

In-Game, In-Room, In-World: Reconnecting Video Game Play to the Rest of Kids' Lives

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Introduction

One of the burning questions that people ask about video games, including most parents we've told about our study of young people playing video games in their homes, is whether playing these games affects kids' lives when the machine is off. In particular, people want to understand what young people learn playing games that they use, or adapt, in the rest of their lives. This question is the focus of our chapter.

Learning scientists use the term *transfer* to refer to the phenomenon of taking what you have learned in one context and transferring it to another. Without getting into the technical details, we note that academic discussions about transfer are fraught with theoretical confusions and fierce debate. Not only do learning scientists disagree about what causes transfer or what prevents it from happening, they disagree even about what counts as transfer (i.e., knowing when they see it) and how to assess it when they think it might be taking place.

These questions are not merely academic pursuits, as our focus on video game play should make clear. We really do want to know whether playing first-person shooters actually teaches players how to use weapons in real life. Or whether playing simulation games that model flying jets increases the reliability and judgment pilots exercise in the cockpits of real planes. What about a young adult who has become an acknowledged leader of a successful clan in *World of Warcraft*; how would we know whether that success has an effect, and what kind of effect, on how that person leads others in collective action in her daily workplace? Does designing virtual cities in *SimCity* provide a starting point for a career designing real cities? Is that starting point different in any substantive way from building cities with wooden blocks?

Though we won't be directly addressing the complex arguments that animate the transfer debate in this chapter, we do see video games as an important type of human activity against which to pose the basic question of transfer, for at least two reasons. First, there are *widely* differing views on the positive, negative, and noneffects of video games on other aspects of life or learning. Second, video game play consumes an enormous amount of many young people's time and energy; this is time and energy that could be spent elsewhere, or—depending on the answer to the transfer question—spent playing *more* games. Consider the following thought experiment: imagine that a learning scientist definitely proved, all other things being the same, that a year spent immersed in a game-based curriculum better prepared a young person for a successful life and career than that same year spent in a traditional high school curriculum? What sort of changes might a finding like that suggest to the way we conceive of education and to the future of learning? It is clear that a lot hangs on the transfer question.

One of the limitations of the research tradition that has most closely concerned itself with transfer—academic psychology—is that its claims for transfer come out of experiments that researchers set up, usually around tasks that are not particularly consequential or common in people’s lives. The tasks are selected, first and foremost, because they enable conclusions to be drawn within the logic and particular rigor of experimental research. Math, chess, and physics problems have been among the favorite tasks for transfer research in psychology.

An alternative approach to studying transfer is rooted in an ethnographic tradition that is sometimes called situated, everyday, or distributed cognition.¹ The work we report on in this chapter comes out of this tradition. Research in this tradition insists upon an “outdoor psychology”² in which researchers get out of the laboratories and into the fields of activity that people themselves, rather than psychologists, organize.³ In taking this different approach from academic psychology, while sharing similar questions and concepts, researchers of everyday cognition give up the “control” of experimental research for “ecological validity.”⁴ Ecological validity is about having a basis to credibly claim that our research accounts are about how and what people do, learn, and think in daily life, and not simply about what they do within the context of contrived laboratory tasks.

Coming at our study from a different direction we are struck, as ethnographers of everyday cognition and informal learning, by the relative scarcity of empirical research on video game play. Why this surprises us is that video games have been called “a new medium,”⁵ “a new form of art,”⁶ a new educational approach,⁷ and just about a new everything else. Sales of its products support a multibillion dollar industry that continues to grow. And while there is a good deal of innovative writing—both popular and academic—about video games, only a small percentage of this writing arises from ethnographic studies of game play.⁸

The research we describe in this chapter is ethnographic, based on a six-month-long study of young people in different families playing video games in their homes, using their own games and game systems. We video-recorded young people playing video games and interviewed them later when we had questions that our analyses of the recordings of game play could not answer. Our study involved eight focal kids and five friends, aged 9–15, and lasted approximately six months. We recruited the participants through advertisements on Craigslist, flyers in gaming stores, and word of mouth. We visited each focal participant approximately once a week and observed his or her play. Among our core participants we had four boys and four girls, including two sets of siblings. We purposefully selected participants in our study to maximize variation; this is a common strategy when pursuing a new research direction because it helps define an uncharted territory.

We came to this study with a primary interest in how children spend their time and what they learn in the process. Because children are interested in video games and devote energy and time to them, we have done so as researchers. This is part of a larger project to understand learning within and across informal and formal settings.⁹ This focus distinguishes us from most others who write about video games from either side of a current flare-up in the Culture Wars. The two sides of this debate give us, on one hand, a view of video games as mind-numbing, antisocial, low culture activities or, on the other hand, as wellsprings of new cultural production, positive identity formation, and learning of all shapes and sizes. Our position in this—before we can decide what is and is not valuable about video games, we need to get much better descriptions of what people actually do and learn playing video games under as naturally occurring conditions as possible.

A steady theme in much writing about video games is what we will call the *separate worlds view* of video game play, a perspective that runs perhaps intentionally in exactly the opposite

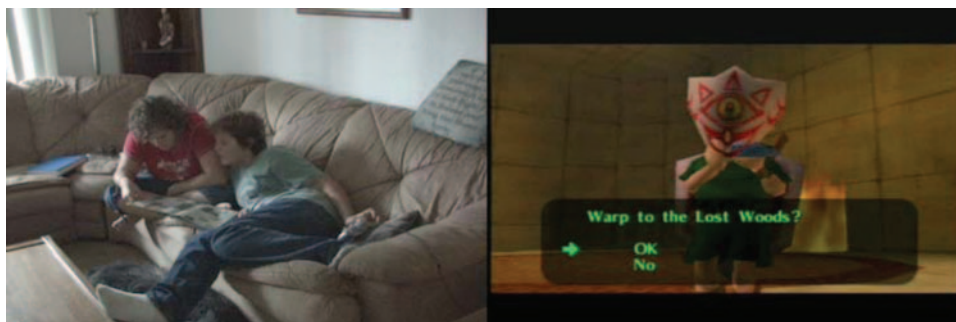


Figure 1

An “in-room” and “in-game” recording. Brandon and Holly consult a strategy guide at a decision point in the game *Legend of Zelda—Ocarina of Time*.

direction than questions of transfer lead us. The *separate worlds view* holds, in different ways for different writers, that game play is a world apart of people’s other activities in everyday life. Whether this separateness is framed in technocentric terms like “immersion in virtual worlds” or in academic terms that conceptualize video games as a “discourse” or “semiotic domain,”¹⁰ we see a persistent bent that analyzes video game play as largely disconnected from the other moments and activities of people’s lives.

Our goal in this chapter is not to dispute the separate worlds view directly, but to enlarge it by looking beyond the game space. What our study shares with the separate worlds view is its treatment of video game play as a cultural practice worthy of study in its own right. Such a view is a necessary antidote to taking account of popular cultural forms like video games and television *only* to the degree that they impact, either positively or negatively, other more normatively valued activities like school, work, and conventional definitions of family life. Where we seek to enlarge the separate worlds view is with an ethnographically grounded set of case materials that show that the culture of game play is one that is quite tangled up¹¹ with other cultural practices, which include relations with siblings and parents, patterns of learning at home and school, as well as imagined futures for oneself.

In this chapter our goal is *not* to provide causal explanations of transfer between video game play and other life activities, but rather to provide a set of careful descriptions of how “in-game” activity is tangled up with activity “in-room,” and in the wider worlds of activity that young people inhabit. Our chapter will argue that “in-game,” “in-room,” and “in-world” are more permeable and blurred than the separate worlds view would suggest. And we mean “in-room” literally. Unlike empirical studies that implicitly take a separate worlds view,¹² we record not only a stream of in-game play (taken directly from the console or computer), but also what is going on in the living and family rooms where the players are sitting, crouching, or reclining. Phones ring, parents come in (or argue in the next room), and players interact in a variety of ways with friends, siblings, and material resources—other than the game—that are *in-room*.

Although we have collected various kinds of data, the primary form is audio-video recordings that synchronize the “in-game” and “in-room” recordings into a single image (figure 1). These recordings form the foundation of the analysis presented in this chapter. Our video-based ethnographic approach is similar conceptually and methodologically to studies of technology use in work settings.¹³ Work of this kind draws its boundary around “functional

systems” in ways that are sometimes willfully ambivalent toward received boundaries (either existing theoretical or commonsense ones), such as those between “in-game” and “in-room.” We are after the ways that activity and meaning circulate; if these circulations take us across characters moving about in the game, to a conversation in a living room, to a relationship with a friend, that is where our analysis goes.

Overview of Our Case Material

In this section we present a collection of vignettes drawn from ethnographic field materials depicting how video game play is tangled up in other parts of kids’ lives, including their relationships with siblings, parents, schools, and their own futures. We will show how actual game play is shaped, sometimes in very consequential ways, by people and material resources present in the room but invisible “in-game.” For example, one of our participants, Tyler, frequently uses “cheats” during his game play. Tyler’s use of cheats differs in intention and deployment depending on who he is playing with, what game he is playing, and how he has configured the game. We also describe trajectories of learning with video games and how in-room resources shape this learning. For example, Rachel often draws on her brother’s expertise when playing games. Her questions are most often focused on specific aspects of the game, such as where in the game she can find the items she needs at that moment, rather than on general strategies for how to be successful. Rachel’s brother functions for her as a just-in-time guide and instructor for a course of learning she herself is organizing in the moment.

Moving outward from how “in-game” is shaped by what and who are “in-room,” we will also describe how game play seems to fit into the rest of kids’ lives and how young people actively make connections between events in-game and events in their everyday lives (in-world). In order to better understand the question of how kids’ video game play is tied up in their other activities, we also focused on one specific activity in the kids’ daily round outside of game play—homework. We thought homework would make an interesting comparison for some of the following reasons: (a) like video game play, homework is something kids do at home in shared family spaces and their rooms (i.e., the same spaces games were played in), (b) homework, like games, is—in varying degrees—strategic, repetitive, scored, and designed to challenge, and (c) there are different moral stances about how homework, like games, *ought* to be played (i.e., should they be pursued collaboratively, should you cheat, etc.). Homework, therefore, provided us with a strategic context to compare with video game play.

Connections Between In-Game and In-Room: How Many Ways Can Kids Learn to Play Together—Let Us Count the Ways

In this first of two sections of vignettes drawn from our ethnographic case material, we present stories that, together, point to a remarkable variety of *learning arrangements* that young people create among themselves while playing video games. These vignettes clearly point to in-game and in-room connections, since it is through interactional activities in-room that most of the identifiable learning moments in our data were transacted. Also, in all cases presented here, and in most of those included in our wider data, these arrangements involve collaboration across young people rather than young people in solo interaction with a game system. Later in the chapter, we discuss the importance of both the diversity of learning arrangements and the fact that most of the learning happens in the context of varied arrangements of people working together.

Vignette 1—Cory the Expert as Just-in-Time Resource for Rachel the Novice

This is the first of five vignettes that show ways that young people learn and teach together while playing video games. In this vignette, we describe Rachel (age 15) and her younger brother Cory (age 12). Among all the participants in the study, Rachel spent the least amount of time each week playing video games; she was not an avid player. Not only did she spend little time playing (compared to other kids in our study) but also the games she played were not chosen; they were given to her as gifts or purchased by her younger brother, Cory, who was an avid game player. Cory also held the family memory of games; Rachel often deferred to him regarding how long they had owned a particular game or which version it was. Unlike in other families in our study, siblings Rachel and Cory seldom played together because, as reported by Rachel, they had very different ways of playing. However, Rachel relied heavily on her brother for help while she played. As she played or sought to begin playing, she often asked him very specific questions. Her questions were extremely focused, relating to particular game moves or to identifying unfamiliar icons on the screen. Cory was, to borrow a phrase from business jargon, a just-in-time resource for Rachel. The interaction in Segment 1 demonstrates how Rachel, while playing *Age of Empires II: Conquerors*, sought specific advice about killing boars from the younger sibling Cory. Once her brother provided the advice she needed (lines 2–4), Rachel immediately continued her hunting task. Cory continued to provide strategic information (line 7); however, it appeared Rachel was no longer paying attention, interrupting her brother to comment on her current activity (line 8).

Segment 1

1. *Rachel*: What about boars, bro. Would it be a good idea if my eagle warriors kill the boar?
2. *Cory*: No, then there would be no fruit—I mean no food. But if you get lots of villagers coming together=
3. *Rachel*: How many villagers do I have to have to do it?
4. *Cory*: Just have like three.
5. *Rachel*: Three?
6. [As Cory speaks, Rachel gathers two villagers. She scrolls through her village looking for a third.]
7. *Cory*: But if you're gonna actually start building up your economy, you should have like 8 on food. Like 8 on wood, like=
8. *Rachel*: =Oh! I'm gonna be so mad if I can't find that stupid person that got lost.

[*Rachel 2005-11-12.00:04:30.05*]

For Rachel, video game play seemed to be about having an experience of control. As she told us, “So you're in control and you have these different decisions that you have to make to um meet the goal” [*Rachel 2006-03-18_P1.00:12:33.21*]. She explained to us her preference for *Age of Empires II* over *Zoo Tycoon* in terms of control:

But the other game [*Age of Empires II*]? You have so much control over it? That it's more—like (.) I don't know. Like the other game? I like the control of having the whole—I can do what ever I want.

[*Rachel 2006-03-18.00:11:12:20*]

Rachel had available other ways of learning to play the game, including reading manuals and trial and error, but we observed her doing very little of either. In our view, her emphasis on control meant that she sought out the learning resource that allowed her the greatest control over the learning experience. In this case, the learning resource was her brother's

knowledge, which she could draw on very selectively without having to bother with other material that she did not deem relevant to her immediate goals. Further support for this interpretation of the way Rachel organized learning for herself as a video game player can be found in the fact that she generally avoided in-game tutorials because “it’s kind of annoying to have them like hanging over you and you have like no control over what you do” [Rachel 2006-04-15.00:10:44:06]. In other words, the tutorials, not Rachel, were in control of the timing and direction of the learning. The way that Rachel selectively drew upon her brother as a just-in-time resource and maintained focused control of her own learning poses some interesting questions for our general theme about the connection between in-game, in-room, and in-world activity. Does it suggest a person who maintains control in the rest of her life, with game play simply another expression of this control, or might games represent a unique context for its expression as compared, for example, with school, where she might have very limited control of her own learning paths? We cannot answer the question at this point, but will return to it later in the chapter.

Vignette 2—In the On Deck Circle: Apprenticing into Game Play

In this vignette, we describe another learning arrangement across a sister and brother. Our observations of Mikey (age 15) and Maddy (age 8) lead us to characterize their relationship around video games as an apprenticeship, something quite different from the arrangement that developed across Rachel and her brother Cory. In the instances presented here, Mikey helped his younger sister Maddy play her own games by advising her, in an ongoing way, on which game to play, and stepping in to assist when the system she was playing was not working.

Maddy’s involvement in game play resembled other forms of apprenticeship in work settings.¹⁴ It was Mikey (the older), not Johnny, who took on the exclusive role of master to Maddy’s apprentice. This apprenticeship was not only a particular social arrangement (between Maddy and Mikey) but also a physical one in the room. Typically, in an inner circle in the room, Mikey and Johnny were at play, with Maddy at the periphery observing, often commenting, and sometimes entering play under the watchful eyes of her brother Mikey. Sometimes while the boys played, Maddy would sit behind them and play with other toys, or with an older portable *Gameboy*, almost as if in an “on deck” position. When the opportunity to play came, she would literally move up into the inner circle to play the game on the television screen with Johnny and Mikey. The physical positioning of the children in the room was such that Maddy was within an appropriate “horizon of observation”¹⁵ and could act as a peripheral participant to Johnny and Mikey’s play, before moving into position to actually join the play. When Maddy did play, a controller would have to be brought up from the basement (indicating further the atypicality of three-person play in this group of siblings) and there was a deliberate pause in the action.

An example of Mikey acting as guide for Maddy, a relative newcomer to video games, is represented in Segments 2 and 3 (below). These two instances, which took place within minutes of each other, show Mikey providing assistance to Maddy as she requests it, illustrating the working apprenticeship that formed between them.

Segment 2

1. [Maddy slides off a chair in the back of the room toward Mikey, who is sitting on the floor in front of the TV playing a video game with Johnny. Maddy asks Mikey for help with her Barbie game.]

2. *Mikey*: You really don't want to Maddy, you'll lose on every game because all of the games are color coded.
3. *Maddy*: [inaudible] color=
4. *Mikey*: Maddy you'll lose on every game cause when you've got to do a puzzle or you've gotta=
5. *Maddy*: I don't do puzzles.
6. *Mikey*: OK what do you do?
7. *Johnny*: Mikey look at my little PK thunder [referring to the video game on the TV which is now paused].
8. *Mikey*: Woah.
9. *Maddy*: I do:: shirts, I do:: lipstick=
10. *Mikey*: =right oh Maddy you'd never be able to tell especially with the lipstick. Cause they are all colors Maddy.
11. *Maddy*: It's really hard on the lipstick now because I've gotten far.
12. [As Maddy walks out of the room. Mikey and Johnny continuing playing the game on the TV. Maddy comes back into the room eighteen seconds later.]
13. *Maddy*: I'm just going to try it anyway.

[*Johnny and Mikey 2005-09-16_00:27:38.04*]

In this segment, the initial arrangement of their bodies in relation to the television screen was representative of the inner and outer circles of play described above; Johnny and Mikey sat close to the screen and Maddy observed from the periphery. At the beginning of Segment 2, Maddy slid off her chair toward the inner circle and asked Mikey for help with her Barbie game (see Segment 2, line 1). Mikey recommended that she not play the Barbie game, because it involved matching colors and the screen on their older *Gameboy* showed only gray scale: "You really don't want to Maddy, you'll lose on every game because all of the games are color coded." Maddy, however, did not put the game down, offering a reply that we interpreted to mean that she thought his commentary applied only to a single category of games on the handheld game device but not to the one she was playing (i.e., "I don't do puzzles," line 5). In the end, Maddy left the room and declared that she would "try it anyway" (line 13). This is an instance where Mikey attempted to guide his younger sister when she encountered some technical limitations of a particular video game display. It shows how Mikey acts as a guide by providing advice to Maddy as she plays a game; it shows also, in her not taking his advice, that Maddy is playing an active rather than a simply passive role in the apprenticeship and in her own learning.

In the next segment (Segment 3, below), which took place four minutes after Segment 2, Maddy again looked to Mikey for help in setting up the game. After a bit of disagreement about the problem Maddy was having (lines 3–8), Mikey took the game system from her (line 11). Notice that the game system, not Maddy, entered the inner circle of play. It suggests a typical arrangement for an apprenticeship; the work of the master (Mikey) is ongoing and is interrupted for a moment of instruction for or by the novice, but with an assumption embodied in the arrangement—that the master will quickly return to the activity at hand¹⁶ while she remained at the periphery. After Maddy passed Mikey the game, he was able to get it started before passing it back to her (lines 15–17). Mikey then immediately returned to his play, without missing a beat. The apprenticeship's place in the room was reinforced by the fact that Johnny accepted the stoppage without

comment; he was accustomed to this and impassively awaited Mikey's resumption of their play.

Segment 3

1. [Maddy is sitting on a chair in the back of the room facing the TV. Mikey and Johnny are in front of Maddy, also facing the TV playing a game.]
2. *Maddy:* Mikey how come it's not starting my game?
3. *Mikey:* What do you mean it's not starting your game?
4. *Maddy:* I'm pressing "b" but it won't go to the game?
5. *Mikey:* Why are you pressing "b"?
6. *Maddy:* It says, "press b to continue your game."
7. *Mikey:* No, it says "press start to continue your game."
8. *Maddy:* No, it says "press start to begin a new game."
9. [Game on TV is paused and Mikey turns around to look at Maddy.]
10. *Mikey:* Are you crying?
11. [Mikey reaches his hand out and Maddy passes him the *Gameboy*.]
12. *Maddy:* No.
13. *Mikey:* It sure sounded like it.
14. *Johnny:* Yeah. (quietly)
15. [Mikey looks at the *Gameboy* and pushes a few buttons.]
16. *Mikey:* You got your code wrong then, let me see it.
17. [Mikey reaches his hand out and takes a piece of paper from Maddy. He then reenters the code showing Maddy what parts she has entered wrong, passes the game back to Maddy, and continues playing the game on the TV with Johnny.]

[*Johnny and Mikey 2005-09-16.00:33:09.11*]

The content, as well as the apprenticeship-like form of this interactional moment, is of interest. Mikey instructed Maddy in a fairly arbitrary symbolic code of the kind that many theories of cognition crafted from studies in schools and laboratory studies would suggest should be beyond the capacity of an eight-year-old. Notably, Mikey's part in the interaction implicitly assumes just the opposite—that Maddy can understand and should do so *quickly*, so he can return to his play. Looking at Segment 3, we see that Mikey's guidance comes in many forms. And Mikey does not simply solve the problem for Maddy, which would suggest a mere helping orientation in the interaction; he instructs her on how to do it herself. This suggests one of the strongest themes in this study—young people organize themselves to teach and learn together, with adult intervention and as a taken for granted, as a natural part of playing video games together.

Vignette 3—Exchanging Knowledge and Shifting Roles Through Coordinated Talk and Embodied Display

This vignette describes two middle-school-aged boys, Johnny (age 13, brother of Maddy and Mikey) and his friend Evan,¹⁷ working collaboratively through a two-player game. While playing this game (*Teenage Mutant Ninja Turtles*), a new one for both of them, they recurrently had difficulty with an important climbing task that they eventually mastered through a



Figure 2

An image from a *Teenage Mutant Ninja Turtles* segment, in which Johnny and Evan are attempting to get their characters to jump up the chimneylike cliffs. To do this, they need to discover a set of controller actions that will enable their characters to ascend the cliffs.

discovered innovation in their use of the controller. Their process of refinement involved interactions based in talk and gesture in-room, in coordination with action in-game. In essence, they managed to keep their play going while they demonstrated to each other successive attempts to create and solidify the climbing move with the controller, in a kind of “on the job” learning. Following the action as the boys produce the climbing move innovation, we see a shift in recognition and subtle renegotiation of who has the relevant knowledge. Unlike in the prior two vignettes, it is difficult to say here who is the more “expert” player. On the whole, we interpret the learning described here as a collaborative process between two players of relatively equal status.

Johnny and his friend Evan were playing a two-player round of *Teenage Mutant Ninja Turtles*, a video game the objective of which is to run through a course containing many obstacles that must be jumped over while simultaneously fighting other characters. They each controlled one character in the game and worked collaboratively toward shared goals negotiated in-room.

At several points during this game session, Johnny’s and Evan’s characters faced this new challenge: ascending chimneylike cliffs (figure 2). During one of their early encounters with the chimney-climbing challenge, Johnny’s character made it to the top, but Evan’s character had some difficulty. While Evan attempted the climb several times, Johnny’s character fell from the top and had to redo the climb. Evan and Johnny handed the controller back and forth, and eventually Johnny got both of the characters to the top. After this early attempt, it seemed as though Johnny held the knowledge of the move, which they would need periodically throughout the game. Just over twenty minutes after the early encounter with the chimney, Evan stated that he had figured out a way to make climbing the chimney easier. He shared this with Johnny, saying “you just keep pressing jump” (see Segment 4, below).

Approximately seven and a half minutes later he demonstrated the move again. This time Evan produced an embodied display, holding the controller in such a way that the display was present in Johnny's field of vision as he continued playing (line 11).

Segment 4

1. [After the characters climb a chimney without any trouble.]
2. *Evan:* Oh, now I know how to do it without falling and stuff, you just keep pressing jump.
[Seven minutes later.]
3. [The two characters run up to a chimney.]
4. *Evan:* Watch this Johnny watch this watch this don't look watch watch my controller.
5. [Johnny turns his head and briefly looks at Evan's controller, then turns toward the screen. Evan's character tries to jump up the chimney but is not able to get very far. Johnny's character stands back. Both boys are focused on the screen.]
6. *Evan:* Oh, hold on, there we go, dang it I can't get it started.
7. *Johnny:* Look.
8. [Johnny's character walks over to the chimney and begins to climb it. Evan's character begins climbing it as well.]
9. [Three seconds]
10. *Evan:* Johnny look Johnny look look.
11. [Evan holds out his controller with one hand toward Johnny. He is holding the "jump" button down, rather than pressing it repeatedly as the boys had been. Johnny glances at the controller, then turns to look back at the screen. Both characters make it to the top of the chimney.]
12. *Johnny:* Oh, once you get it started.
13. *Evan:* You have to get it started then you can do it for sure, but you have to get it started.

[*Johnny and Mikey 2005-08-19.tape1_00:40:45.29*]

In this vignette we see that interaction in-room directly shapes in-game action. More important for our general argument, we see another instance in which teaching is organized for learning during play (like the last vignette showing Mikey and sister Maddy). Here there is a plausible long-term rationale for the instruction that the boys may be oriented to, since having only one player able to achieve the move limits joint progress. Our interpretation is that the boys are oriented to this longer-term goal of both of them being able to make this climb, whereas a short-term perspective might entail Evan just taking Johnny's controller and doing it for him; but that is not what happens.

Vignette 4—Enrolling Unused Devices: How an Extra Controller Helped Two Boys Learn a New Skill

We use this vignette to expand on the image of collaboration described in Johnny's and Evan's attempt to learn the skills needed to climb the chimney cliffs. Here two different boys, Tyler (age 10) and Andrew (age 10), play, in single player mode, a game called *Dragon Ball Z: Budokai 3*. The interaction in Segment 5 resembles Johnny's and Evan's collaborative exchange but differs in interesting ways as well. First, the relationship between these boys is more asymmetric, with Tyler being the clear leader of game activity and talk in the room. It is a case where Andrew has an idea for Tyler, who was playing while Andrew watched. The idea involved helping Tyler defeat an opponent using a newly acquired in-game object

called Hellzone Grenade. Immediately after getting the Hellzone Grenade, Andrew sought to give Tyler some advice on the button sequence for using the grenade against his opponent. The in-game activity of this nine-minute session, during which Tyler eventually defeated his opponent using the Hellzone Grenade, is a case of Tyler learning a new skill. But our interest here is not what was learned—in this case a basic in-game skill. Rather, our interest is in the way in which this learning occurred—through an evolving sequence of interactions between the boys and the spontaneous use of an unconnected controller as an instructional device. The first segment of this vignette begins with Andrew's initial enthusiastic bid to show Tyler how to do the move, punctuated with rhythmic sound effects accompanying an embodied display with the unconnected controller.

Segment 5, Moment 1

1. *Andrew:* Tyler! What you have to do is go du du du da da da da da da da
2. [Andrew sits up and moves toward Tyler, then pushes buttons on a disconnected controller while making the sounds. Tyler turns his head toward Andrew and watches his friend's fingers move on the controller.]
3. *Tyler:* [Turns to look at the TV screen.] You're not—you're not even sure.
4. *Andrew:* Well just try it (.) when you get Hellzone Grenade.

In Moment 2 (below) the disconnected controller, previously useless in-game, was again used by Andrew, this time more demonstrably, as an instructional device. As in prior vignettes involving other children in other families, we see young people organizing themselves to teach and learn together—in ingenious ways.

Segment 5, Moment 2

1. [Tyler pauses the game to select the Hellzone Grenade. Tyler then unpauses the game and powers up the character, Piccolo, he is controlling in preparation for his next move.]
2. *Tyler:* OK!
3. [Tyler and Andrew sit up.]
4. [Andrew picks his controller up off the ground and brings it toward Tyler, while pushing buttons as though he is playing.]
5. *Andrew:* No! See?
6. *Tyler:* Oh you're right! You do have to hold it down!
7. [Tyler smiles; his character Piccolo has won.]
8. *Andrew:* You have to hold it down?
9. *Tyler:* Yes!
10. [A short movie plays on the screen indicating victory; Tyler mirrors the game character's celebratory gestures.]
11. *Andrew:* Nuh-uh!
12. [Andrew brings controller into view and pushes buttons as though he is playing. Tyler is looking at the screen.]
13. *Andrew:* It's this, this=
14. *Tyler:* =No, you were—you ARE right! [Three seconds] Yes you do have to hold it down Andrew! It was rumbling. [Three seconds] So that means [inaudible] I just have to know which one to hold.

Moment 2 ends with a debate between the two boys on how to execute the move. In this debate Andrew mimicked button pushes to make his point. In Moment 3 we see that Andrew continued to make a bid for his way of using the new skill by enrolling the unused controller, however Tyler ignored him.

Segment 5, Moment 3

1. [As in-game fighting continues, Tyler realizes that holding the buttons down is not working.]
2. *Tyler:* Come on!
3. *Andrew:* See it switches.
4. *Tyler:* You're right.
5. [Andrew holds the controller higher and pushes buttons as he talks. Tyler looks at the screen and plays the game.]
6. *Andrew:* See it switches and then you have to hold this and then you have to hold that.
7. *Tyler:* Say what?
8. *Andrew:* That's how you do it.
9. [Tyler eventually loses this round, ignoring Andrew's suggestions to implement the Hellzone Grenade. When Tyler does use the Hellzone Grenade, he is knocked out.]

Eventually, in Moment 4, Tyler took the advice, but did so as modeled by Andrew. Tyler looked toward Andrew and followed his moves on the unused controller.

Segment 5, Moment 4

1. [Andrew sits up and holds the controller out to demonstrate the move.]
2. *Andrew:* See hold. [Six seconds] See you gotta hold it until the arrow goes up. Hold it until the arrow goes up.
3. [Tyler is looking toward Andrew. Andrew pushes the buttons down when he says "hold it" and lets them up when he says "arrow goes up."]

[Tyler 2005_08-24.00:16:24.20]

Taken together, this vignette and the others in this section tell us something important about how kids learn to play video games and, perhaps, also a bit about why. Across four vignettes, we see real variation in the learning arrangements involved. Pure cases of clearly more expert players teaching more inexperienced players are not what we see; instead, we witness more complex situations in which less able players provide instruction to better players, in which a sister and brother establish a working apprenticeship into game play, and situations where friends collaborate with and cajole each other into learning relevant moves and skills. In general, these vignettes collectively show how important it is to understand what goes on in-room if we are to understand how young people come to learn and play in-game. These vignettes also suggest—in regard to the naturalness with which unprovoked teaching and learning occur among young people and their inventiveness in finding productive learning arrangements—that video games are indeed good learning environments, as others have argued. However, we believe games are good learning environments, not primarily because the game's design embodies good learning principles;¹⁸ we see variation in game design quality and in ways that young people play as too great to draw this conclusion from the games themselves.¹⁹ Rather we see the reason that games, or more specifically collaborative interactions around video game play, are good learning environments is that

“in-room” interaction provides opportunities for sociality, joint projects, and empowerment through sharing one’s knowledge and seeing it used for concrete success by others. Since this interaction occurs primarily without adult guidance or direction, it may be that the kid-organized and kid-managed aspects of these contexts—for kids of this preteen and early teen age—make them powerful learning contexts.

Connecting In-Game and In-Room to In-World

In this section, we move outward from in-game, beyond in-room, to connections we have found in our ethnographic data between in-game play and young people’s wider fields of experience “in-world.” In five vignettes, we establish a number of connections between in-game and in-world activity. Our primary argument shares with others a link between game play and identity formation,²⁰ but as we will argue, we see the link and the material games provide for identity formation differently from others who have written about video games. The connections we draw between in-game and in-world are less direct than those we drew between in-game and in-room, as those actions were concurrent and decisively linked. Yet we see the connections between in-game and in-world as important to establish, because they move us toward an understanding of the bidirectional continuities and discontinuities between game play and everyday life, this being a way that ethnographic research can approach the question of transfer we described in the introduction to our chapter.²¹

Vignette 5—Does Using “Cheats” Make a Player a Cheater?

Part of video game play involves using—or not using—cheat codes or cheats. These are, depending on your point of view, an example of the morally sanctionable behavior of “cheating,” or an acceptable part of play. An example of a cheat code comes from the Web site Cheatcode Central, the subtitle of which is “Enhancing Game Experiences Around the World.” Here we learn that a player of *Dragon Ball Z* can “[e]nter one of the following passwords under the ‘Data Center’ option to unlock the corresponding character: *Android 18 (Level 160)* NzEr vcJO)Jlv kW@N P@Wf hOIl \$ABQ &@CG.” There are hundreds of such pieces of information on this and Web sites like it.

In this vignette, we describe a set of situations in which the relationship between the use of cheat codes and the moral stain of cheating is being negotiated among two boys playing a game over multiple play sessions. Tyler (age 10) was a self-avowed user of cheats and would sometimes announce his intention to “cheat.” At the same time, Tyler’s use of cheats sometimes brought complaints and monitoring from his coparticipants, and it was clear from what we observed that some of his reputation as a player, and perhaps also as a person, was at stake in these moments.

An example of this occurred while Tyler played the car game *Burnout 3: Takedown* with friends; during play Tyler used a code that provided greater acceleration to his car for the upcoming race. After this, his competitors began monitoring his hands at the beginning of races, looking for evidence that he was entering a cheat code. This scrutiny—in turn—affected Tyler’s play, as he would then hold the controller so his competition could watch his hand movements and see that he was not entering the codes. We do not know whether he actually had the sleight of hand to enter the codes and to falsify the demonstration, but we do not suspect this was the case.

At other moments during the game, Tyler made comments and acted in ways that intentionally led others to believe he was using cheat codes, which suggests that some aspect of

his reputation as a user of cheats was of value to him. For example, during a *Dragon Ball Z: Budokai 3* fight with his friend Andrew, Tyler quit the match to research a particular skill (unfamiliar to him) that his character had acquired. Tyler opened the Edit Skill screen provided in the game, read the skill's description, then commented "Oh, okay. Now I know what to do." As he started up a new game, Tyler sang "I'm gonna cheat, I'm gonna cheat!" Although Andrew seemed undisturbed by the announcement, he was attending to it and seemingly put in motion a cheat of his own, setting his character's "health" to maximum, indicated by a full white (in contrast to the default half green) bar at the bottom of the screen.

Segment 6

1. *Tyler*: What the heck? Andrew, you're up to white?
2. *Andrew*: Tyler, you're cheating (.) too! You're cheatin' so I can cheat too.
3. *Tyler*: [smiling] How am I cheatin'?
4. *Andrew*: Well you said you were gonna cheat!

[Tyler 2005-08-24.01:16:10.10]

While Tyler did nothing at this point, during battle he paused the game as his health was about to expire and used the same cheat code to reset his health to the maximum level. As he did so, Tyler announced, "If you're gonna go that far, I'm gonna go that far! I'm gonna cheat too! So there. And that will give me a giant advantage."

We find these moments of great interest, because in the variation of stances that Tyler takes, we see his working out among important consociates in his life a moral stance on cheating. He is both an unabashed user of cheats, sporting a somewhat transgressive personal reputation he values at times, and, at the same time, someone who does not want his play with friends interpreted as unfair—thus the overt display of his hands during the opening sequence to show his competitors that he is not entering cheat codes.

Tyler's reputation as a user of cheat codes seemed to set up further interpretation of his in-game actions as unfair. For example, he was accused of "cheating" when he modified his in-game play techniques—without the use of cheat codes—but in ways that were unexpected to his opponents. Taking these actions (called *cheesing* by some in game play discourse) was unexpected, because the actions diverged from courses of action perceived as normal in the real-world activity the game simulated. For example, during play of *Burnout 3: Takedown*, when Tyler saw that his friend's car was critically damaged, he pulled over to the side of the road and waited for a fatal crash. This allowed Tyler to win the race, not by having to run laps and risk taking more damage himself, but by default when his friend's car was inevitably destroyed. Andrew likened such behavior to Tyler's use of cheat codes. At one point during the game, he told Tyler "I hate it when you use cheat codes against me and a whole bunch of stuff," and then forcefully laid down a new rule: "No cheat codes. Just plain old running into the cars until you die" [Tyler 2005-08-10.00:58:17.29]. Tyler's reputation as a user of cheat codes had preceded him and affected how his friends interpreted his play, even when he was not using the codes. It seems that Tyler's use of cheats had become associated with his overall style of play.

Vignette 6—How Young People Customize the Same Game Differently Depending on What They Bring to Playing It From the Rest of Their Lives

This vignette describes how two girls in our study, Katarina and Rachel, played *Zoo Tycoon*, but in dramatically different ways. Our interpretation of these differences is that each tailored



Katarina's zoo: Statues included for aesthetic reasons but no economic benefit.

Rachel's zoo: All features have a function within the official economy of the game.

Figure 3

Katarina and Rachel arrive at zoos that look and function differently. Rachel's desire to build an efficient zoo led her to include only features that generated income. In contrast, Katarina designed features that added to the zoo's aesthetic feel but did not necessarily generate income.

her play to dispositions and interests in the girls' lives beyond the console. Broadly speaking, we found that Katarina cut her own path through the game, and Rachel played by the rules.

We found that Katarina played the game to "design" and reported that she learned what she called "design methods." Rachel played to efficiently beat scripted scenarios given by the game. Whereas Katarina sought to make her exhibits "pretty," Rachel arranged her exhibits for best functionality rather than aesthetic appeal (see figure 3).

Rachel also maximized her in-game funds by purchasing the minimum number of items necessary to keep her zoo's animals healthy and happy, whereas Katarina would add extra features to the exhibits, like trees and rocks, that did little for her in-game bottom line but improved the aesthetics of her zoo. Katarina was so unwavering in her focus on using the game as an aesthetic design medium that she actively occluded in-game instructions that recommended efficiency and point-maximizing behaviors, despite the chance this could lead to the failure of her zoo as a business. This, in turn, created the possibility that she'd no longer be able to extend her design, because if the business failed, her game would be over. She resolved this dilemma by using a cheat code that gave her extra money. Katarina showed no moral compunction whatsoever about using the code, indicating further that using the game as a context for design was her leading value.

Segment 7

1. *Katarina*: You know I have two million dollars.
2. *Tom Satwicz*: Is that how much it gives you when you start?
3. *Katarina*: No, it gives you like seventy-five thousand and then I cheated.
4. *Tom Satwicz*: Oh you cheated?
5. *Katarina*: Yes.
6. *Tom Satwicz*: Ohhh.
7. *Katarina*: Doesn't everyone? [laughs]

[Katarina 2005-08-30.00:12:31.23]

Katarina's design activities in-game had clear connections to other aspects of her life that she shared with us. She talked of designing her bedroom and showed us Japanese lamps she made. She told us that she enjoyed designing a Web page for a social studies project earlier in the school year, and was still proudly sharing the page months after the school project was completed. A school mandate limited subsequent presentations to PowerPoint, which Katarina described as boring and an unacceptable medium for her design interests. Similarly, Rachel's reported preference for efficiency was reflected in her approach to other everyday activities. She led a hectic life, carefully coordinating her sports, church, family, school, babysitting, and social activities on a calendar. Because she scheduled multiple activities in a single day, she efficiently allocated a specific amount of time to each activity. Rachel also had a different stance from Katarina regarding the use of cheat codes that we saw as reflecting her overall orientation to life and game play; she actively chose not to use cheat codes in the game *Zoo Tycoon*, choosing instead to play by the rules and observe the implicit moral order of getting ahead in the game by getting better through clearly sanctioned modes of improvement (e.g., controlled simulations and exploring strategies for maximizing profit).

Before I did the scenarios I definitely used the cheats a lot . . . the money cheats . . . for the scenarios I feel like—I don't know. When I was doing the more free games . . . the thing that would get in your way of having a really nice zoo was not having enough money. So in the scenarios I try to—I don't know, work harder at being better.

[Rachel 2006-0318.00:02:45.18]

While *Zoo Tycoon* incorporates many of the learning and teaching principles that have been attributed to other video games,²² the realization/triggering of those mechanisms (as intended by the games designers) seems to presume some baseline commonality in the goals of all players and the designers. The cases of Rachel and Katarina illustrate otherwise—what individual players bring to the game shapes not only *how* they play, but *what* they play. Confronted with identical game packages, the girls had very different goals and expectations of what it meant to play *Zoo Tycoon*. In turn, these individualized endpoints influenced what parts of the game they attended to in learning how to play.

Vignette 7—Continuities in Sibling Relationships Across In-Game Play and (Home)Work

In this vignette, we bring together events from two situations involving Holly (age 14) and her brother Brandon (age 12) to show strong similarities and an important difference in the way they organize themselves collaboratively during game play and while doing homework. We observed that, in both activities, Holly often assumed a coaching or caretaker role, often without invitation to do so from Brandon. In these situations, she actively assessed his needs and attempted to provide a resolution to what she saw as *his* problem. Of interest here, especially in relation to our argument about the variation in learning arrangements described in earlier vignettes, is that Holly provided this support regardless of what she knew or thought she knew. In other words, she tried to help him even when she thought she knew very little about the topic at hand. Because of this, we see it quite clearly as a *role* she assumes with him. Furthering this interpretation, she was unlike other young people in our study temporarily sidelined while someone else played solo, since she did not try to join the play or become impatient waiting; she seemed comfortable in the role of coach. Brandon, in turn, assumed a role as a somewhat impassive but willing recipient of her coaching support.

With respect to video game play, both Holly and Brandon saw the younger sibling as the clearly more able player (again, not unlike an arrangement common in coaching scenarios). Both independently told us as much, and we saw Brandon consistently beat his sister during competitive play. Brandon occasionally enlisted Holly's help when he was playing solo; however, Holly more often provided unsolicited advice while Brandon played games with which she had only passing familiarity. We often observed Holly with a game's strategy guide in hand reading aloud sections she felt were relevant to Brandon's play. Even when Brandon went in search of a game guide, it would shortly end up in Holly's hands.

While Holly continuously dispensed advice and information, Brandon did not always follow or use it. This represents, then, yet another learning arrangement than those represented in our earlier vignettes. In this case, Holly played the role of running commentator, seemingly in hopes that some of her narration would prove useful to Brandon, but she showed little distress or frustration when he failed to follow her suggestions. The reciprocal impassivity that we observed across them in this arrangement was interesting; it may have been due to the fact that Brandon was the better player and both knew that he was assessing the value of her suggestions and deciding on the basis of the in-game situation whether it was sensible to act upon or disregard his sister's help. But this reciprocal impassivity also may have been a more durable feature of their relationship.

An example of the learning arrangement between them during game play comes from a time when Brandon began a new game (*Destroy All Humans*). As was typical, Holly made suggestions based on a reading of the game's instructions during his early play sessions. She suggested, for example, that he cross the street in a particular spot and look for the mayor in a specific area. The stream of suggestions came in, often through repetition and with reasons attached, but Brandon did not respond, nor did his play register the suggestions. Only after Brandon failed *repeatedly* to achieve his current in-game objective did he typically act on his sister's advice and then successfully completed a particular mission.

Their relationship during homework time bore marked similarities to the learning arrangement that existed between them during video game play. In both situations, Brandon faced a problem, Holly assessed the situation, and attempted to help him by making herself available as a resource, even though he had not explicitly invited her to do so. In the particular homework situation we describe here, Holly decided to move into the family room with Brandon to do her homework, just in case he needed help. One difference in the gaming and homework situations was that in the case of homework (in this instance math), both regarded Holly as the more expert. What was similar between the gaming and homework situations was the sense of Holly serving as something of an ambient resource for Brandon; she was just hanging around, waiting to be asked for help, and offering it even when he did not ask.

An exemplifying moment occurred when Brandon handed his math homework packet to Holly without saying a word, and she immediately set her own work aside to accept it—such was the tacitness of the arrangement between them. At one point, after she handed his textbook back to Brandon following a helping episode, he quickly handed her another math problem sheet. She responded with a tone of pleased and feigned exasperation, "*I'm never going to get out of here am I?*" She clearly had no real need, at that point, to "get out of [there]."

However, the problem that Holly was confronted with on this new worksheet involved the mathematical concept of functions, which she proceeded quickly to assert that she could not do.

Segment 8

1. *Holly:* Something tells me this is another thing that I didn't do [Holly takes textbook from Brandon's lap and Brandon turns his head toward the math packet that Holly had previously explained.] Maybe I'll learn something.
2. [Over the next six minutes, Holly reads the textbook aloud while Brandon works on his math packet. Still talking aloud, she tries to solve an example in the book. Brandon watches, then leans his head back and closes his eyes.]
3. *Holly:* I don't know Brandon, I never did functions. This is something that I didn't do and it's gonna screw me over when I go to math class next year. [Holly picks up the worksheet and looks at it.] So, I don't know. I guess ask mom or ask [Brandon's math teacher] tomorrow in class because I don't know functions. I've never done functions. I don't know anything about functions.
4. [Brandon turns and starts leafing through a stack of papers and hands a sheet to Holly.]

[*Holly and Brandon 2006-05-31.00:52:45*]

Here Holly's lack of knowledge about the content of *his* work changed the situation; she wanted to move someone else into the role of Brandon's helper and repeatedly asserted her lack of ability as reason to disengage from her role as helper. We find this a striking difference when compared with her helping during game play; in the gaming situation she knew equally little, and perhaps even less, about the content at hand, but in the case of the game, her own lack of ability was of no issue, while in the homework situation her lack of ability was a source of discomfort, self-negation, and disengagement, a point she made most emphatically, moments later, saying to Brandon with clear distress: "Oh. No no no. I don't know functions Brandon. [Raises left hand to rub eyes.] I've never done functions. I've never learned functions. No one ever taught me functions. Um I would only suggest asking Mom, wait until Dad gets home and ask him."

We find this comparison instructive in that it shows that while the basic learning arrangement between Holly and Brandon seems to travel across activities, it does so with an important difference that may tell us something about the differences between school and gaming as learning contexts. In this research, we have found that game play is a pretty productive learning context for young people; others, like Gee elsewhere in this volume, have reached a similar conclusion. Gee has argued that this is, in large part, because game designers have employed good learning principles, thus locating the locus of productive agency primarily in the games. Gee contrasts the "curricula" of games, designed with these good learning principles, against traditional school curricula, which, he argues, are designed under other, less productive, learning principles. Our data suggest a different account, at least in part. We locate the productive agency of game play as a learning environment in qualities of in-room collaboration—these being comfortable sociality, having one's knowledge valued and used by others and having the experience of being engaged in joint projects. From Holly's reaction, it seems also that less shame is attachable to not knowing how to play the game than not knowing how to do the homework, or at least that is secondary to helping her brother accomplish something. This is striking because game play, like school, is competitively structured as a social practice, but it seems perhaps gaming might be a more productively motivating competitive environment than school (except, of course, for some people). This is certainly a topic for further investigation.

Throughout this chapter we have argued that the productivity of these gaming environments for learning lies in the fact that kids among themselves are free to figure out and create learning and teaching arrangements that work for them. We might go so far as to say that

young people across our study are presenting us with their implicit theory of learning in game play—their theory being that games are learnable and we (i.e., they) need only figure out how to learn them. The variations of learning arrangements across this and the earlier vignettes make this point.

This vignette involving Holly and Brandon also adds something to this account, through its comparison of a learning arrangement between two siblings that is durable in the gaming situation, and fragile—and a source of self-abnegation—in the homework situation. This contrast exists even though it was quite clear that Holly knew more than Brandon about mathematical functions than she did comparatively about *Destroy All Humans*. As such, we might expect her to feel more relationally confident with the math and likewise less fragile; but she didn't. In comparison to an implicit theory that games are learnable, Holly's comments about mathematical functions and her own lack of *knowledge* suggest her theory of learning in this case is more restrictive; that in fact, mathematical functions, and maybe all school knowledge, can only be known through the medium of adult instruction. Because she "missed" this in school, she can't really be expected to learn it now, despite being able to call on resources like her own background knowledge or the textbook she is reading from, resources as good or better than those that she has at hand for helping Brandon in the game situations.

**Vignette 8—"I Wouldn't Really Do That" and "I Couldn't Get Away With That":
Making Distinctions Between In-Game and In-World Consequences**

At the beginning of the chapter, we referred to a perspective we called the *separate worlds view*—the idea that games are a world apart from the real world where players can take on new, and possibly transgressive, identities. Because games require players to control characters who explore imaginary worlds, build whole cities, and engage in battles with all manner of phantasmagorical creatures, there is a surface level at which we agree with the separate worlds view. But, at a deep level, are the selves that are engaged in game play truly remade, even in the moments of play? Are new identities of the people who are playing being remade, except, of course, as game players?

Our analysis suggests that identities are implicated in game play in a different way than the separate worlds view suggests. We, of course, see young people enjoying the imaginary worlds they are able to control and build during game play, and like other successful media (e.g., films and television), they display a sense of getting lost in the experience. But our study has taught us that the identities being crafted through game play are in fact real-world identities that are crafted as young people compare their actions in-game, and their consequences, with the consequences those same actions would have in the real world.

We had a number of situations in our data that led us to this interpretation. For example, Rachel (age 15) told us that she plays games because "it's kind of something different from the real world and it's entertaining because you have control over the little scenario and you can make them really good." During play, she often offered unsolicited comparisons of how her in-game behavior differed from her real-world behavior. While she played *Zoo Tycoon*—the simulation game in which players build and maintain zoos—this contrast was most striking. In her everyday life, Rachel and her family cared for stray and abandoned cats awaiting adoption through a local animal shelter. We often observed her readily pause her game play to monitor a cat's health or attend to its needs. In-game however, Rachel's decisions about the animals she was caring for as zookeeper were driven by monetary gain rather than the happiness or well-being of the animals. For example, while creating a zoo for

different types of *cats* (e.g., tigers, lions, and leopards), Rachel learned of a new birth in her zoo and responded by selling the newborn animals immediately.

Segment 9

1. *Rachel*: Yeah, because the baby—um because there was a birth of an endangered animal? < . . . > that's really great. And it's especially great for me because I can sell the little baby for \$1000. [Clicks button to sell baby.] That's a good deal.
2. [Rachel pauses, then explains herself.]
3. In real life? I would not own a zoo like—I would not, um, what would—what would you say, um, manage a zoo like this. I would be much more caring. But in this game, [smiles and nods her head] I'm more (.) greedy. But that's okay. Okay, so now that I have money, I actually can (.) that's really good. Except it will go very quickly.

[Rachel 2005-10-29.00:28:10.28]

Similarly, Rachel explained that she would never clear-cut the trees in real life, but she does so in-game because it makes her a lot of money. Rachel also commented that not only does the value of trees decrease as time goes by, but that there is no cost incurred to clear-cut, which didn't make sense to her. There should be a cost, she noted, "you know, kind of ecologically, but no, no cost."

For different purposes, Rachel also spent time highlighting alignments—rather than contrasts—between her real-world life and the in-game world of *Zoo Tycoon*. Her mother was a strong advocate and practitioner of ecologically sensitive business programs and, against that background, Rachel described a *Zoo Tycoon* composting program to her mother.

Segment 10

1. *Rachel*: Mom. In *Zoo Tycoon*? You have a- Part of your budget is the recycling benefit.
2. *Mom*: Oh go::d!
3. [Rachel turns her head toward her mother. She raises her right hand and moves it to emphasize her words.]
4. *Rachel*: That's part of the budget.
5. *Rachel* [to researcher]: My mom does recycling programs.
6. *Mom*: Goo::d! It needs to be calculated into more budgets.
7. [Rachel continues playing her game then continues explaining benefits.]
8. *Rachel*: Oh, and mom? You can buy a compost station? And you get \$50 a month for composting? And there's NO upkeep cost. So, if you are making a zoo [Mom: wo::w!] it is beneficial to do the compost station. 'Cause then you get money.

[Rachel 2005-10-15.00:47:08.10]

In this instance, Rachel played up the positive features of *Zoo Tycoon* rather than the negative ones, but in both cases positive and negative accounts were clearly anchored to her perspectives and experiences in-world.

Another of our participants, Katarina, also made comparisons between in-game and in-world behaviors. For example, as she was bulldozing a forest of trees in the game, she stated that she would never behave that way in real life. Both girls were well aware of the differences between their in-game and out-of-game behaviors, which they sometimes felt compelled to explain. As Rachel put it:

[Games] are different [from the real world] because they don't have all the aspects and you're the only one controlling it and you can just click-out if you want and you don't really have to be involved in it. So it's just so much more like sheltered. . . [It's good] because then you can just do whatever you want in it.

[Rachel 2006-04-14.00:03:30.06]

Tyler and Andrew made similar comparisons of in-game and out-of-game events. While playing *Major League Baseball 2006*, for example, a pitcher–batter interaction provided an opportunity to talk about previous video game play, create “what if” real-life scenarios, and share their Little League baseball experiences. During one game session, Andrew was watching Tyler play as one team against the computer. After striking out a batter, Tyler brought up a contrast between Seattle Mariner Ichiro Suzuki's real-world demeanor and his in-game behavior. This led to a recounting of play in a different baseball game called *Slug Fest*.

Segment 11

1. *Tyler:* You know how Ichiro never gets mad in real life? Well in the game he charged the mound. [smiles]
2. *Andrew:* Remember when um you got him mad? When I was playing with him?
3. *Tyler:* [Nods] I did- We just made that- He never gets mad but in the game he got all mad and he charged the plate.
4. *Andrew:* Notice how he throws the bat at someone? [laughs]
5. *Tyler:* *Slug Fest* is so funny! You know if you hit the batter good enough? He gets all mad? He gets really mad and uh-
6. *Andrew:* Do *Slug Fest* after this. I want to see it.
7. *Tyler:* I don't have *Slug Fest*.
8. *Andrew:* Oh you don't?
9. *Tyler:* But he gets all mad, like if you beat the guy up really good? You'll get on fire and then you'll pitch really good? Then if you keep on beating up the batters? You'll pitch all- you'll pitch really good. It's funny.

[Tyler 2005-07-20.00:54:42.25]

This passage, taken in isolation, might support the separate worlds view; even worse, it might suggest that these boys are learning from the game the idea that it is both okay to beat someone up and it is a way to improve your pitching. Yet, following their conversation a bit further disabused us of this interpretation. In Segment 12, Tyler and Andrew continued the hitting batters discussion and talked about their actual and imagined reactions in similar Little League situations. Against the backdrop of Tyler controlling one team at bat, they laughed about beating up Little League pitchers whom they have imagined hit them with pitched balls. However, in contrast to the *Slug Fest* scenario, the boys recognized the consequences of bringing such behavior into their Little League play (lines 9–10), while at the same time had a safe space to imagine the dangerous actions.

Segment 12

1. *Tyler:* I'm about to get a rally. Watch this. [his batter hits the ball] Bam! [looks surprised as the ball goes over the fence] Told you I was about to start a rally. Only if it—too bad it wasn't a grand slam.

2. *Andrew:* Just two more people in there- I mean one more person in there. It would have been a grand slam.
3. *Tyler:* You know what really ticks me off when I'm batting? Like if I get hit by the pitch? Like if it's not—if somebody hits me in my leg, I'm, I'm not mad at the pitcher, but if someone hits me up in my helmet? That's when I get mad.
4. *Andrew:* MmHm.
5. *Tyler:* But, I—I'd get in trouble if I charged the plate.²³ [smiles] I'd get in bi::g trouble. But I wouldn't think about charging the plate. I just give the pitcher a mean look.
6. *Andrew:* I'd throw the bat at someone. [both boys laugh] You know it's like, dude! could you please not do- [swings right arm up then downward across chest] Boom! Right in their face.
7. [Tyler's player in the game is running to second base.]
8. *Andrew:* Safe. If they hit me in my helmet I'm like (.) Hey ma::n. Like after the game I'm like, man could you not do that anymore? [swings arm up and then across chest] Boom! right with my bat!
9. *Tyler:* Yeah right man. You'd be in juvie.
10. *Andrew:* [laughs] I know. [leans back on sofa] That'd be messed up.

[Tyler 2005_07-20_01:02:08.12]

Taken together, these stories of Rachel, Katarina, Andrew, and Tyler suggest that young people are indeed forming identities in relation to video games. The idea that they can do things in the game that they cannot do in the real world is only part of the story; the other half is that they hold actions that they control in-game in regular comparative contact with the consequences, and morality, of those actions in the real world. Actions in games, then, are a resource for building identities in the real world, occurring through a reflective conversation that takes place in-room.

Conclusion

We began this study with questions about how and what young people learn playing video games—of their own choosing, in their own homes—and with questions about how they adapt to or use in the rest of their lives what they learn playing games. Before collecting any data, we were familiar with the argument that games are remarkably good learning environments because they embody dozens of important learning principles.²⁴ As ethnographers and researchers of learning and cognition, we were struck by the lack of empirical backing for these claims, so that alone was sufficient reason for us to undertake the study.

But there were deeper reasons for doing this study, which became clear in hindsight. Regardless of the level of game play in our own lives, we identified with many of the kids at play in these living rooms and dens. Some of us may have watched broadcast television rather than played video games or played board-based strategy games rather than electronically programmed ones, but the consumption and repurposing of mass-produced media that we saw among these young people resonated deeply. Watching these kids lying around, talking, joking, and trying to figure things out in this ordinary way was very familiar. We suspect it strikes many readers of this volume, who've probably grown up in past two or three decades, in similarly resonant ways. So as people who were and are these kids, we wondered about the effects of our own media consumption at the same time as we wondered about theirs.

We will not indulge in the telling of these personal stories here, but we will say that what we hold true of ourselves we have rediscovered to be true across the participants in our

study—that an “answer” to the question of how media consuming and repurposing has affected these young people is complicated and contingent; it depends on differing dispositions and purposes that people bring to play, who they play with, and perhaps more importantly what people *make of* these experiences in other times and places in their lives. By emphasizing this active role of making something of game playing experiences, we are stepping quite far away from any simple generalizations about effects of video game play. We are not here to deliver the news that playing games is a waste of people’s time, nor are we here to say, “Yes it is the new wave that the next generation will ride to get smart and be more creative.” But we do have a few general things to say.

The variety of ways that we saw young people arrange themselves to play games surprised us, especially since most of these ways were interpersonally and emergently organized by the young people themselves. One interpretation of why this happened would be to say that these kids were extremely “motivated” to learn to play video games, and so they learned however they could manage. If this were our conclusion, it would set up a research question that many are pursuing—what *properties* do games have that make them motivating? Watching the young people in our study, we did not see affective displays that led us toward the high motivation explanation. But there is a bigger lesson of our study that we think displaces the high motivation explanation, perhaps in principle. Video game play is too different in its purposes and uses across even our small number of cases to look for a property of it as an interactive medium.

For these reasons, we do not appeal to the games-are-highly-motivating explanation, but we do see a reason that young people play games and get them tangled up with the rest of their lives, and this reason is cultural. The phrase that best helps us explain it comes from one of our participants, Mikey, who in talking about games said, “It’s what we do.” The “we” he was referring to was kids these days, the young people of his generation. Video game play is now hunkered down in our culture. And “what we do” is something that gets learned somehow and somehow.

There are things we expected to see, but did not. We expected to see, for example, kids taking on identities from the game; this sort of dramatic blurring of in-game and in-world did not occur in our study. We saw a few evocative moments with our more expressive participants when they borrowed a celebratory gesture or phrase from a game’s character, but these moments were usually played for laughs and came directly after the in-game moment. They were more like echoes than borrowed durable elements for a real-world persona. Of course, we’ve had to consider that our ethnographic approach, studying observable behavior and exchanges between people and devices, has left too much unseen. It is certainly possible. And it is surely a claim that many psychologists would make, arguing that all the really important stuff was going on in their heads. This would include carrying or transferring traits from characters they have controlled in game situations into real-life situations. All we can say about this is that we did not see evidence for this in our study, nor did our participants tell us about this when interviewed. We leave it to other researchers to devise methods to discover what we might be missing.

What we did observe and have described in this chapter is a different kind of “transfer” between what we call in-game and in-world. It’s a kind of transfer that the players are quite active in constructing themselves. We saw this in a number of the vignettes, as young people actively juxtaposed consequences for actions in-game and in-world. This study, therefore, supports a view of transfer that is best understood as an action that a person actively *does* rather than an automatic process that *happens to* a person’s mind under appropriate

conditions. This, in turn, has methodological implications in that if transfer is something someone does, actively using and repurposing learning from one setting to another, then we need to study these other settings. Setting up experiments in the laboratory won't help us much, because in laboratories we will almost certainly lack the very conditions that would allow us to see transfer as we are understanding it in this study—namely, a consequential context (i.e., consequential to the person) to which someone actively brings his or her gaming skills, dispositions, or learning arrangements.

Our study of kids playing games is part of a decade-long research program that seeks to look at people's activities, comparatively and across settings.²⁵ The theoretical idea that animates this program and related lines of work²⁶ is that practices—even practices like video game play that constitute a seemingly separate world—substantially acquire meanings for people not because they have this or that property (e.g., interactivity or narrative engagement), but by the ways that particular practices are in circulation with others. In our view, further productive research would extend the line of analysis we've pursued in this project, putting a spotlight on gaming, but also keeping a close eye on all the other activities in young people's lives that are tangled up with gaming. Further research also needs to look at gaming over time, taking seriously the idea that young people these days have *careers*—with all that this term implies—as gamers, and that these careers lead young people toward particular experiences, people, and identities, and away from others.²⁷

Notes

1. Barbara Rogoff and Jean Lave, eds., *Everyday Cognition: Its Development in Social Context* (Cambridge, MA: Harvard University Press, 1984); Jean Lave and Etienne Wenger, *Situated Learning: Legitimate Peripheral Participation* (Cambridge, UK: Cambridge University Press, 1991); Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: The MIT Press, 1995); and John Seely Brown, Allan Collins, and Paul Duguid, Situated Cognition and the Culture of Learning, *Educational Researcher* 18, no. 1 (1989): 32–42.
2. Clifford Geertz, *Local Knowledge: Further Essays in Interpretive Anthropology* (New York: Basic Books, 1983).
3. Jean Lave, *Cognition in Practice: Mind, Mathematics, and Culture in Everyday Life* (Cambridge, UK: Cambridge University Press, 1988); and Hutchins, *Cognition in the World*.
4. Michael Cole, Ray P. McDermott, and Lois Hood, *Ecological Niche-Picking: Ecological Invalidity as an Axiom of Experimental Cognitive Psychology* (New York: Rockefeller University, Laboratory of Comparative Cognition, 1978).
5. Lev Grossman, The Art of the Virtual: Are Video Games Starting to—Gasp!—Mean Something? *Time Magazine* 164, no. 19 (2004).
6. James Paul Gee, *What Video Games Have to Teach Us About Learning and Literacy* (New York: Palgrave, 2003), 204.
7. Gee, *What Video Games Have to Teach Us*; Henry Jenkins, Game On! The Future of Literacy Education in a Participatory Media Culture, *Threshold*, Winter 2006. Reprinted on New Media Literacies Web site: <http://www.projectnml.org/node/306/>. Accessed June 20, 2007; Kurt Squire and Sasha Barab, Replaying History: Engaging Urban Underserved Students in Learning World History Through Computer Simulation Games, in *Embracing Diversity in the Learning Sciences: Proceedings of the Sixth International Conference of the Learning Sciences*, eds. Yasmin B. Kafai, William A. Sandoval, Noel Enyedy, Althea Scott Nixon, and Francisco Herrera (Mahwah, NJ: Lawrence Erlbaum Associates, 2004), 505–12 ; Michael Young, P. B. Schrader, and Dongping Zheng, MMOGs as Learning

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8. For a notable and foundational exception, see Mizuko Ito, Engineering Play: Children's Software and the Productions of Everyday Life (PhD diss., Stanford University, 2002); and Mizuko Ito, Mobilizing Fun in the Production and Consumption of Children's Software, *The Annals of the American Academy of Political and Social Science* 597, no. 1 (2005): 82–102.

9. Cf., Reed Stevens and Rogers Hall, Disciplined Perception: Learning to See in Technoscience, in *Talking Mathematics in School: Studies of Teaching and Learning*, eds. Magdalene Lampert and Merrie L. Blunk (Cambridge, UK: Cambridge University Press, 1998), 107–49; Reed Stevens, Divisions of Labor in School and in the Workplace: Comparing Computer and Paper-Supported Activities Across Settings, *Journal of the Learning Sciences* 9, no. 4 (2000): 373–401; Reed Stevens, Sam Wineburg, Leslie Rupert Herrenkohl, and Philip Bell, The Comparative Understanding of School Subjects: Past, Present and Future, *Review of Educational Research* 75, no. 2 (2005): 125–57; John Bransford, Nancy Vye, Reed Stevens, Pat Kuhl, Dan Schwartz, Philip Bell, Andy Meltzoff, Brigid Barron, Roy Pea, Jeremy Roschelle, and Nora Sabelli, Learning Theories and Education: Toward a Decade of Synergy, in *Handbook of Educational Psychology*, 2nd ed., eds. Patricia Alexander and Philip Winne (Mahwah, NJ: Lawrence Erlbaum Associates, 2006).

10. Gee, *What Video Games Have to Teach Us*; Kurt Squire, From Content to Context: Videogames as Designed Experience, *Educational Researcher* 35, no. 8 (2006): 19–29; and Constance A. Steinkuehler, Massively Multiplayer Online Videogaming as Participation in a Discourse, *Mind, Culture, and Activity* 13, no. 1 (2006): 38–52.

11. For the evocative phrase “tangled up” that we borrow throughout the chapter and analyses of kids' lives that are sympathetic to our own, see Jan Nesper's *Tangled Up in School: Politics, Space, Bodies, and Signs in the Educational Process* (Mahwah, NJ: Lawrence Erlbaum Associates, 1997).

12. See, for example, Robert J. Moore, Nicolas Ducheneaut, and Eric Nickell, Doing Virtually Nothing: Awareness and Accountability in Massively Multiplayer Online Worlds, *Computer Supported Cooperative Work* 16, no. 3 (2007): 265–305; Tony Manninen and Tomi Kujanpää, The Hunt for Collaborative War Gaming—CASE: Battlefield 1942, *Game Studies* 5, no. 1 (2005). <http://www.gamestudies.org/0501/manninen.kujanpaa>. Accessed June 20, 2007; and Steinkuehler, Massively Multiplayer Online Videogaming.

13. Lucy Suchman, *Plans and Situated Actions: The Problem of Human-Machine Communication* (Cambridge, UK: Cambridge University Press, 1987); Charles Goodwin and Marjorie Goodwin, Formulating Planes: Seeing as a Situated Activity, in *Cognition and Communication at Work*, eds. David Middleton and Yrjö Engeström (Cambridge, UK: Cambridge University Press, 1996), 61–95; Stevens and Hall, Disciplined Perception; and Stevens, Divisions of Labor.

14. Hannah Meara Marshall, Structural Constraints on Learning: Butchers' Apprentices, in *Learning to Work*, ed. B. Geer (London: Sage, 1972); Hutchins, *Cognition in the Wild*; Lave and Wenger, *Situated Learning*; and Barbara Rogoff, *Apprenticeship in Thinking: Cognitive Development in Social Context* (New York: Oxford University Press, 1991).

15. Hutchins, *Cognition in the Wild*.

16. Marshall, Structural Constraints on Learning.

17. Evan was Johnny's schoolmate. We do not have Evan's actual age since he was not a primary participant in the study, but we infer his age to be 12–14 years because they are in the same grade in school.

18. Gee, *What Video Games Have to Teach Us*.
19. In the second collection of vignettes, we illustrate this general point with a comparative analysis of two girls playing the same game. They play the game *Zoo Tycoon* very differently and learn very different things from these different orientations to play. Though, arguably, this dramatic difference might be attributed to the game design itself, we see this as stretching the definition of design a bit too far, at least for purposes of attributing to the game's design the powerful learning effects we and others have observed.
20. Gee, *What Video Games Have to Teach Us*; and Constance A. Steinkuehler, Learning in Massively Multiplayer Online Games, in *Proceedings of the Sixth International Conference of the Learning Sciences*, eds. Yasmin B. Kafai, William A. Sandoval, Noel Enyedy, Althea Scott Nixon, and Francisco Herrera, 521–8 (Mahwah, NJ: Lawrence Erlbaum Associates, 2004).
21. For two efforts considering issues of continuity and transition outside the psychological approach to transfer consistent with ours, see Lave's *Cognition in Practice* and King Beach's Consequential Transitions: A Sociocultural Expedition Beyond Transfer in Education, *Review of Research in Education* 24 (1999): 101–39.
22. Gee, *What Video Games Have to Teach Us*.
23. Tyler seemingly means "charge the mound."
24. Gee, *What Video Games Have to Teach Us*; Marc Prensky, The Motivation of Game Play: The Real Twenty-First Century Learning Revolution, *On the Horizon* 10, no. 1 (2002): 5–11; Marc Prensky, Computer Games and Learning; and Kurt Squire, Educating the Fighter, *On the Horizon* 13, no. 2 (2005): 75–88.
25. Stevens, Divisions of Labor; Stevens and Hall, Disciplined Perception; and Rogers Hall and Reed Stevens, Making Space: A Comparison of Mathematical Work at School and in Professional Design Practice, in *Cultures of Computing*, ed. Susan L. Star (London: Basil Blackwell, 1995).
26. Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press, 1999); idem., *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Clarendon, 2005); Jan Nesper, *Tangled Up in School*; Kevin Leander and Jason Lovvorn, Literacy Networks: Following the Circulation of Text and Identities in the School-Related and Computer Gaming-Related Literacies of One Youth, Paper presented at the American Educational Association Annual Meeting, San Diego, CA, 2004; and Ron Scollon, *Mediated Discourse: The Nexus of Practice* (London: Routledge, 2001).
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