiated, and interactive responses, the capacity of the eye to plan, and therefore to participate in the play process in a way that is anything but perfunctory, is greatly diminished. Manipulating Link across screens, my eyes had no incentive to wander across the game's terrain, surveying its outlines, and proposing possible courses for future action. Rather, with the play experience flowing and the thumbs and index fingers in control of Link, my eyes found a convenient spot at screen center from which they could collect, aggregate, and transmit nothing but the necessary data to the busy manual mechanism now in charge.

The State of Absorption

As soon as this flow was created, I became curious about its nature. While the primacy of the hands was clear to me, I wondered what, if anything, about the inherent architecture of the game enabled the flow to persist, or, in other words, what was it about the game that facilitated the state of absorption I had entered. Yet, in order to measure the flow, I had to interrupt it. Throughout the course of five 1-h-long play sessions, each occurring two days apart and taking place well after

I had achieved proficiency in playing that particular game, I requested an assistant to interrupt my play at agreed-upon times. The interruptions, five per session, occurred at intervals of roughly 20 min, and consisted of the assistant asking me to pause the game for a second so that he could ask me a simple question. I also instructed the assistant to observe my play closely and ensure that approximately half of his interruptions took place when Link was at an uneventful point in the game – running through a field, say, or commuting from one screen to another – while the other half were timed to coincide with highly interactive points in the narrative, such as major battle scenes or complicated puzzles. Once I resumed play, I would verbally comment on my difficulty in returning to the aforementioned state of absorption, and asked my assistant to verify these statements by observing my on-screen performance as well as my body language. This makeshift experiment was designed to test the assumption made by some phenomenologists – most notably Maurice Merleau-Ponty, Dreyfus, and Aron Gurwitsch – as well as Heidegger himself, regarding the non-representational nature of learning and experience, namely the claim that knowledge is produced not through deliberate contemplation but simply through repetitive practice. I coded my findings in Table 11.1, with Roman numerals chronicling the individual interruption in each session, E connoting an eventful point in the narrative, and NE connoting a non-eventful point. My own

Table 11.1 Interruption of play and its correlation to narrative and duration of play

Session	Interruption/nature of play	Difficulty at resuming play
1	• I/NE	Minimal
	• II/E	Minimal
	• III/E	Medium
	• IV/E	Medium
	• V/NE	Maximal
2	• I/E	Minimal
	• II/NE	Minimal
	• III/NE	Minimal
	• IV/E	Medium
	• V/E	Medium
3	• I/NE	Minimal
	• II/NE	Medium
	• III/NE	Medium
	• IV/E	Maximal
	• V/E	Maximal
4	• I/E	Minimal
	• II/NE	Minimal
	• III/NE	Medium
	• IV/NE	Medium
	• V/E	Medium
5	• I/NE	Minimal
	• II/NE	Medium
	• III/E	Medium
	• IV/E	Maximal
	• V/E	Maximal

responses regarding difficulty at resuming play were measured in three increments: minimal, medium, and maximal.

As Table 11.1 shows, the eventfulness of the game's narrative had little effect on the ease with which I immersed myself back in the game, while the duration of play prior to the interruption had a significant effect. The longer I played, and the more immersed I was in the game, the more disruptive the interruption. Interruptions during uneventful lulls occurring well into the session were, for the most part, considerably more disruptive than interruptions during eventful moments occurring relatively shortly after I'd begun playing. The game's eventfulness, its narrative, its plot, seemed to matter very little; the amount of time invested in play was the only meaningful variable. Playing video games, then, was less like watching a movie and more like participating in an entrancing dance: the more one did it, the harder it was to stop.

The Gamer Persona

Thus far, we've seen what the video game player does as he plays the game; we have yet, however, to ask a more troubling question, namely who the player is when he takes on another pixilated, digital persona. A cautious step in that direction was taken by education expert James Paul Gee; in his chapter titled "Learning and Identity: What Does it Mean to Be A Half-Elf?"[13] He described his experience playing a character named Bead Bead in a role-playing game called "Arcanum." The play experience, he claimed, immediately constructs three distinct yet intertwined identities, which he called the virtual, the real, and the projective. In the first case, he wrote, "the stress is on the virtual character Bead Bead acting in the virtual world of Arcanum (though I am 'playing/developing' her)."[14] The second, respectively, stressed "the real-world character James Paul Gee playing Arcanum as a game in real time (though Bead Bead is the tool through which I operate the game)."[15] Finally, the third identity, labeled projective to connote both Gee's projecting of his values and desires into the virtual character of Bead Bead and his perception of Bead Bead as "one's own project in the making,"[16] emphasized "the interface between – the interactions between – the real-world person and the virtual character."[17] As is suggested by the title of her article, "Who Am We?" Sherry Turkle suggested a similar approach, speaking of a "multiple but integrated identity."[18]

Yet the aforementioned studies, conducted mainly by cognitive scientists with limited long-term experience in game playing, assumed identification and the construction of identity to be a cognitive process, in which the individual identities of player and character are actively dismantled, combined, and reassembled. Such an approach, however, ignored the previously discussed and seminal element of video games, namely their physicality: by assuming a purely cognitive process, Turkle, Gee et al. disregarded fundamental elements of video game design, history (born of reflex-sharpening devices commissioned by the military), and hardware (with physical interaction between player and machine an area of growing innovation, most notably in Nintendo's Wii console). Above all, however, the cognitivists ignored the dominance of the digits. This observation isn't mine alone: a 2006 comprehensive

survey of 420 professional gamers, namely individuals who earn a living playing in video game tournaments, demonstrated that when requested in an open-ended question to name the most positive and enjoyable elements of game play, participants named "improve reflexes," a purely physical notion, as one of the seven most attractive characteristics of the play experience.[19]

Let us, for a moment, pause and revisit what we know of the video game player thus far. He is immersed in the game, intertwined with it, as we've learned from Heidegger, to a non-distinguishable degree, becoming not a discerning viewer but a practitioner whose skills and functions in the game make him or her interchangeable with any other player who may pick up the game's controller. For the gamer, game play is a primarily physical experience. He cares little about narrative, and becomes absorbed simply by playing for long, uninterrupted stretches. One thread ties these elements together, and posits the game player as a truly new breed of media consumer: crudely put, during the duration of game play, the video game player lacks subjectivity.

A subject, as we've previously seen, can only become such, given distance, perspective, remove. The video game player lacks these elements by definition. He exists in an odd state of selfhood, experiencing the game's world as a pure state of Being, that is to say, Being released from all of its compromising anxieties. He experiences death repetitively, and yet needs to do nothing more to revive his character than press a button. Unlike the television watcher, the gamer doesn't think, analyze, or respond, but rather act. He is free, then, in the sense that he has no mental or moral responsibility.

Ironically, in the confining boundaries of the game, meticulously planned and written in code by the game's designers and programmers, the player, in shedding his or her subjectivity, in interacting with the game's world with mind as well as body, is able to disrupt reality and liberate himself, if only for a short while, of its yokes.

The essential video game experience is this basic disruption of reality – inevitable once the critical distance from reality has been removed and the gamer has lost his ability to order the world in his mind. At that point, the player, just as long as he is playing, can be said to enjoy a condition of pure being, unconfined and free, possessing, at one and the same time, of all the naïve charm of childhood and of all the destructive potential of chaos.

The Gaming Experience vs. Other Media (or: Gaming as Social Media)

It is now, therefore, easier to see in crisper detail the potential differences between the video game experience and virtually any other experience involving any given medium. Other media, be they what they may, reinforce, in a sense, Goethe's old dictum: "From yourself you cannot flee." Reading a newspaper, listening to the radio, watching television, surfing the web – all those require an organizing subject

who thinks (about what he is reading, hearing, seeing) and therefore is (a reader, listener, viewer). The opposite is true in the case of video games. There, players flee from themselves into, to use Heidegger's helpful term, an other-self, into something that is them (a player) and not them (a pixilated avatar on the screen) at the same time. The reader, or the viewer, makes sense of the world and the medium; the player allows the medium to make sense of him, that is, to enfold and orchestrate him while allowing him to preserve an illusion of freedom. It should, therefore, not come as any surprise that console makers, from the medium's prehistory onward, strove to equip their machines with network capabilities, and that online gaming services such as Xbox Live are becoming so popular. While the following proposition might strike some as counterintuitive, video games are, as a medium, infinitely more "mass" than television, radio, or newspapers, as their constituents, the players, are no longer discerning individual subjects but rather a collection of largely interchangeable beings who, having abandoned their selfhood for the aforementioned hybrid with their on-screen avatar, and focusing purely on the functionality of play, can more easily connect with other beings who are in a similar state.

On the one side of the spectrum emanating from this realization concerning the ontic nature of video games lies a great promise. It is not difficult to see how players, at least while in the game's world, might find it significantly easier to communicate with others like themselves; once the doors to the closet of subjectivity have been blown open, the being that lurks inside is free to roam the world and communicate with likeminded (or, perhaps, likebodied) beings. A sliver of this promise, I believe, is already apparent in such virtual communities as Second Life, which, according to recent reports, is currently home to approximately 15 million users.[20] The name, the subject of much derision from some critics, is befitting: Having grown up playing video games, Second Life's users – a large number of whom, according to Linden Labs, the company behind the enterprise, are young adults – have no trouble conceiving of a virtual existence represented by an on-screen avatar as, quite literally, a second life.

And since the beings living their second lives on Second Life are not steely subjects but rather decontextualized non-subjects who are accustomed to their unique condition, they have no problem letting their porous selves melt into those of others and vice versa. On Second Life, there are no competing interpretations, opposing viewpoints; there are no interpretations and viewpoints at all, at least not to the degree that they are concrete or meaningful. That, I believe, is why several attempts to organize political groups in the virtual world have failed; not because its inhabitants are, in real life, uncaring about such issues (as some commentators suggested), but rather because such associations are beyond the reach of the self/avatar hybrid, requiring, as they do, the one thing such a hybrid lacks: subjectivity.

And while political associations falter, more modest social interactions, as well as artistic endeavors, bloom. Second Life is populated, as even the briefest of visits is likely to affirm, with game-players and jokesters, with singers and filmmakers and artists, all interacting not under the contextual confines of the real world but in the considerably freer world of the avatars. There, films, for example, can be created without cameras or budget and presented to viewers who require no tickets;

as the burst in the popularity and production of machinima – or machine animation, a genre of animation created out of the computer-generated imagery of video games – clearly demonstrates, Second Life users wish not for an extension of the real world into the virtual one but rather for a purer environment in which code can be infinitely reshaped into any imaginable thing, from a short film to a complex game. Working with code, the filmmakers of Second Life needn't create their own representations of reality, as would real-life filmmakers, but rather reimagine the existing code – in the case of machinima, that of video games – in a slightly different way. The same is true of any interaction in Second Life: As all the world's inhabitants are avatars, and all avatars are code, all the world's inhabitants are, almost literally, one (or, on a punning note, ones and zeros).

Herein, however, lie the other, more nefarious implications of this unique state of being. Devoid of their subjectivity, the same beings that can create community can also serve as mindless masses. This too, is already, I believe, largely evident; the sharp increase in cyberbullying[21] – acts of harassment and slander committed, often anonymously, on social networking sites such as MySpace and Facebook – is a testament not only to the ontic qualities of the new medium – namely, the anonymity that they afford potential evildoers – but also, and, perhaps, predominantly, to the aforementioned condition of decontextualized, non-subjective existence. Cyberbullying, then, should be seen not as a deviation from the rules governing the real world, but rather as a normative behavior, one practiced and learned during hours upon hours of playing video games: it is not impossible – indeed, very likely – that cyberbullies are not, as they are currently presented, calculating subjects utilizing new technologies maliciously, but rather children who behave online as they've always behaved in virtual environments, that is to say with no concrete sense of agency and, therefore, no responsibility.

Taken a step further, this same logic can be translated even further, into implications occurring in the real world. Many deft commentators have noticed that a growing number of soldiers, when asked about their experiences under fire, reply that they found combat to be very similar to a video game. That is not at all an overextended metaphor, but rather a fairly concrete description. Like video games, combat, too, is a kinetic, haptic experience, bringing together mind and body, rapidly unfolding and leaving little room and no time for a discerning, curious, and analytic subject. And while video games cause no casualties, they might go a long way toward dulling the horror of the real: In providing an experience close, in its essence, to combat, and yet one from which pain and its consequences are wholly absent, video games could be said, perhaps, to have an overall detrimental effect. This, of course, is a much larger charge than I intend to prove here; I present it now merely as a subject for potential future research. But, if even remotely accurate, such an effect is imminently more influential than the mere correlation between playing and aggression that has been repeatedly suggested – and repeatedly debunked[22] – by earlier generations of researchers, and fundamentally more serious than the harmful effects that parents and legislators attribute, erroneously, to violent content. The effect suggested here is graver as it proposes the possibility that elements of the amoral, consequence-, and responsibility-free environment that constitutes video

games might seep into the real world and shape players' subjectivities even outside the confines of the game, with likely disastrous consequences. Again, I cannot explore this issue any further here.

The Implications of Video Games on the Media Industry

These two dichotomies – the utopian and the dystopian – are, of course, but extremes; many other scenarios are possible. Yet, those wishing to understand the potential implications of video games – be they corporate executives, parents, or communications scholars – would do well to concentrate not on the games as texts or as machines – and, respectively, not on the players before or after they take the game controller into hand – but rather on that elusive moment in which an individual becomes a player and loses his subjectivity, and on the consequences that such a transformation entails. Only by learning to inquire after the distinctive properties of the medium, and divorcing it from the deceptive similarity with that other visual medium, television, can we understand the dramatic implications that lie ahead. Most children realize it the first time they take a joystick into their hands; it's time for the rest of us to catch up.

Notes

1. For an instructive discussion of this point, see Mulhall, S. (2005) *Routledge philosophy guide to heidegger* (2nd ed., pp. 39–40) London: Routledge.
2. Ibid. (p. 98).
3. Mulhall, *Routledge philosophy guide to heidegger* (p. 53).
4. Heidegger, *Being and time* (p. 167).
5. Ibid. (p. 134).
6. In Heidegger, "The Age of the World Picture," p. 132.
7. Katz, E., & Liebes, T. (2002) The export of meaning: Cross-cultural readings of dallas. In Brooker, W. (Ed.), *The audience studies reader* (p. 289). London: Routledge.
8. Quoted in Dreyfus (1996) The Current Relevance of Merleau-Ponty's Phenomenology of Embodiment. In *The Electronic Journal of Analytic Philosophy*, 4.
9. Sudnow, D. (1983) *Pilgrim in the microworld* (p. 40) New York: Warner Books.
10. Ibid. (p. 45).
11. Ibid. (p. 47).
12. Ibid. (p. 48).
13. Gee, J. P. (2004) *What video games have to teach us about learning and literacy* (pp. 51–73). Hampshire, UK: Palgrave Macmillan.
14. Ibid. (p. 54).
15. Ibid. (p. 55).
16. Ibid.
17. Ibid.
18. Turkle, S. (1996, January) Who Am We? *Wired* 4(1). http://www.wired.com/wired/archive/4.01/turkle.html (Accessed on June 28, 2006).
19. Pedersen, J. B. (2006, May 16) Are Professional Gamers Different? Survey on Online Gaming. *Game Research*. http://game-research.com/index.php/reports/are-professional-gamers-different-survey-on-online-gaming. (Accessed on January 5, 2007).

20. See "Linden Lab company profile," http://www.crunchbase.com/company/secondlife. (Accessed June 23, 2009).
21. For more on the phenomenon, and the reactions of educators, parents and legislators, see Chaker, A. M. (2007, January 24) Schools Act to Short-Circuit Spread of 'Cyberbullying'. *Wall Street Journal*.
22. For the definitive study on this controversial matter, see Sherry, J. L. (2001) The Effects of Violent Video Games on Aggression: A Meta-Analysis. *Human Communication Research*, 27, pp. 409–431.