

CHAPTER VI - DISCUSSION AND CONCLUSIONS

"Thank you, Mario! But our princess is in the other castle!"

– *Super Mario Bros. (1985)*

This study has told two stories in detail. The first story looked at how a group of players helped a novice learn how to play a game. The second story focused on these players trying to create their own method of measuring their techniques, developing rules that emerged out of their social interaction. Both of these stories share a few commonalities, which shall make up the primary section of this chapter. Then I will look at the implications of the findings. Finally I will end the dissertation with some suggestions for what further research is needed for us to improve our understanding of learning in video games.

Discussion

In both findings chapters, we saw the players' need to reconfigure *regular play* to accommodate their different activities. I have used *regular play* as shorthand to refer to the play that happened *when nothing else is going on*. We saw that with Li and the experts, who had to suspend their regular play in order to make room to instruct her. We also saw that during the duels, when they developed and argued about rules of fairness. In both cases, they had to adjust their normal method of play. The best way to understand *regular play* is to compare it to how Sacks et al. (1974) describe everyday conversation as a speech-exchange system that falls on a continuum which includes other forms such as interviews, debates, therapy sessions, ceremonies, and so on. All of these speech-

exchange systems have rules that govern how they operate, for example, how turns are allocated between the participants. In everyday conversation, which lies on one end of the continuum, turns are allocated locally among the participants, while other speech-exchange systems, such as debates and ceremonies and dissertation defenses, lie on other end, where turns are more structured and pre-specified. Between these two extremes are all the other forms of talk that vary according to their formality and structure. Moreover, turn-allocations are one of many features that vary according to the context; others include the number of participants involved, the amount of time each speaker can take, the order of speaking, and so on. These rules are not laws of nature, but are constraints to ensure that communication flows smoothly. Most of us are *competent* in managing everyday conversation effortlessly and unconsciously, and most of us know when these rules are violated (e.g. when someone speaks out of turn, takes too long to speak, and so on).

I suggest that *regular play* is analogous to the way Sacks et al. describe everyday conversation. I use “analogous” because there are too many games, genres, contexts, players and circumstances to argue that the form of regular play described here has the same kind of familiarity as everyday conversation. However, the key point I would like to make is that people assume the existence of a basic form of play that represents *this is how people typically play this game*, just as how we might assume that there is a typical way of driving a car, walking along a sidewalk, buying groceries, and so on. Here, “typical” does not mean right or ideal, nor does it refer to a norm; it has more to do with the general expectation that we must be able to carry out these mundane activities without having to think about how to do them each time we do them.

No one is more aware of the existence of this basic form of activity than someone on the periphery. This can be the novice who does not know how to do the activity, or the person who has to do it in a new context. Most of us who know how to engage in conversation or drive a car have to be on a higher level of awareness when we talk to someone with a different linguistic or cultural background or drive in a new city. Sacks et al. rely on *competence* in conversation in describing their systematics for the organization for turn-taking. This view of competence should not be seen as a cognitive ability in the Chomskyan sense, as it does not mean knowing all the rules there is to know about the activity. It is more akin to the way Garfinkel (1984, 2002, 2008) thinks of activities – as having enough information to carry on or, otherwise, pretending to know enough so as not to be caught not knowing (Varenne, 2007; Varenne & McDermott, 1998).

As the novice, Li gave us a glimpse of the view from the periphery. She did not struggle with the game simply because she did not know how to play. It was because she did not orient herself to the way that the game is *typically* played (by the experts, by the game designers, by other players). This does not mean that she was wrong because she never stopped trying to make sense out of the game. In addition, she had other struggles – with the controller, with knowing how the game expects you navigate its screens, with what the characters do, and with how the experts typically play. When we saw the experts make a more concerted effort to instruct her, they were instructing her how to be competent in regular play.

At one point, Li apologized for attacking another character, and the experts laughed at her for apologizing, because the point of the game was to win. But in chapter five, we saw that that was not entirely true, and that the point was not simply to win but

to win in a fair way. It is curious to consider why they thought there was something, for lack of a better term, *wrong* with their regular play for them to create new rules and hold everyone accountable to them. It was not that regular play was unfair, or they probably would have abandoned it. From their efforts, I gathered that it was because “fairness” had to be re-defined because something else was at stake. This “something else” – which they called “技術,” or technique – was a concept that evolved over their course of the dueling. More precisely, it was a concept that was gradually defined by the methods used to define it. There was no reason why any of the factors they complained about – the stage or the use of items – could not have been part of this concept, and if we were to encounter another group of players who had a definition that incorporated these factors, that would have been perfectly acceptable as well. What was revealing about the interaction between my participants is that we get to see this concept of “fairness in dueling” in the process of being conceived. We might think of their work as the reverse of Li’s. That is, they were not at the periphery, trying to do what others are doing; instead, they were generating the rules that would govern what a typical dueling match should look like. These become rules that players new to this group would have to follow if they were to also take part in dueling.²⁷ As Latour (1987, 2005) argues, after scientific discoveries become public, scientific facts, the controversies²⁸ that existed before, between scientists, researchers, administrators, publishers, and anyone else that is part of the actor-network²⁹ get closed

²⁷ I never duelled with them. I did, however, play in several four-player games with them. During my interactions with them, they made sure no one had access to these games outside of the study because they wanted to ensure that no one received extra practice. One day, they “caught” me playing a game while waiting for them to arrive, and they deemed this as “cheating.” I think this is indicative of how these rules do not just have relevance for them, but for everyone else they consider a potential member of their activity.

²⁸ Latour uses the discovery of the DNA model as an example. He also uses Garfinkel, Lynch and Livingston’s (1981) work describing scientists in the process of discovering a pulsar.

²⁹ As mentioned in Chapter Two, Latour uses actor-network to describe any person or thing that has to do with determining how facts, ideas, and knowledge are defined, measured and used.

in a “black box.” These controversies might continue to exist in some form among those in the relevant field, but to the public (or to those in the periphery), the scientific facts become acceptable as real (or real enough).

In retrospect, the findings in both chapters have taken quite a circuitous route in addressing the goals of the research, which was to discover the “meaning-making practices” that players use to make sense of video games. I believe that this route was worth the journey because I had not anticipated the features of play uncovered in the analysis. Or, more precisely, I had not anticipated that these features would be important in shaping how the players constructed meaningful experience out of their activities. Perhaps it is not surprising that the practice of using CA was so informative for this study, as Sacks et al. (1974) point out that many kinds of social activities involve turn-taking. Like Suchman (1987), I extended their work to include human-machine interactions, perhaps not as a speech-exchange system but as an information-exchange system. My findings suggest that meaning-making is synonymous with order-discovering, and that these meaning-making practices are the same as the ones we use to make sense out of everything else. That is, we believe our experience to be orderly. In chapter four, we saw that, for Li, “orderly” was about figuring out what was happening in the game and understanding what a typical player does in this game. In chapter five, we saw how order was constructed, how it evolved and how it was “thingified” over time.

Implications

Both of the stories in the findings showed that obstacles are a feature of play, continually popping up when one of the players diverges from the mutual understanding established by the group. This is nothing new to conversation analysts, who have shown

that repair and maintenance is an ongoing part of everyday interaction. However, these obstacles tell us a few important things about how players interact with the video game. Firstly, it shows that interpretation is not confined to the video game alone, but to the social and physical surroundings where the action occurs. Dourish (2001) argues that human-machine interactions need to be studied as *embodied interactions*, which can reveal how people are shaped by the contingent properties of their environment. We can liken the design of the video game to the “plans” that Suchman (1987) describes in her study of users following instructions for photocopiers. Her critique of cognitive approaches to learning can be applied here to support the argument that the game’s design alone cannot tell us what interactions will unfold, or how players will interpret the action. In other words, while having good game design principles are important, they are far from sufficient to ensure what players would do. In chapter four, we saw that Li’s interpretation made sense and was rooted in selective empirical evidence. Even if we were to say that her interpretation was wrong, we could not say that it was less real than the “correct” interpretation. Likewise, in the following chapter, we saw that the players’ measurement of technique was arbitrary, but still meaningful within the context of their action.

Secondly, these findings suggest that we cannot focus on design alone if we want to understand how we can build games for learning. Studies that support video games for learning argue that players can learn by interacting directly with the system (i.e. the game, the design, the order), and that this supports learning because it is situated in meaningful action (Duke, 1974; Gee, 2004, 2005, 2007; Holland et al., 2003; Koster, 2004; Prensky, 2006). Games might represent a better approach to teaching when compared to rote

memorization, repetitive drilling, or abstract, decontextualized learning, but we should not assume that all players will necessarily come to understand the game's design through interaction alone. The findings presented here, as well as the studies in ethnomethodology and CA, show that we can act in the absence of perfect information and in the presence of contradictory information.

The work that Garfinkel (2008) had written in the 1940s shows his early interest in the problem of human communication. Like many critics of game theory, he believes that people can never have perfect information. He pushes a program of studying how people can not only make sense of their environments, but communicate this in a way that allows others they are interacting with to share that same understanding. Video games are good demonstrations of how people can engage in meaningful action in the face of confusing information. The percentages at the bottom of the screen in SSBM are good examples of information that can lead to contradictory interpretations, because they do not have any logical meaning, nor do they refer to anything specific. Yet, this does not faze the expert players in the group, nor have they fazed the thousands of fans of this game. It is enough that the players understand that a high percentage score is bad, and that that is the only information they need to proceed.

Thirdly, the findings point out the challenge of defining and measuring learning in video games. Experimental designs tend to measure a players' response after a game, to see if they have increased their knowledge or changed their behavior. However, this is an overly simplistic view of learning that fails to capture its many nuances and complexities. Educational researchers have struggled with the idea of designing learning communities. However, Varenne and McDermott (1998) show that people learn and teach all the time,

in all sorts of conditions. Varenne and McDermott compel us to reexamine how we measure learning and the circumstances that allow someone (or some institution) to label another as a failure. More importantly, they ask us to look at the interactional work that occurs during the moments when people succeed or fail in demonstrating their achievement. We see some work going on with the players in this study. Without close analysis, we might have simply labeled Li as a failed player, without noticing the interactional work involved. Similarly, with the players trying to measure technique, we saw that their methods of evaluation emerged out of their interaction, and while the game's scoring system told us who the winner is, it did not tell us what really happened.

On a related note, we also have to be cautious about relying on technology to give us an exact assessment of a situation. We often rely on technology to inform us of things that we cannot directly access or experience, for example, telescopes, ultrasounds, EKG machines, PET scanners, and so on. But such machines do more than create images that we would otherwise not have been able to see, they reconstruct them into ways that are comprehensible to us, or what Latour (1987, 2004, 2005) refers to as a "translation." It is easy to assume that machines have direct access to the phenomena we are interested in and forget that such a translation process exists. There is a parallel problem in educational assessments, especially in the case of standardized testing, where students' achievements and learning trajectories are reduced to a set of test scores. More recently, computers have been used as assessment tools, not only as a test medium, but also as a scoring mechanism. This study cautions against blind faith in this approach, as it renders important processes invisible and fails to provide an accurate account of a situation.

The pursuit of improving educational outcomes has become one of the top issues, not only for the United States, but also the increasingly competitive global community. An issue so broad and complex has, paradoxically, invited many narrow and simple solutions. Mehan's (1979) study of classroom interaction has critiqued how studies on classrooms often oversimplify their analysis of school failure into a narrow handful of factors, and fail to fully (if ever) account for what really happens in the classroom. Since then, we have benefited from the studies by researchers who have given detailed accounts of classroom interaction. Varenne and McDermott's (1998) work reminds us that it is too easy to be seduced by simple explanations; simple, not because they are unsophisticated, but because they reduce people's actions into mechanistic responses to abstract societal forces, or what Garfinkel (1984, 2002) calls being a "cultural dope." The influx of new technologies will continue to make interactions even more complicated to analyze, but our experience continues to exist in a locally embodied world. If we wish to explore how video games might help improve educational outcomes, then we need to look at the lived details of the embodied interaction.

Directions for Further Research

In this final section, I wish to discuss three main areas of research that still need to be conducted. The first recommendation is that we should improve our understanding of how technologies, like video games, affect societies. The second recommendation is that we need to broaden the scope of what games and what communities we study. The third recommendation is that we continue to look at how meanings are constructed, not only by players, but also by game designers, in order that we see the more complete picture of

how intentional meanings are designed, and how they are then translated by players into interpretations that are meaningful to them.

The brief history of video games in chapter one covered how it has impacted the global society over the decades and how it was shaped by various technical, social, cultural, and economical trends around the world. This overview was intended to provide a historical context on the types of video games that players are playing today, but it ought to serve another purpose. Historians and anthropologists have always given us a picture of what and how technologies are used in societies. In science and technological studies, social scientists have made it their specific task to describe how technologies have shaped societies over time. A proper historical understanding is important because it is easy to take an everyday technology for granted, and assume that it has always been used and understood the way that it is today. Technologies such as electricity, refrigerators, and telephones might seem indispensable today, but were met with resistance at the time they were introduced (Cowan, 1985; Kline, 2003). Even though these technologies were designed to improve the quality of living, people were not willing to change their routines, especially when these routines worked. More recent studies on the Internet serve to point out that we might also look at people who are indirectly affected by a technology (Wyatt, 2003). It might be easy to write off non-users as simply irrelevant, without considering that there are different kinds of non-users, some of whom choose not to use a technology, others of whom do not have access to it. These types of historical studies help us understand and appreciate the practical grounds of people's everyday actions, and to remind us that having the potential to improve on people's lives does not mean that they will incorporate it without reservation.

As such, the first recommendation is that we look at the historical and contemporary uses of technologies, see how they have been (or are being) used by different parts of society, and understand the types of resistance that occur. Resistance can come in many forms. At times, it is simply because it does not fit into their routines. An example of this would be electric stoves, which people were slow to embrace because the fire stove had a broader use (i.e. for cooking and for heating). Other times, it might infringe upon something they valued, such as the problem that electric companies ran into when they had to build electric wires across people's property. People might also embrace the technology, but use it in unintentional ways, such as the case when people thought it was natural to use party lines to listen in on their neighbors' telephone conversations. These forms of resistance do not simply suggest that people are stubborn in their ways, but to say that, when we ask people to start using a new technology, we are asking them to make considerable changes in routines that might have worked quite well for them. Trying to introduce a new technology into a classroom would seem especially challenging, since there seems to be many factors that already restrict what teachers can do. Whether we are talking about using video games in the classroom, or for a broader educational context, we need to understand the practical implications that it has on the users, and to involve all users (and perhaps non-users) in the process of design and implementation.

The second recommendation is that we incorporate more diversity in the types of games and players we choose to study. Because of the large variety of games and player communities, this is an especially daunting challenge. Nonetheless, in focusing on a narrow genre of games as the basis of our support for using video games in schools, we

risk privileging one type of gaming practice over others. Using the Pew Internet and American Life Project (Lenhart et al., 2008) as a rough guideline, we see that there is a definite gap in the types of games that researchers have chosen to study. In focusing on a narrow genre of games as our basis of recommending the use of video games in the classroom, we marginalize those who do not play those genres, even if they enjoy video games. We should also consider what this means to non-players as well. Most studies of video games, including this present one, focus on players who are self-selected. These players already enjoy video games, and the specific genres represented in the study, and probably should not be the only basis for recommending video games for schools. A broader scope of games and players will tell us more about whether video games should be directly used in the classroom, or play a more supporting role, or stay out of it altogether.

The third recommendation reiterates what has been foundation of this study, which is to conduct further video game research that focuses on the details of interactions as they unfold in situated time and space. Suchman (1987) writes in the conclusion of her book: “The emergent properties of action means that it is not predetermined, but neither is it random. A basic research goal for studies of situated action, therefore, is to explicate the relationship between the structures of action and the resources and constraints afforded by physical and social circumstances.” (p. 179). This is a good guideline for any future research on video games, and on human-machine configurations in general.

This is an exciting moment for game researchers. In part, this is due to the newness of video games, and the speed at which innovations arrive. The history of video games shows that no convention stays dominant forever, and a new generation of

consoles can easily tip the balance and change the playing habits of consumers in a brief timeframe. The enthusiasm for video games for education, however, needs to be tempered with a critical and reflective approach that is supported by empirical evidence based on the lived-in details of play-in-interaction. Technologies can create new possibilities, but they also create new constraints. What these possibilities and constraints are cannot be fully pre-determined, and can only be understood in context.

BIBLIOGRAPHY

- Aarseth, E. (2001). *Computer game studies, year one*. Retrieved April 3, 2004, from <http://www.gamestudies.org/0101/editorial.html>
- Bartle, R. A. (1996). *Hearts, clubs, diamonds, spades: Players who suit MUDs*. Retrieved May 15th, 2006, from <http://www.mud.co.uk/richard/hcds.htm>
- Bartlett, L. (2007). To seem and to feel: Situated identities and literacy practices. *Teachers College Record, 109*(1), 51-69.
- Bateson, G. (1985). *Steps to an ecology of mind*. New York: Jason Aronson.
- Berger, P. L., & Luckmann, T. (1966). *The social construction of reality*. New York: Doubleday.
- Bernard, H. R. (2002). *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed.). Walnut Creek, CA: AltaMira Press.
- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Berkeley: The University of California Press.
- Borgmann, A. (1999). *Holding on to reality*. Chicago: University of Chicago Press.
- Brown, J. S., Rubenstein, R., & Burton, R. (1976). *Reactive learning environment for computer assisted electronics instruction*. Cambridge, MA: Bolt Beranek and Newman, Inc.
- Castells, M. (2001). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford: Oxford University Press.
- Cowan, R. S. (1985). How The Refrigerator Got Its Hum. In D. A. MacKenzie & J. Wajcman (Eds.), *The social shaping of technology: How the refrigerator got its hum* (pp. 202-218). Philadelphia: Open University Press.
- Dourish, P. (2001). *Where the action is: The foundations of embodied interaction*. Cambridge, MA: MIT Press.
- Duke, R. (1974). *Gaming: The future's language*. New York: Sage Publications.

- Dyson, A. H. (1997). *Writing superheroes: Contemporary childhood, popular culture, and classroom literacy*. New York: Teachers College Press.
- Friedman, T. (1999). Civilization and its discontents: Simulation, subjectivity, and space. In G. M. Smith (Ed.), *On a silver platter: CD-ROMs and the promises of new technology* (pp. 132-150). New York: New York University Press.
- Gardner, H. (1991). *The unschooled mind: How children think and how schools should teach*. New York: Basic Books.
- Gardner, H. (1999). *The disciplined mind*. New York: Simon and Schuster.
- Garfinkel, H. (1984). *Studies in ethnomethodology*. Cambridge, UK: Polity Press.
- Garfinkel, H. (1986). Remarks on ethnomethodology. In J. J. Gumperz & D. H. Hymes (Eds.), *Directions in sociolinguistics: The ethnography of communication* (pp. 301-324). New York: Basil Blackwell Ltd.
- Garfinkel, H. (2002). *Ethnomethodology's program: Working out Durkheim's aphorism*. Lanham, MD.: Rowman & Littlefield Publishers.
- Garfinkel, H. (2008). *Toward a sociological theory of information*. Boulder: Paradigm Publishers.
- Garfinkel, H., Lynch, M., & Livingston, E. (1981). The work of a discovering science construed with materials from the optically discovered pulsar. *Philosophy of the Social Sciences*, 11(2), 131-158.
- Garfinkel, H., & Sacks, H. (1970). On formal structures of practical actions. In J. C. McKinney & E. A. Tiryakian (Eds.), *Theoretical sociology: Perspectives and developments* (pp. 337-366). New York: Appleton-Century-Crofts.
- Gee, J. P. (1996). *Social linguistics and literacies* (Second ed.). London: Taylor and Francis Group.
- Gee, J. P. (1999). *Introduction to discourse analysis: Theory and method*. New York: Routledge.
- Gee, J. P. (2003). *What video games gave to teach us about learning and literacy*. New York: Palgrave Macmillan.
- Gee, J. P. (2004). *Situated language and learning: A critique of traditional schooling*. New York: Routledge.
- Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-learning*, 2(1), 5-16.

- Gee, J. P. (2007). Learning and games. In K. Salen (Ed.), *The ecology of games: Connecting youth, games, and learning* (pp. 21-40). Cambridge, MA: The MIT Press.
- Gilbert, G. N., & Mulkay, M. (1981). Contexts of scientific discourse: Social accounting in experimental papers. In K. Knorr-Cetina, R. G. Krohn & R. Whitley (Eds.), *The social process of scientific investigation* (pp. 269-284). Boston: Dordrecht Reidel Publishing.
- Goffman, E. (1961). *Encounters: Two studies in the sociology of interaction*. Indianapolis: The Bobbs-Merrill Company, Inc.
- Goffman, E. (1969). *Strategic interactions*. Philadelphia: University of Pennsylvania Press.
- Goffman, E. (1974). *Frame analysis*. Boston: Northeastern University Press.
- Goodwin, C., & Goodwin, M. H. (1996). Seeing as a situated activity: Formulating planes. In Y. Engestrom & D. Middleton (Eds.), *Cognition and communication at work* (pp. pp. 61-95). Cambridge: Cambridge University Press.
- Goodwin, C., & Heritage, J. (1990). Conversation analysis. *Annual Review of Anthropology*, 19, pp. 283-307.
- Goodwin, M. H. (1995). Assembling a response: Setting and collaboratively constructed work talk. In P. Ten Have & G. Psathas (Eds.), *Situated order: Studies in the social organization of talk and embodied activities* (pp. 173-186). Washington, D.C.: International Institute for Ethnomethodology and Conversation Analysis.
- Goodwin, M. H. (2006). *The hidden life of girls: Games of stance, status, and exclusion*. Malden, MA: Blackwell.
- Goody, J., & Watt, I. (1968). The consequences of literacy. In J. Goody (Ed.), *Literacy in traditional societies*. Cambridge: Cambridge University Press.
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. Cambridge: Cambridge University Press.
- Heritage, J. (1984). *Garfinkel and ethnomethodology*. New York: Polity Press.
- Holland, W., Jenkins, H., & Squire, K. (2003). Theory by Design. In M. J. P. Wolf & B. Perron (Eds.), *The video game theory reader* (pp. 25-46). New York: Routledge.
- Hutton, C., & Bolton, K. (2005). *A dictionary of Cantonese slang*. Honolulu: University of Hawaii Press.

- jagodzinski, j. (2004). *Youth fantasies: The perverse landscape of the media*. New York: Palgrave Macmillan.
- Jones, G. (2002). *Killing monsters: Why children need fantasy, super heroes, and make-believe violence*. New York: Basic Books.
- Kaufman, F. (1944). *Methodology of the social sciences*. London: Oxford University Press.
- Kent, S. L. (2001). *The ultimate history of video games: From Pong to Pokémon and beyond* (1st ed.). Roseville, CA: Prima Pub.
- Kinzer, C. (2005). The intersection of schools, communities, and technology: Recognizing children's use of new literacies. In R. A. Karchmer, M. M. Mallette, J. Kara-Soteriou & D. J. Leu (Eds.), *Using the internet to support new literacies: Innovative approaches to literacy education* (pp. 65-84). Newark, DE: International Reading Association.
- Kleifgen, J. (2001). Assembling talk: Social alignments in the workplace. *Research on Language and Social Interaction*, 34(3), 279-308.
- Kleifgen, J., & Kinzer, C. (2009). Alternative spaces for education with and through technology. In H. Varenne, E. Gordon & L. Lin (Eds.), *Theoretical perspectives on comprehensive education: The way forward*. Lewiston, NY: Mellen Press.
- Kline, R. (2003). Resisting consumer technology in rural America: The telephone and electrification. In N. Oudshoorn & T. J. Pinch (Eds.), *How users matter: The co-construction of users and technologies* (pp. 51-66). Cambridge, MA: MIT Press.
- Kohler, C. (2005). *Power-up: How Japanese video games gave the world an extra life*. Indianapolis, IN: BradyGames.
- Koster, R. (2004). *Theory of fun for game design*. Scottsdale: Paraglyph Press.
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. Chicago: University of Chicago Press.
- Lankshear, C., & Knobel, M. (2006). *New literacies: Changing knowledge in the classroom* (2nd ed.). New York: Open University Press.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.
- Latour, B. (2004). *Politics of nature: How to bring the sciences into democracy*. Cambridge, MA: Harvard University Press.

- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.
- Latour, B., & Woolgar, S. (1986). *Laboratory life: The construction of scientific facts*. Princeton: Princeton University Press.
- Lave, J. (1988). *Cognition in practice*. Cambridge: Cambridge University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Leander, K., & McKim, K. (2003). Tracing the everyday 'sittings' of adolescents on the Internet: A strategic adaptation of ethnography across online and offline spaces. *Education, Communication & Information*, 3(2), 211-240.
- Lemke, J. L. (2006). Toward critical multimedia literacy: Technology, research, and politics. In M. C. McKenna, L. D. Labbo, R. D. Kieffer & D. Reinking (Eds.), *International handbook of literacy and technology*, vol. 2 (pp. 3-14). Mahwah: Lawrence Erlbaum Associates.
- Lenhart, A., Kahne, J., Middaugh, E., Macgill, A. R., Evans, C., & Vitak, J. (2008, September 16, 2008). *Teens, video games and civics: Teens' gaming experiences are diverse and include significant social interaction and civic engagement*. Retrieved November 5th, 2008, from http://www.pewinternet.org/pdfs/PIP_Teens_Games_and_Civics_Report_FINAL.pdf
- Lévi-Strauss, C. (1966). *The savage mind*. Chicago: University of Chicago Press.
- Linderoth, J., Lindstrom, B., & Alexandersson, M. (2004). Learning with computer games. In J. Goldstein, D. Buckingham & G. Brougere (Eds.), *Toy, games, and media* (pp. 157-176). Mahwah: Lawrence Erlbaum Associates.
- Livingstone, S. M. (2002). *Young people and new media: Childhood and the changing media environment*. London: Sage Publications.
- Loftus, G., & Loftus, E. (1983). *Mind at play*. New York: Basic Books.
- Lynch, M. (1993). *Scientific practice and ordinary action: Ethnomethodology and social studies of science*. Cambridge: Cambridge University Press.
- Matthews, S., & Yip, V. (1994). *Cantonese: A comprehensive grammar*. New York: Routledge.
- Mead, G. H. (1934). *Mind, self and society*. Chicago: The University of Chicago Press.

- Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge: Harvard University Press.
- Morris, C. (1934). Introduction. In C. Morris (Ed.), *Mind, self and society*. Chicago: The University of Chicago Press.
- New London Group, T. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-93.
- Newman, J. (2002a). In search of the videogame player. *New Media & Society*, 4(3), 405-422.
- Newman, J. (2002b). The myth of the ergodic videogame, *Game Studies*, 2(1).
- Newman, J. (2004). *Videogames*. New York: Routledge.
- Nintendo. (2001). *Super Smash Bros. Melee*.
- Ong, W. J. (1982). *Orality and literacy: The technologizing of the word*. New York: Methuen.
- Oxford, R., & Crookall, D. (1990a). Linking language learning and simulation/gaming. In R. Oxford & D. Crookall (Eds.), *Simulation, gaming, and language learning* (pp. 3-23). New York: Newbury House Publishers.
- Oxford, R., & Crookall, D. (1990b). Making language learning more effective through simulation/gaming. In R. Oxford & D. Crookall (Eds.), *Simulation, gaming, and language learning* (pp. 109-117). New York: Newbury House Publishers.
- Perron, B. (2003). From games to players and gameplayers: The example of interactive movies. In M. J. P. Wolf & B. Perron (Eds.), *The video game theory reader* (pp. 237-258). New York: Routledge.
- Poole, S. (2000). *Trigger happy: Videogames and the entertainment revolution*. New York: Arcade Publishing.
- Prensky, M. (2006). *"Don't bother me Mom, I'm learning!": How computer and video games are preparing your kids for twenty-first century success and how you can help!* (1st ed.). St. Paul, MN: Paragon House.
- Rancière, J. (1991). *The ignorant schoolmaster: Five lessons in intellectual emancipation* (K. Ross, Trans.). Stanford: Stanford University Press.

- Rawls, A. W. (2002). Editor's introduction. In H. Garfinkel & A. W. Rawls (Eds.), *Ethnomethodology's program: Working out Durkheim's aphorism*. Boulder: Rowman and Littlefield.
- Rouse, R. (2005). *Game Design: theory and practice* (2nd ed.). Plano, TX: Wordware Publishing, Inc.
- Sacks, H. (1984). Notes on methodology. In J. M. Atkinson & J. Heritage (Eds.), *Structures of social action: Studies in conversation analysis* (pp. 21-27). Cambridge: Cambridge University Press.
- Sacks, H. (1992). *Lectures on conversation*. Oxford: Blackwell Publishing.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, 50(4), 696-735.
- Schegloff, E. A. (1996). Issues of relevance for discourse analysis: Contingency in action, interaction and co-participant context. In E. H. Hovy & D. R. Scott (Eds.), *Computational and conversational discourse: Burning issues - An interdisciplinary account* (pp. 4-35). New York: Springer.
- Scollon, R., & Scollon, S. B. K. (1981). *Narrative, literacy, and face in interethnic communication*. Norwood: Ablex Publishing.
- Scribner, S., & Cole, M. (1981). *The psychology of literacy*. Cambridge: Harvard University Press.
- Sefton-Green, J. (2006). Youth, technology, and media cultures. *Review of Research in Education*, 30, pp. 279-306.
- Segerstråle, U. (2000). Science and science studies: Enemies or allies? In U. Segerstråle (Ed.), *Beyond the science wars*. Albany: State University of New York Press.
- Seiter, E. (2004). The Internet playground. In J. Goldstein, D. Buckingham & G. Brougere (Eds.), *Toy, games, and media* (pp. 93-108). Mahwah: Lawrence Erlbaum Associates.
- Shaffer, D. W. (2007). *How computer games help children learn*. New York: Palgrave Macmillan.
- Spina, S. U. (2004). Power plays: Video games' bad rap. In S. R. Steinberg & J. L. Kincheloe (Eds.), *Kinderculture: The corporate construction of childhood* (pp. 254-283). Oxford: Westview Press.
- Spradley, J. P. (1980). *Participant observation*. New York: Holt, Rinehart and Winston.

- Squire, K. (2003). Video games in education. *International Journal of Intelligent Simulations and Gaming*, 2(1), 49-62.
- Squire, K. (2004). *Replaying history: Learning world history through playing Civilization III*. Retrieved April 3, 2004, from http://website.education.wisc.edu/kdsquire/REPLAYING_HISTORY.doc
- Squire, K. (2006). From content to context: Videogames as designed experience. *Educational Researcher*, 35(8), 19-29.
- Steinkuehler, C. (2004). Learning in massively multiplayer online games. In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon & F. Herrera (Eds.), *Proceedings of the Sixth International Conference of the Learning Sciences* (pp. 521-528). Mahwah: Erlbaum.
- Steinkuehler, C., Black, R. W., & Clinton, K. A. (2005). Researching literacy as tool, place, and way of being. *Reading Research Quarterly*, 40(1), 7-12.
- Street, B. V. (1984). *Literacy in theory and practice*. Cambridge: Cambridge University Press.
- Suchman, L. A. (1987). *Plans and situated actions: The problem of human-machine communication*. Cambridge: Cambridge University Press.
- Sutton-Smith, B. (1997). *The ambiguity of play*. Cambridge: Harvard University Press.
- ten Have, P. (1990). Methodological issues in conversation analysis. *Bulletin de Methodologie Sociologique*, 27, pp. 23-51.
- ten Have, P. (2004). *Understanding qualitative research and ethnomethodology*. Thousand Oaks: Sage Publications.
- Turkle, S. (1995). *Life on the Screen: Identity in the age of the Internet*. New York: Simon and Schuster.
- Varenne, H. (2007). Difficult collective deliberations: Anthropological notes toward a theory of education. *Teachers College Record*, 109(7), 1559-1588.
- Varenne, H., & McDermott, R. (1998). *Successful failure: The school America builds*. Boulder, CO: Westview Press.
- Williams, D. (2003). *Trouble in River City: The social life of video games*. Retrieved April 15th, 2006, from <https://netfiles.uiuc.edu/dcwill/www/research.html>

Wyatt, S. (2003). Non-users also matter: The construction of users and non-users of the Internet. In N. Oudshoorn & T. J. Pinch (Eds.), *How users matter: The co-construction of users and technologies* (pp. 51-66). Cambridge, MA: MIT Press.