ABSTRACT

Title of Dissertation: PLAY STUDIES: INTEGRATING DRAMA, GAMES, AND LUDI FROM THE MEDIEVAL TO THE DIGITAL AGE

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At first glance, the fact that the English word for drama is "play" must strike the modern reader as odd. Playing is usually an activity we associate with games (or musical instruments), yet this odd linguistic trace is a forgotten marker of how far the modern sense of drama has strayed from its antecedents. This dissertation recovers the historical relationship of drama, play, and games, developing a shared discourse under the rubric of "play studies." Play is defined in two complementary phenomenological frameworks, methexis and mimesis, to enable scholarship that transcends historical, cultural, and material boundaries. The first chapter engages the linguistic confusion surrounding late medieval drama (with examples from *Mankind*, cycle plays, and *Fulgens and Lucres*) and medieval games (*The Game and Playe of the Chesse*, *The Book of Games*), arguing that the medieval English view of play can help correct and complicate modern game scholarship. The second chapter takes up this medieval perspective of play-as-methexis and demonstrates its applicability to

digital media of the late 20th century with examples from video games like *Tetris* and *Dragon's Lair*. Along the way, this chapter also makes ontological arguments in relation to early computer history, software studies, and media archaeology, advocating that a fuller understanding of games depends on the willingness of humanities scholars to build, hack, and play with media using methods normally reserved for artists and scientists. The final chapter considers the lasting legacy of the medieval play-as-game, particularly how the development of English drama is indebted to the theater buildings that created a space for the sustained collaboration of players with a variety of skills. The final section considers the current state of Shakespeare-as-play, including 21st-century productions, digital video games, and board games.

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by

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Dedication

To my family, whose unwavering support gave me the freedom (and privilege) to finish this work.

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Introduction

The word 'play' is historically and conceptually a philological subset of the word 'game,' not the other way around.

—John Coldewey, "Plays and 'Play' in Early English Drama" (182)

At first glance, the fact that the English word for drama is "play" must strike the modern reader as odd. Playing is usually an activity we associate with games (or musical instruments), yet this odd linguistic trace is a forgotten marker of how far the modern sense of drama has strayed from its antecedents. It bears remembering that medieval plays were not understood as what we call "literature," rather they were taken to be a type of game. We can see this clearly in the medieval drama *The Castle of Perseverance,* when God concludes the play by saying, "þus endyth oure gamys." Or in *Fulgens and Lucres,* when a character interrupts the play's action to ask, "What now, syrs, how goth the game?" We are reminded of it again in the *N-Town Banns*: "Now haue we told yow all bedene / The hool mater þat we thynke to play. / Whan þat ye come þer xal ye sene / This game wel pleyd in good aray." Multiple generations of medieval scholars, from Karl Young and E. K. Chambers to V. A. Kolve and Lawrence Clopper, have struggled with the indeterminacy of medieval words like "play," "game," and "ludus." From what we can tell, to "play a game" or "game a play" in the medieval period could refer to dramatic acting, playing music, playing sports, or playing at dice. The discovery of this medieval linguistic crux was the catalyst for my investigation into the nature of games as cultural, historical, and material activities.

In the cultural history of play, the medieval period presents not simply a particular variety of drama but—even more significantly—a lost way of conceptualizing play, an activity whose universality exceeds even humanity itself as Johan Huizinga shrewdly observed. Medievalists may recognize Huizinga's *The Waning of the Middle Ages* (1919) as a foundational work for medieval cultural history, but game studies scholars know him best as the author of *Homo Ludens* (1938), the book generally acknowledged as the first scholarly work on game studies. Today, however, it seems that these fields could scarcely be farther apart. While medievalists like V.A. Kolve and Lawrence Clopper address the role of play and games in medieval culture, it remains far more common for game scholars to engage with medieval-themed games than historical ones. This dissertation takes game studies back to Huizinga and the medieval period, pushing for a more capacious understanding of games across history. From the perspective of game studies, my primary goal is to understand how modern games—including video games—fit within the extended timeline of game history. At the same time, my project questions how early drama may fit into game history as a type of social game within the medieval and early modern contexts.

The temporal range and disciplinary approaches of my project are admittedly unorthodox—requiring a committee that contains medieval, early modern, and digital-age scholars—but its scope has several distinct advantages. To address plays as a historical form of game is to clarify how games have historically been highly diverse set of activities. A broad temporal range unsettles our modern preconceptions about play and invites us to reconsider entrenched disciplinary boundaries. At the

moment, we lack a useful praxis for connecting games as cultural, historical, and material activities—while we understand that baseball, chess, and *Oregon Trail* are all games, it remains difficult to articulate why.

Not that numerous critics have not tried to define "game" in order explain this diversity: Roger Caillois, Alexander Galloway, Jesper Juul, Katie Salen, Eric Zimmerman, and Jane McGonigal among them. At the 2009 Digital Games Research Association keynote, Ian Bogost claimed that the answers to the question, "What is a game?" have failed in large part because they have not adequately addressed the question in metaphysical terms.[1] I bring to the analysis of games a conviction that they constitute phenomenological, not merely fictional, worlds. More than "systems of rules," games are also activities (they are performative). Finally, I take games to be metaphysical activities. That is, playing is a way of *being*. When we play games, we are *being* something other than our everyday selves, whether that means a pitcher, a king, or Super Mario. This other kind of being takes place in distinct, rule-governed worlds with particular goals and possibilities. These worlds, in turn, are not unlike those described by Heidegger in *Being and Time*; hence, his concept of worldhood is a useful starting point that sidesteps the traditional duality of reality and fiction by indicating the possibility of worlds as social ways of perceiving, being, and doing.

My own conceptualization of play as a type of being is based on the concept of *methexis*, a term I borrow from Huizinga who used it to describe playing as a form of identity-making coupled with material practice. This differs from many modern game scholars who often describe games in *mimetic* terms, as fictions which imitate

[1] I would add that current definitions have not taken sufficient note of the history of gaming: they misjudge the scope of what games are because they ignore what they have been.

"reality." Mimesis and methexis are two complementary ways of considering play. If mimesis points to the referential fictionality of play, then methexis indicates the way play alters our attunement and practices toward the material world. In a game of chess, a "queen" has both a mimetic identity—as a representation of a matriarch who presides over a royal court of knights, bishops, etc.—and also a methectic identity—as a material "queen piece" *for the sake of* moving and capturing vertically, horizontally, and diagonally at any distance. Methexis does not simply alter what a thing represents; it fundamentally redefines what it is and does, the very embodied practice of its use.

The phenomenology of play I develop in these pages is indebted to Heidegger, Merleau-Ponty, and Graham Harman, but it also has roots in drama and game studies. The concept of mimesis, for example, is a significant issue in game studies. Kendall Walton's *Mimesis as Make Believe: On the Foundations of the Representational Arts* (1990) distinguishes between two forms of make believe: content-oriented and prop-oriented.[2] Content-oriented make-believe is akin to mimetic play, generating a significant fictional world. In Walton's theory, these fictional worlds generate their own type of truths. Indeed, Walton's definition of "fiction" is that which is "true within a fictional world," and his theory of content-oriented play is intimately concerned with the possibilities of "fictional truths."

Walton's theorization of content-oriented play is both rich and complex, but his treatment of prop-oriented play is comparatively underdeveloped.[3] The most

[2] A similar distinction, influenced by Walton, may be found in the work of game scholar Chris Bateman. Bateman's terms are "representational" and "functional."

[3] For Kendall's most extensive analysis of prop-oriented make believe, see "Metaphor and Prop Oriented Make-Believe."

prominent example he examines is metaphorical language:

> The metaphorical statement (in its context) implies or suggests or introduces or calls to mind a (possible) game of make-believe. The utterance may be an act of verbal participation in the implied game, or it may be merely the utterance of a sentence that *could* be used in participating in the game. In saying what she does, the speaker describes things that are or would be props in the implied game. (46)

In Walton's terminology, metaphors are "prompters" or "generators" of "fictional truths." The creation of a metaphor is a prompt to engage in linguistic play. When we say "war is hell," the word "is" invites the hearer to compare how the emotional setting of hell may parallel that of war.

For Walton, the main distinction between content-oriented and prop-oriented make-believe depends on whether players are interested in fictional worlds or skilled prop use. Content-oriented make-believe generates a fictional world. Thus, Walton calls chess a prop-oriented game because, for modern players at least, the pieces do not form a fictional world.[4]

While I agree with Walton that our familiar orientations within games may center more or less on their props, and that the default orientation can be the result of cultural or historical situations, ultimately, I find the distinction between "props" and "content" to be misleading. The problem lies in defining the word "content." Here's Walton's description of prop-oriented make-believe:

> But props are not always tools in the service of make-believe. Sometimes

[4] This was not always historically the case, as I will show in the first chapter. Medieval players were very cognizant of chess-play as constituting a parallel fictional world, mapping the movements of the individual pieces to the specific social classes.

> make-believe is a means for understanding props. The props themselves may be the focus of our attention, and the point of regarding them as props in (actual or potential) games of make-believe may be to provide useful or illuminating ways of describing or thinking about them. (39)

According to Walton, prop-oriented play has the goal of providing "useful ways of describing or thinking about" about props, but this is not the goal of methexis as I understand it. Methectic knowledge-making cannot be restricted to fact-making, what Walton describes as the "principle of generation" whereby props create "fictional truths." Indeed, the ultimate goal of methexis as I understand it is creative practice, not critical reflective practices such as "describing" or "thinking."

If methexis aims at creative practice, how does that differ from describing or thinking? It is helpful to turn to the experience of play itself. Methexis, in its deepest practice, is a type of unreflective doing, what players sometimes call "being in the zone" and psychologists refer to as a "flow state." (Mimesis, on the other hand, relies on the aesthetic distance necessary for comparison, encouraging the conscientious labor of critique.) The player "in flow" does the appropriate action without reflection or critique.[5] She instinctively executes the correct set of movements in relation to whatever stimuli are presented. The experienced baseball fielder knows where to throw the ball before it arrives; the experienced actor knows how to express emotions before his or her character is due to experience them. Moreover, when the

[5] Flow is a central concept for game studies, especially for game design which considers the optimum balance between a game's challenge and a player's skill. A well-balanced game will become increasingly challenging as a player's skill also increases, establishing the optimum environment for flow states, a so-called "flow channel." Creating this "flow channel" can be a tricky balance. If a player feels too challenged, he will become anxious. On the other hand, if a player feels the game poses no challenge, he is likely to become bored. The unpleasant feelings of anxiety and boredom both come about due to the disruption of flow. If players cannot get into a groove, they are likely to quit playing.

appropriate time comes, the veteran player needs little or no reflection to accomplish the relevant task. Methexis, then, aims at a specific kind of bodily attunement or comportment, one where the body acts mostly independently of the conscious mind.

Theater studies offers a theory of play very similar to Walton's game studies model. Jean Alter's *A Sociosemiotic Theory of Theatre* (1990)—published the same year as Walton's *Mimesis as Make-Believe*—describes theater as having two functions: referential and performant. Walton's theory tends to describe activities as "content-oriented" *or* "prop-oriented" whereas Alter does a better job recognizing that the two modes are mutually reinforcing, the former being semiotic and the latter practical:

> When it refers to an imaginary story, theatre is involved in a process of communication; it fulfills a *referential function*, carried out with signs that aim at imparting information. From the perspective of a semiotic theory, this referential function, or referentiality, clearly constitutes the central feature of theatre. But theatre is also a public event, a spectacle or a show, attempting to please or amaze the audience by a display of exceptional stage achievements, that is special *performances*. In that sense, like sporting events or the circus, theatre serves what I shall call the *performant function*: it satisfies our natural desire to achieve or witness something extraordinary. Such *performances* are not communicated with signs; they are experienced directly; they fall outside the operations of semiosis. However, because the performant function coexists with the referential function, and interacts with it, it cannot be disregarded by a semiotic theory of theatre. Indeed, taken together, references and

performances define the dual appeal of all theatre. (32)

Both theories have particular strengths. Alter's theory recognizes that the referential and performant functions reinforce one another, yet Walton's theory has the virtue of ontological specificity, his recognition of the important role props play in relation to players. My own concept of methexis borrows its ontological focus on objects or props from Walton's "prop-oriented" make believe while also insisting, like Alter, that the referential and performant functions of play are coexistent and mutually reinforcing.

Whether we understand the play phenomena of mimesis and methexis as an orientation (like Walton) or a function (like Alter), this experiential division is the basis of my attempt to join drama and game studies within an interdisciplinary framework that I call *play studies*. The following chapters demonstrate new approaches that model collaboration through a shared discourse. These chapters also intervene in familiar, seemingly discipline-bound disputes by engaging with them from the margins of disciplinary knowledge: medieval studies meets game studies, game studies meets media history and archaeology, Shakespeare studies meets media and game studies. The resulting interdisciplinary scholarship demonstrates the potential of a *play studies* framework—both for creating new forms of shared knowledge but also for generating new forms of humanities scholarship beyond the realm of written discourse.

The first chapter, "Medieval Play Studies: Early English Drama, Ludi, and Games," considers the confusion in medieval texts surrounding words like "play," "game," and "ludus." Theater historians have discovered that medieval texts describe

drama and games with the same terminology, casting doubt on whether particular records refer to theatrical performances. The problem, as it turns out, is ours not theirs. Following the work of scholars like John Coldewey, Lawrence Clopper, and Glending Olson, I argue that references to drama must remain indeterminate because "of a medieval habit of mind that does not perceive...that dramatic activity demands a separate attention from other forms of playing" (Olson 203). This confusion may be inconvenient for theater history, but it presents us with opportunity to rediscover medieval ways of thinking about play and to connect the fields of drama and game studies—fields which have only occasionally recognized each other's work.

Game studies has grown very quickly—particularly in the area of video games—but it has not paid sufficient attention to the larger historical understanding of pre-commercial and pre-modern games.[6] Consider the game of chess. My analysis of an early modern English chess book suggests that some medievals understood chess as a didactic game aimed at teaching good rulership, suitable for kings because it taught good kingship.[7] Moreover, they viewed chess as a game enacted by the material significance of its object pieces, amenable to many variants afforded by different-sized boards, pieces, and occasionally dice. We have come to understand chess as a mathematical, strategic game, but in the medieval period the word "chess" referred to the pieces—not a particular game in itself. The rules and equipment for

[6] Mary Flanagan's *Critical Play: Radical Game Design* (2009) is an excellent counter example, featuring games and forms of play that cross major historical and cultural boundaries including medieval and Asian games. Philipp von Hilgers's *War Games: A History of War on Paper* (2012) is another counter example, notable for its diverse examples that include the medieval game Rithmomachia and Christoph Weickman's "King's Game" (1664).

[7] The book in question is a translation of Jacobus de Cessolis's thirteenth-century political treatise, the *Liber de moribus hominum et officiis nobilium ac popularium super ludo scachorum* (The Book of the Morals of Men and the Duties of Nobles and Commoners, on the Game of Chess). The book was incredibly popular, a fact that led Caxton to make it the second book printed in the English language.

playing the chess were flexible. These chess games all shared a type of playful orientation, a particular way of relating players, chess, and checkered boards.

All games and forms of play depend on a kind of playful orientation, the concept I am calling *methexis*. It is present in medieval books, whether they discuss chess, music, or dramatic plays (this chapter considers examples from *Mankind*, from cycle plays, and from *Fulgens and Lucres*). Methexis also surfaces in archaic Middle English locutions ("be game" or "in game") that suggest a particular way of knowing and relating to the material world. Methexis allows us to get at the phenomenology of gaming, to create a cross-historical perspective of play that translates across playing both medieval and modern games.

Medieval language about gaming, then, corrects and complicates modern game scholarship, which tends to view games as commercial products for competitive play—or occasionally as a form of art enabled through subversive play.[8] Medieval games were not commercial nor necessarily competitive. They were certainly not considered "art" in their own time. Hence, my argument builds on the work of speculative realists from medieval studies and game studies who have sought to define games as activities that are irreducible to any particular disciplinary perspective. The result is a way to engage with games that is more historically robust at the same time that it addresses them as sets of practice that transcend historical, cultural, and material boundaries.

[8] The question of whether games constitute "art" has been a significant topic of public discussion and scholarship. In a 2010 piece called "Video games Can Never Be Art," noted film critic Roger Ebert lambasted a TED talk by game designer Kellee Santiago. Many scholars have written on games as a form of subversive art including Alexander Galloway's *Gaming: Essays on Algorithmic Culture* (2006), Ian Bogost's *Persuasive Games* (2007), Mary Flanagan's *Critical Play* (2009), Brian Upton's *The Aesthetic of Play* (2015), Michael Maizel and Patrick Jagoda's *The Game Worlds of Jason Rohrer* (2016).

I take that challenge seriously in chapter two, "Objects of Play: Media and Methexis in the 20th Century," which jumps forward to the 20th century to examine games in their modern commercial and digital instantiations. Doing so allows me to situate the phenomenological discourse of *play studies* within more recent work in game studies that is predominantly focused in the present. Moreover, attention to video games at this juncture situates them within the larger history of gaming and computer history. Finally, the unique properties of digital media function as a theoretical extreme from medieval games, making for a significant test of the versatility of both methexis and *play studies*.

Like Walton's prop-oriented make-believe, I define methexis as a type of material or object orientation. This presents a challenge for methexis since software—including video games—is commonly understood to be immaterial. This supposed immateriality has been debunked by recent work in the field of media archaeology by scholars such as Matthew Kirschenbaum, Jonathan Sterne, and Wolfgang Ernst who have exposed the underlying material mechanisms of software. I demonstrate this materiality firsthand through scientific methods, for example high-powered microscopes that rely on electrons or lasers to make digital inscription visible to the human eye. I also discuss how software came to be understood as immaterial by examining the scientific and mathematical works of seminal figures like Alan Turing, John von Neumann, Claude Shannon, and John Tukey. We see how the term "computer" metamorphosed from a term for human laborers to "hulking giants" to black boxes. The result is a chapter that is approachable without sacrificing the technical details of software history, one that corrects still commonly held

assumptions that software is inherently immaterial, virtual, and/or digital.

In addition to examples from early computer history, there are also particular histories that derive from game studies. One example of the materiality of software involves the history of Tetris on the Nintendo Entertainment System (NES). Nintendo designed a program called 10NES to reject non-authorized games from running on the system. The goal was to authorize only games that Nintendo felt met a particular standard of quality. Although Atari sought to bring Tetris to the NES, they resented the terms of Nintendo's contract and sought a way to circumvent the 10NES program through reverse-engineering. Their most daring method—one that proved only half successful—was to dislodge the chip holding the program in order to see the software's material traces under a high-powered microscope.

While the larger goal of chapter two is to draw all games under the phenomenological umbrella of methexis, it also demonstrates and relies on speculative forms of scholarly knowledge-making, arguing that a fuller understanding of games depends on the willingness of humanities scholars to build, hack, and play with media using methods normally reserved for artists and scientists. Following game scholar Ian Bogost's philosophical project of alien phenomenology, I argue for new kinds of humanistic enterprise such as critical making, carpentry, and ontography. Examples of this type of work include Bogost's "I am TIA" and Ben Fry's Nintendo emulator called "The Deconstructulator." My own contribution closes the chapter in the form of a video ontograph that demonstrates the game Space Time, a pinball machine that exposes the way games can be simultaneously electrical/mechanical, virtual/material, and digital/analog.

The final chapter, “Theater Games: Playing with Shakespeare in the Past and Present” follows closely on the work of the previous two chapters. The first half considers the lasting legacy of the medieval play-as-game by way of a close reading of *A Midsummer Night’s Dream*. The second half takes up mediations of Shakespeare in the present, especially the role of Shakespeare for testing new technologies, including video games. Throughout this chapter, I dwell on the way Shakespearean drama functions as an opportunity for expressive play.

The first London theaters were conceived as play venues, spaces that could display and anchor traveling players whose skills included singing, music playing, miming, dancing, fencing, clowning, and acrobatics. These venues were based on—and sometimes also featured—the sports of animal baiting and cock fighting. While we tend to think of plays as carefully crafted and enacted narratives, it was also common for early stage plays to be interspersed with bouts of dancing, music, or other performance skills. We have comparatively sparse records for understanding these alternate forms of play since our best records are the playbooks created by playwrights or company members. Still, we can get some sense of the incredible variety of stageplay by examining stage directions. They also reveal the surprising extent to which particular companies left performances open, inviting players to be creative on stage. Early modern playbooks show, for example, that players were sometimes given license to ad-lib stage action and improvise lines.

In comparison to the medieval drama that preceded it, early modern theater grew increasingly realistic and mimetic. But methexis remained important: early modern plays were often deeply metatheatrical, intentionally exposing the fictionality

of play-making. This metatheatricality often centers on players who acted either outside or at the margins of a play's fictional world. Such players included prologues, musicians, choruses, clowns, and fools—all characters who were given special license to speak to and engage with audiences directly.

I borrow Weimann and Bruster's term, *presentation*, to refer to the way these metatheatrical characters set and alter the fictional truths of a scene. Presentation—which includes both speech acts and material practices—allows characters to change the rules of the game with impunity. The significant examples in this chapter are *A Midsummer Night's Dream*'s rude mechanicals and fairies. Puck, for example, is able to interact with the characters of the play, with the audience, and also to generate his own fictional truths. In some cases, this ability is authorized by magic, such as when Bottom's head is turned into an ass. Other times, however, it is simply metatheatrical, like when Puck sets the scene by describing it for the audience or directly asks them for applause. Like his medieval precursor Titivillus, Puck freely travels back and forth between mimesis and methexis as a character in the play's fiction who shapes the game from within and without its fictional world.

The final section of chapter three considers the ways that new Shakespearean productions constitute their own forms of game—forms answerable to new media adaptations. Media scholar Jonathan Sterne has coined the term "Shakespeare processing" to refer to the way that Shakespeare is used to demonstrate new technologies. I consider two such recent examples. In 2013, the Royal Shakespeare Company partnered with Google to stage *A Midsummer Night's Dream* in a production that took place onstage and also in the virtual space of Google+. The

resulting mashup turned Shakespeare's play into a social network, bringing in all-new characters with whom audiences were encouraged to interact. The second example is the 2017 production of *To Be With Hamlet* that stages *Hamlet* in a multiplayer virtual reality environment. Both examples consider the way Shakespeare functions as a test of cultural expressivity, serving variously as a form of cultural endorsement, ready-made content (e.g. the designer's "*lorem ipsum*"), and an opportunity for playful engagement.

The dissertation concludes by taking up the playfulness of Shakespeare in commercial games, both digital and traditional. There are dozens of Shakespeare games that have not received much scholarly attention—despite the fact that Shakespeare games have historically focused on imparting knowledge to young and amateur scholars. There are also a growing body Shakespeare games that seek to turn Shakespearean acting into a form of livingroom play, including *Shakespeare: the Bard Game* (2004, board game), *Shakespeare* (2015, board game), and *Play the Knave* (2015, Xbox 360 Kinect). These games offer a perspective on popular attitudes about Shakespeare, that his works do important cultural work outside the realms of professional and academic discourse that Martin Orkin calls the "Shakespeare metropolis."

This heavily interdisciplinary dissertation draws together scholarship from literature, history, philosophy, mathematics, and science, but its most significant contribution is the creation of a shared phenomenological discourse that bridges drama and game studies under the banner of *play studies*. The utility of this framework is demonstrated through the diversity of the chapters contained herein.

The first chapter connects the history of drama and games in the medieval period, shedding light on early English records of playing. The second chapter expands the phenomenology of play across digital media, connecting digital video games with other forms of play. The final chapter describes the lasting legacy of drama-as-play for the Shakespearean stage and considers the future of Shakespeare-as-game. Each chapter builds on the concept of *play studies,* demonstrating how future work might use or adapt similar methods.

The contribution of the dissertation also goes beyond these two fields, advancing research methods that are notable for the broader humanities. Some of the methods demonstrated are particularly innovative for English and History, fields that both remain dominated by written, most often paper-based, argumentation. In such a conservative context, the adoption of visual rhetoric and digital ontography—particularly scientific and moving photography—is of special note.

Medieval Play Studies: Early English Drama, Ludi, and Games

Medieval drama has a genre problem and the problem cannot be attributed to a few particularly troublesome outliers. It applies to every single play from the period because the generic terms used to describe medieval drama (miracles, moralities, cycles, etc.) belie a complicated network of play activities. We can see a hint of this issue in the way the titles of essays in *The Cambridge Companion to Medieval English Theatre* shifted from the first edition in 1994 to the second edition in 2008. Richard Beadle's chapter "The York Cycle" was revised as "The York Corpus Christi Play," Peter Meredith's "The Towneley Cycle" became "The Towneley Pageants," and Darryl Grantley's "Saints' Plays" became "Saints and Miracles." The uncertain boundaries of dramatic genre cannot be explained by the scarcity of dramatic records because the issue is deeper than a lack of documentary evidence. Even though the Records of Early English Drama (REED) project has afforded an unprecedented and expansive view of local and specific play practices, its new data continues to upset, rather than organize, the taxonomy of dramatic genre. The categories that define medieval drama have been, and will continue to be, tenuous because modern ways of thinking about drama differ fundamentally from those of the Middle Ages. Instead of a systematic taxonomy of drama, we are faced with a variety of play activities whose family resemblances shift depending on how we consider them.

Any overarching taxonomy of medieval drama is likely to be contentious due to the complexity of the records. At the same time, medieval scholars must concede that the unified category of activities known as "medieval drama" remains

fragmented because it is an artifact of the writing of dramatic history. For those outside medieval studies, "medieval drama" often functions as a convenient shorthand, a homogenization of a large variety of play activities which are at once reminiscent of modern stage plays and indispensable for understanding their "pre-history." In some sense then, the "genre problem" might be better-described as a problem of disciplinary perspective; the medieval activities of interest often cannot be disciplined into a single category because they freely mix acting, singing, dancing, and games. Thus, a great deal of so-called medieval drama does not fit popular expectations of what drama is (or does).

For this reason, criticism of medieval drama often begins with a well-worn trope: the disavowal of familiar drama.[9] This trope has become necessary because there was no widely understood category of activities known as "drama" in the Middle Ages. This is not to say that the activities collectively known as medieval drama had nothing in common. On the contrary, we can say fairly conclusively that they had one very specific thing in common: they were all understood as types of playing or games (rather than narrative scripts to be enacted). Why then is there a scarcity of work on medieval drama which utilizes recent scholarship in the field of game studies?[10] One reason for this may be that game studies scholars themselves have not adequately attended to medieval games. Their studies have focused on games of the late 20th and early 21st century (especially video games). But the consideration of games in the medieval period represents an important opportunity for both disciplines to reconsider the historical backdrops of their fields. Using the

[9] See, for instance, Glynne Wickham's introduction to *The Medieval Theatre*.

[10] A notable and recent exception is Peter Ramey's article "The Audience-Interactive Games of the Middle English Religious Drama" (2013).

methods of game studies, medieval scholars could reconsider the connections between a wide variety of popular activities considered games in the period (drama, music, dancing, storytelling, etc.) while game scholars could employ medieval conceptions of play to achieve a fuller view of game history, one whose central concepts might translate better across history and media.

These two heretofore unlikely bedfellows, medieval studies and game studies, have much to offer one another.[11] Our understanding of medieval drama could be enriched by considering activities like miracles, moralities, and cycles, as communal games. More than frivolous pastimes, these amateur games were complex networks of social codes, identity performance, and resistance. They relied on what Claire Sponsler calls "regulatory discourses" designed to "naturalize certain subject positions—in the sense of making those subject positions seem innate, customary, and unquestionable" (*Drama and Resistance* 5). In recent years, game scholar Ian Bogost has made a very similar argument about the regulatory discourses embedded in video games (*Persuasive Games: The Expressive Power of Videogames*). Bogost's work could be productive for thinking about the type of dramatic worlds found in medieval drama, especially considering that medieval drama scholars have long sought to describe plays as phenomenological (rather than narratotological) activities.[12] Moreover, such a game-based approach could draw from and expand on

[11] I am certainly not the first to connect games with medieval literature and drama. The study of Chaucer in particular has a rich history of criticism concerning games. But-previous scholarship has not had the benefit of current work in game studies and it has often sought to explain literature through games rather than unite the study of games and literature. Michael Olmert's "The Parson's Ludic Formula for Winning on the Road [to Canterbury]" (1985) is a useful reference for discovering the long history of game criticism in relation to Chaucer.

[12] See, for instance, Richard Axton's *European Drama of the Early Middle Ages* (1975) and Claire Sponsler's *Drama and Resistance: Bodies, Goods, and Theatricality in Late Medieval England* (1997) and *Ritual Imports* (2004). Also, see work on drama as ritual by Sarah Beckwith.

recent trends in the study of medieval drama which have sought to describe plays in terms of their sociomaterial practices.[13]

Nor is it only medieval drama studies which might benefit from the pairing. If the work of medieval scholars in the latter half of the 20th century effectively challenged the notion of a simple evolutionary history of drama, the field of game studies now faces a similar challenge. Just as the efflorescence of the commercial London stage forever changed our sense of drama at the end of the 16th century, the creation of a major commercial game industry at the end of the 19th century altered the popular understanding of games, changing them from activities into commodities. In both cases, the social importance of earlier games was obscured by their mutation in the wake of commercial success. One of the central aims of this chapter, then, is to recover a pre-commercial, pre-modern sense of the words "game" and "play," a sense enacted by the material significance of objects.[14] This opening chapter on medieval drama, then, is the frame for a much larger argument about the phenomenological nature of play as a material activity. It attempts to lay the initial theoretical groundwork and to argue for a closer connection between the future study of drama and games under the rubric of play studies. The time has come for a comparative,

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[13] For materiality and medieval studies, see Claire Sponsler's *Drama and Resistance* (1997), Susan Crane's *The Performance of Self: Ritual, Clothing, and Identity During the Hundred Years War* (2002), Sarah Beckwith's *Signifying God: Social Relation and Symbolic Act in the York Corpus Christi Plays* (2003), Kellie Robertson's "Medieval Things: Materiality, Historicism, and the Premodern Object" (2008), and Elizabeth Williamson's *The Materiality of Religion in Early Modern English Drama* (2009).

By "sociomaterial practice," I mean material practices that share a specific cultural perspective or frame of reference (such as religion or feudal order). For more on "sociomaterial practices" see Wanda J. Orlikowski's "Sociomaterial Practices: Exploring Technology at Work." See also the similar concepts of *symbolic interactionism* (Mead, Blumer), *actor-networks* (Callon, Latour), *sociotechnical ensemble* (Bijker), *object-centered sociality* (Knorr Cetina), *relational materiality* (Law), and *material sociology* (Beunza et al.).

[14] The word "significance" here is meant in the semiotic sense, as in what an object means. My concern with object significance is in concert with the "object-oriented" turn in medieval studies by scholars such as Jeffrey Jerome Cohen, Jonathan Gil Harris, Kellie Robertson, Karl Steel.

scholarly methodology for studying play across a variety of cultures, histories, and media.[15]

[15] My thinking has been influenced by that of earlier scholars in game studies. See, for example, Brenda Laurel, *Computers as Theatre* (1993) and Janet Murray, *Hamlet on the Holodeck* (1998).

Medieval Games: The Origins of English Theater

For those outside of medieval studies (and even some inside), it may come as a surprise to learn that the subject of the second book printed in the English language was a game. That book, William Caxton's edition of *The Game and Playe of the Chesse* (1474), is a translation of Jacobus de Cessolis's thirteenth-century political treatise, the *Liber de moribus hominum et officiis nobilium ac popularium super ludo scachorum* (The Book of the Morals of Men and the Duties of Nobles and Commoners, on the Game of Chess). For a modern reader, this volume is notable for what it does not discuss. Jenny Adams, the modern editor of *The Game and Playe of the Chesse*, emphasizes that, "Despite its title, Caxton's *The Game and Playe of the Chesse* does not, in fact, have much to say about a game or about playing it." Instead, Cessolis's treatise is focused on chess as a representation of social order. Scholars often explain the book's seeming indifference to chess play as a matter of generic constraint. As a *speculum regis* (or mirror for the prince), the first purpose of *The Game and Playe of the Chesse* would have been to serve as a handbook for nobility on ruling their kingdoms (not their chessboards).[16] Hence, Cessolis's claim that the game's "first cause," or purpose, was not to amuse the king but rather "to correct and repreve him" (1.49). In other words, the purpose of chess was to teach good rulership. Good players made good kings (and vice versa).

[16] Adams pushes back against the classification *speculum regis*, arguing that the book might better be described as a *speculum corpora politica* because Caxton's introduction is oriented toward the larger political community beyond the aristocracy. In either case, it is clear that the play of chess is framed as a didactic, not merely entertaining, activity.

Chess as a teaching tool for ruling kingdoms may seem like a stretch to modern players but it is worth considering that medieval chess was also played on very different terms. Chess, like sovereignty, answered to the ordering principles of the great chain of being, from the powerful king down to the lowly pawns. While the king, queen, and knights remain familiar to modern chess players, the alphyn (or wiseman) took the place of the modern chess bishop. The rook represented a vicar, and each of the eight pawns signified a distinct class of medieval laymen.[17] The social status of each piece corresponded with its placement on the board. The smith stood before the right-hand knight, "For hit apperteyneth to the knyghtes to have bridellys, sadellis, spores, and many other thynges maad by the handes of smythes…" (3.183-86). The keepers of the city stood before the left-hand knight because "hit behoveth that the gardes and offycers of the townes be taught and ensigned by the knyghtes, and that they knowe and enquyre how the citees and townes ben governed, whiche aperteyneth to be kept and defended by the knyghtes" (3.1176-79). These details—which modern chess players deem extraneous—are treated in great detail by Cessolis.

The affordances of each piece were also closely tied to its social station.[18] The queen, who moved diagonally two spaces, is restricted because "she hath not the nature of knyghtes, and hit is not fittyng ne covenable thing for a woman to goo to bataylle for the fragylité and feblenes of her" (4.219-20). The reach of the rooks (or

[17] As explained by the book's third chapter, these classes are the laborers and workmen; smiths; notaries, advocates, scriveners, drapers, and clothmakers; merchants and moneychangers; physicians, spicers, and apothecaries; taverners, hostelers, and vitalers; keepers and guards of towns; and ribalds, dicers, messengers, and couriers.

[18] For more on affordances as action possibilities, see J. J. Gibson's "The Theory of Affordances" (1977).

vicars) was wide because "theyr auctorité is grete, for they represente the persone of the kyng. And therfore, where the tablier [table/board] is voyde, they may renne alle the tablier, in lyke wyse as they goon thrugh the royame" (4.322-24). While it may be tempting to attribute these elaborations to the practical rhetoric of a *speculum regis*, other medieval texts couch the pieces' capacities in similar language. For example, Alphonso X's Old Spanish translation of the *Libro de acedrex, dados e tablas* (*Book of chess, dice and tables*) (1283), arguably the most important medieval text on board games, also ties the movement of each piece to its social station. The king's sluggishness is explained by his thoughtfulness: "just as the king should not rush into battles but go very slowly and gaining always from the enemies and fighting so as to beat them, likewise the king of the chessmen is not to move more than one square straight or diagonally as one who looks all around him meditating on what he is to do." [19] While the king's movement is ponderous, the pawns' moves are dastardly and no less class-specific: "But there are also some that play the pawns to the second square on their first move and this is until they capture because afterwards they cannot do it. And this is like when the common people steal some things, that they carry them on their backs" (fol. 4r). Such commentary, which is common in medieval gaming texts, exposes the importance of social allegory to medieval chess play. Chess play was more than a diversionary fiction; it was the social and material performance of medieval society.[20]

[19] Fol. 3V; translated in Sonja Musser Golladay's dissertation "Los Libros de Acedrex Dados E Tablas: Historical, Artistic, and Metaphysical Dimensions of Alfonso X's Book of Games" (2007).
[20] Nor was chess correlated only with political order; in the four player chess variant in the *Libro de acedrex, dados e tablas*, each player represents a season as well as one of the four humors.

To play chess was also to perform medieval social identity, to draw distinctions between good and evil, nobility and laymen, privilege and duty. Considered in this light, chess was not merely a form of entertainment but a practical game of larger social consequence; it sought to establish and create social consensus on the nature of political order. Chess, in this sense, was not merely reflective of some reality "out there"; rather it actively instructed (and constructed) players' senses about the order of the medieval world. This, at least, is part of Jennifer Adams's argument in *Power Play: The Literature and Politics of Chess in the Late Middle Ages* (2006).[21]

Conceiving of games as systems of social practice is also central to the thinking of modern game scholar and designer Ian Bogost. In *Persuasive Games*, Bogost argues that game rules constitute a type of "procedural rhetoric" in relation to social norms:

> *Procedurality* refers to a way of creating, explaining, or understanding processes. And processes define the way things work: the methods, techniques, and logics that drive the operation of systems, from mechanical systems like engines to organizational systems like high schools to conceptual systems like religious faith. *Rhetoric* refers to effective and persuasive expression. Procedural rhetoric, then, is a practice of using processes persuasively. (2-3)

[21] There has been considerable work done connecting chess to political history. That the chess queen became the most powerful piece on the board in the 15th century has been linked by Marilyn Yalom to the rise to power of Queen Isabella of Castile. See *The Birth of the Chess Queen: A History* (2005). See also the essays in *Chess in the Middle Ages and Early Modern Age* (2012), edited by Daniel E. O'Sullivan.

Bogost focuses on modern video game processes (i.e., computer code going through a processor) but his argument also applies well to a game like chess. Both *The Game and Playe of the Chesse* and the *Libro de acedrex, dados e tablas* make an explicit connection between the procedural affordances of each piece and their larger social importance. The back-row pieces are powerful because they represent nobility. Pawns are common because they represent commoners.

Bogost's concept of procedural rhetoric exposes many of the socially important aspects of medieval chess, but it is worth noting that the rhetoric of chess as a sociomaterial practice extended even beyond the pieces' affordances.[22] The rules found in *The Game and Playe of the Chesse* require that all pawns move in a similar fashion, but, as I mentioned above, it is clear that each pawn also had a unique performative identity as one of the commoner classes. Few 21st-century chess players would be aware of the social distinctions between pawns because they have become irrelevant to the "play" of the game, but these distinctions were important to some medieval players precisely because the game sought to model medieval society.[23] As

[22] As Manuel Sicart's "Against Procedurality" argues, the meaning behind games is far more than what the designer or rules intend. Bogost's concept of procedural rhetoric suggests that the processes of games have rhetorical effects but the possible meaning of games is more complex than their rules. As I am sure Bogost himself would argue, the "meanings of chess" extend beyond creator and player alike.

[23] These differences are sometimes visible in chess sets from the period. For example, in the 14th century Persian game of Tamerlane chess, each pawn is unique. Another possible example may come from the famous Lewis Chessmen (12th century, Scotland). The variety of pawns in the chessmen has led some scholars to assume that the pieces might belong to five or more sets. Alternatively, the pieces may belong to four sets which use dissimilar pawns. The pawns' differences could be skeuomorphs (the archaeological term for a design feature which is no longer functional). An in-depth analysis of the chess pieces by David H. Caldwell, Mark A. Hall, and Caroline M. Wilkinson dismisses the possibility that the variety of pawns were for five or six separate chess sets, but stops short of claiming the pawns' differences may have had social significance: "Dalton's catalogue entries indicate that he saw them falling into five or six different types, but we do not believe that this is compelling evidence for more than four sets. As with the face-pieces [as opposed to pawns], there was probably no intention by whoever assembled them in sets to achieve the same level of matching as is now readily achieved in mass-produced sets manufactured in factories" (182).

Jenny Adams emphasizes in *Power Play*, medieval chess was more than an agonistic battle of wits; it "gave instruction on citizenship and on moral autonomy, functioning as a medium for the articulation and exercise of power" (7).

The play of chess performed medieval political order in miniature, from the lowest laborers to the loftiest nobility.[24] No medieval player could have escaped the fact that kings, queens, and knights were more than just pieces on the board; they represented the familiar social order. It seems likely that for medieval players the events of a particular chess game would have mirrored or distorted the familiar, "real-life" dramas of the aristocracy. After all, every game of chess can be said to tell a story with every move revealing a new aspect of the plot—taken together, they formalize the political and social drama of medieval life in miniature.

We still sometimes describe games as "dramatic," but the connection between drama and games was nearly indistinguishable in the 15th century. Certainly, a large body of medieval research has taken note of the connection between medieval drama and games. In the first half of the 20th century, E. K. Chambers's *The Medieval Stage* (1903) and Johan Huizinga's *Homo Ludens* (1938) both understood medieval drama as a form of play. Perhaps the most well-known and influential connection is to be found in V. A. Kolve's *The Play Called Corpus Christi* (1966):

> In England in the Middle Ages, one could say "We will play a game of the Passion" and mean what we mean when we say "We will stage the Passion." The transition from one to the other is more than a semantic change; it is a change in the history of theater. (14)

[24] This performance-in-miniature is reflected right down to Cessolis's description of the chess table as forming the border of the city's walls (4.27).

The discovery that medieval drama was ludic has forced theater historians to carefully define the words "ludus," "play," and "game," words that are highly ambiguous in Middle English.[25] Before I proceed, I must explain my reasoning for preferring the word "ludus" over either "play" or "game."

The primary reason I prefer the word "ludus" is because it opens up new critical perspectives on miracles, moralities, and cycles that the dramatically-inflected word "play" tends to obscure.[26] The word "ludus" is not suggestive of modern, narrative-driven drama; it also resists modern preconceptions about the word "game."[27] In short, ludus is the most practical term because it is defamiliarizing, because it asks readers to eschew their cultural certainty about words like "play" and "game." Part of my argument is that these words did not have the same meaning in Middle English. By keeping a healthy distance from the connotations of these words in Modern English, we can avoid assumptions that detract from our understanding of medieval drama.

Modern readers should be ready to admit they are in unfamiliar territory when the Friar in *The Canterbury Tales* says, "I wol yow of a somonour telle a game" (1279). Or when Aleyn, in the "Reeve's Tale," exhorts the miller to "heer a noble game" (4263). We know Harry Bailey is not describing chess when he says, "A man

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[25] For more on these terms, see Glending Olson, Glynne Wickham, Lawrence Clopper, Laura Kendrick, and Tom Bishop.

[26] It should be noted that the word "ludus" is used in medieval texts to describe vernacular drama apart from liturgical drama (variously called ordo, procession, representation). For scholars of classical antiquity, the choice to use "ludus" may open up another can of worms but insofar as medieval drama is concerned, I believe it is a helpful distinction. The word "ludus" has an interesting etymology and history, one which deserves further critical inquiry, especially as it relates to Roman schools. For an extended etymological reading of the words "game" and "play" in the medieval period, see Laura Kendrick's "Games Medievalists Play" (2009).

[27] These modern preconceptions include the view of games as agonistic activities with winners and losers, games as commercial objects to be bought and sold, and as sets of rules to follow. None of these is necessarily true about medieval games.

may seye ful sooth in game and play" (4355). At interpretive moments like these, it is tempting simply to conflate the word "game" with the word "play."

Take the title *The Game and Playe of the Chesse*: this title's coordinating conjunction aligns the words "game" and "playe" in a parallel structure. But are these nouns or verbs? Although modern English tends to use "game" as a noun and "play" as a verb, Middle English had no such tendency; in this case, the word "playe" is a noun that refers to chess.[28] This is evident from the fact that the article "the" precedes the word "game." It is also clear from the text itself, which refers to chess as both "play and game" (4.8.434) and a "playe or game" (4.1.19). To use "play" as a noun to describe games is common in medieval and early modern texts. Even as late as 1759, an early board game by John Jeffries was entitled *A Journey Through Europe, or The Play of Geography*.

If games were sometimes referred to as plays, the opposite was also true: what we now call medieval "drama" was referred to as a game. Witness the 15th-century morality play, *The Castle of Perseverance*, which concludes with God's proclamation: "þus endyth oure gamys." Or consider the banns of the N-Town cycle plays:

> Now haue we told yow all bedene
> The hool mater þat we thynke to play.
> Whan þat ye come þer xal ye sene
> This game wel pleyd in good aray.

[28] The most obvious exception in modern English is in the case of drama where "play" is deployed as a noun. This usage is a linguistic trace of early English drama's roots in games.

Even the language of medieval theatrical production suggests gaming. Medieval and early modern texts commonly refer to "actors" as "players," "scripts" as "play books," and "props" as "game gear."[29]

Scholars reckon with this semantic slipperiness whenever they come across records that fail to distinguish between drama and other types of games. In *Drama, Play, and Game: English Festive Culture in the Medieval and Early Modern Period* (2001), Lawrence Clopper laments the indeterminacy of medieval language indicating drama:

> The most vexed medieval usage is *ludus*, or "pley," for it is tempting in many cases to read these terms as "drama" when there is insufficient evidence for that understanding…Both *ludus* and "play" include all kinds of games and sports; in addition, a "player" may not only be a participant in any of these activities but a musician or even a player at dice and cards. (12)

Clopper's point should not be understated: Medieval texts often fail to distinguish between drama and other types of games because the categorical difference between a drama like *Mankind* and a game like chess is a modern, not medieval, distinction. For medieval people, both were forms of play and, thus, both were also games. The semantic slipperiness is perhaps best expressed by medievalist Glending Olson concerning the indeterminacy of the word "ludus" in Robert Holcott's commentary on *The Book of Wisdom*:

> The reference, in fact, is and will remain indeterminate because of a medieval habit of mind that does not perceive, at least at the level of generality of the

[29] See Lawrence Blair's "A Note on the Relation of the Corpus Christi Procession to the Corpus Christi Play in England."

> passage in question, that dramatic activity demands a separate attention from other forms of playing…the effort to determine whether a given medieval reference to playing is to drama in the modern sense may also be anachronistic, helpful perhaps to some kinds of theater history but rather missing the point if the goal is to understand certain medieval attitudes toward play and performance. ("Plays as Play" 203)

As Olson insinuates, the ambiguity of medieval language about play challenges our modern perspective but it might also present us with an opportunity to revise our thinking about medieval drama. Conceiving of medieval "plays" as drama is helpful for theater history, but it also distinguishes one form of play from another in a way that medieval people did not.

When we attempt to recover a medieval perspective, we have compelling reasons to consider miracles, moralities, and cycles as ludi rather than dramas. At the very least, the term "ludi" tacks away from any sense we might have that medieval drama derives lineally from classical drama.[30] The Aristotelian generic framework addressed in the *Poetics* has little or no authority over these medieval ludi. There is also good reason to dismiss the notion that "medieval drama" was an intermediate form, an evolutionary bridge from liturgical sermons to the Elizabethan stage.[31] While it is certainly true that medieval ludi influenced the narrative drama of the early

[30] With the exception of a few plays (notably those of Hrotsvitha of Gandersheim, who wrote religious plays in Latin modeled on Terence), vernacular medieval drama was separate and unique from classical drama. In the medieval period, categories like comedy and tragedy were modes or styles rather than genres. See Clopper's introduction to *Drama, Play and Games*, which attempts to address a number of terminological issues surrounding medieval drama (11).

[31] This evolutionary theory of secularization, prominent in the work of Karl Young and E. K. Chambers, has been put to rest. See Chambers, "Out of the hands of the clergy in their naves and choirs, [medieval drama] had passed to those of the laity in their market-places and guild-halls" (I.69).

modern stage, they also strike out conspicuously on their own, especially insofar as they are activities whose playing often stresses participatory and social performance.

Although we are all familiar with the type of activities referenced by the phrase "medieval drama" (what at one time or another have been called cycles, moralities, mysteries, miracles, saint plays, pageants, Corpus Christi Plays, interludes, mummings, etc.), it must be acknowledged that *soi-disant* "medieval" plays regularly turn out to be (early) modern. Consider the Blackwell anthology of *Medieval Drama*, which contains nothing before 1400 and several plays beyond the 1550s, including *The Enterlude of Godly Queene Hester* (1561) and selections from the Chester Cycle—which was performed until 1575. In the introduction, editor Greg Walker regrets that "for lack of space" he cannot include "*Respublica* and *Gorboduc*, which would have been taken the volume into the reign of Elizabeth I" (vii).[32] My point is not simply that we should reconsider in which period these ludi belong, but that their designation as "medieval" props up a discredited grand narrative of dramatic secularization that culminates with the narrative plays of the Renaissance.[33] As Richard K. Emmerson warns, we should be sensitive to the fact that:

> the amateur and professional, the outdoor and the indoor, the traditional and the novel, the popular and the "humanist," the religious and the political, the corporate "Register" and the printed text, the cycle play, morality play,

[32] In the early modern period, many court masques display similar ludic tendencies—being participatory, didactic, and rhetorical.

[33] For more on the periodization of drama, see Richard K. Emmerson's "Dramatic History: On the Diachronic and Synchronic in the Study of Early English Drama" (2005) in the special edition of the *Journal of Medieval and Early Modern Studies* dedicated to James Simpson's *Reform and Cultural Revolution*. See also Theresa Coletti's "The Chester Cycle in Sixteenth-Century Religious Culture" (2007) and Kurt Schreyer's "'Erazed in the book'?: Periodization and the Material Text of the Chester Banns" (2012).

> interlude, saint play, biblical play, royal pageant, history play, comedy, tragedy, and university play (as well as the numerous folk plays forever lost) were simultaneously part of this incredibly rich theatrical era...
>
> [the]"medieval" and "Renaissance" not only overlap but, for drama before the establishment of the commercial theaters, are one. (57)

The sixteenth century staged a dizzying array of types of playing, whose connections do not form a simple progressive narrative of dramatic history. Lawrence Clopper asks us to be wary of "a history of the drama that encourages in any way an evolutionary model—medieval to early Tudor to Renaissance or Elizabethan drama—or that ignores the persistence of medieval drama in the sixteenth century" (269). The difference between *Mankind* and Marlowe should not be attributed to the artistic genius of the Renaissance playwright but to the cultural aims of *two distinct forms of play* which were, for quite some time, cohabitant, related, and yet distinct practices.

One distinctive aspect of medieval ludi, as opposed to commercial theater, was that they were often predominantly communal and participatory. They often stressed social play over narrative plot. For this reason, such ludi should be judged not just for the artfulness of the familiar stories they told but for their attempts to model and perform social order. As O. B. Hardison Jr. and William Tydeman have pointed out, medieval drama cannot be read as merely a form of dramatic imitation or mimesis:

> Such a concept of theatre has in recent years been complemented by a revival of the notion that the essence of drama is not to imitate life, but rather to present a heightened sensation whose aesthetic premise lies in *transcending*

> strict verisimilitude, 'piercing the veil" of actuality so that what is done intensifies what we see or feel. (Tydeman 5)

Just as the game of chess bolstered medieval understanding of social order through the performance of social ordering and power, other ludi transcended mimetic realism in order to "pierce the veil" of medieval systems of practice. Chess was much more than a mimetic fiction; it was a symbolic and practical system of knowledge. Aristotle's *Poetics* and narrative theory are productive discourses for classical and Elizabethan theater but they are an inappropriate metric with which to judge many medieval ludi. Narrative is a good yardstick for *Hamlet* but it is a relatively poor measure for chess.

What would it mean, then, to consider medieval drama in ludic terms? In many ways, ludic analyses of medieval drama may be reminiscent of the materialist/phenomenological work of scholars like Claire Sponsler, Susan Crane, and Sarah Beckwith. At the same time, a ludic approach could help clarify the systemic genre problem of medieval "drama" studies. A ludic approach would bring together large variety of medieval play activities (drama, mummings, bearbaiting, dancing, music playing, etc.), respecting the permeable boundaries of medieval ludi. A ludic perspective might also push back on the disciplinary imposition of theater studies, asking critics to consider the relationships between medieval plays and other types of play more closely.

In the following section, I consider two plays: *Mankind* and *Fulgens and Lucres*. These ludi are certainly not "typical" of medieval drama (whatever that might mean). Nor do they emerge from similar contexts. I have chosen them because they

are both highly meta-theatrical plays; they challenge modern notions of drama-as-mimesis. They also both frame drama through play, exposing the ways in which medieval drama was practically closer to an improvisational game, closer in spirit to charades or the comedy show *Whose Line is it Anyway?*. Compared to the narrative-driven theater of the 17th century London stage, medieval ludi tended to be character-driven. Medieval players often played two, three, or more parts. Characters were not so much performed as embodied. In short, medieval drama was a theater of becoming. The skilled player was one who could become a thing, whether that thing was familiar (a servant), otherworldly (Satan), or even abstract (covetousness).

The Theater of Becoming: *Mankind* and *Fulgens and Lucres*

Analyzing *Mankind* using a procedural approach like Bogost's is helpful for attending to the rhetorical and performative elements of play. If, like chess, the purpose of a morality like *Mankind* was "to correcte and repreve" (Cessolis 1.49), then it accomplishes this end through the rhetorical *modeling process* of playing, what Bogost refers to as "procedural rhetoric." To play *Mankind*, then, was, in some sense, to submit to the order of its ludic world, embodied by its allegorical characters. From a player's phenomenological perspective, the activity of playing is a type of practical re-orientation to the familiar world. To play is to create a new, yet temporary, ludic world—one which has the potential to redefine familiar relationships in ways that support or defy social norms. Moreover, this ludic world—generated by what Coleridge later called the "suspension of disbelief"—could extend beyond the immediate experience of the players to encompass the audience as well. This is especially evident in a ludus like *Mankind*, where-audience members function as significant players in their own right.

In *Mankind*, five players become vices—Mischief, Nought, Nowadays, Newguise, and Titivillus—who battle the Mercy player for the soul of the protagonist Mankind. Compared with the learned—and boring—lectures of Mercy, the salacious language of the vices provides a type of guilty pleasure. When Mercy pontificates in Latin, Newguise quips, "Ey, ey, your body is full of English Latin! / I am afeard it will brest (burst)" (124-25). Nowadays, for his comic part, asks politely for Mercy to translate the following into Latin, "I have eaten a dishful of curds, / And I have shitten your mouth full of turds" (131-32). The vices' jokes are alluring (not just for

Mankind but for the audience as well); they attract both Mankind and the audience to-the vices (and later to embodying vice themselves).

As the vice trio Nought, Nowadays, and Newguise lure Mankind to sin, they also solicit the audience to help them exert peer pressure. Under the guise of a "Christmas song," Nought begins to sing while Nowadays and Newguise coerce the audience to join the refrain. The audience's—possibly hesitant—decision to join the vices in song leads to a moral dilemma when the song becomes scatological (338). The choice to sing with the vices is a voluntary and performative act; it turns the audience into active players within the ludic world of the game. At the same time, the decision to sing aligns audience members, both literally and figuratively, with vice. Even if members of the audience *choose not to sing*, they perform a socially significant role, the conscientious objector or spoil sport.

After the singing tactics of the comic trio fail to persuade Mankind, they decide to enlist the help of another player: Satan's minion, Titivillus; however, before Titivillus can arrive—and the playing can continue—the trio must start a collection for his appeasement. Now the audience faces another moral predicament: can they hold out against their desire to see the impressive spectacle that is Titivillus? Put another way, what ought they to do, withhold payment like spoilsports and so put the kibosh on the game, or join in the fun of scatological singing and pay a tribute to a devil? Both choices require performative actions and both entail performative transgressions that blur the distinction between real and imagined immorality.[34]

[34] The performative nature of *Mankind* raises the question of whether performing sin is moral. While I suspect the players themselves would make a clear distinction between "real" and performed immorality, it is also apparent that anti-playing religious authorities considered the playing of sin iniquitous rather than edifying, as described in the *Tretise of Miraclis Pleyinge*.

The issue here is not simply that *Mankind* is participatory and metatheatrical. More important is that fact that playing the *Mankind* ludus functions as a type of practical performance of sin and redemption.[35] Indeed, the playing of *Mankind* was likely compelling in large part because it was a practical performance, a fire drill for the sinner's soul. Audiences and players alike are forced to identify with and perform practices which defined and were attuned to medieval moral consciousness.

Along with Sarah Beckwith, I believe *Mankind* was beneficial to medieval people because it trained them to become moral individuals.[36] Drawing on Aristotle's Nicomachean Ethics, Beckwith argues that modern readers misunderstand moral virtue in plays like *Mankind* because they often consider morality a matter of personal agency rather than role habituation (107). The mistake, according to Beckwith, results from the fact that "the eighteenth century coined the term 'morality play' to define dramatized moral allegories, and in so doing modeled a terminology of self-hood and moral agency precisely against the accretions of habit and tradition" (108). Playing *Mankind* is not just about decision-making or virtue in an abstract sense; it is a technique for actively practicing the actions and perspectives which form virtuous habits and deter immoral ones. *Mankind* does not merely point out right from wrong; it is an embodied practice, where the audience and players *become* virtuous and sinful. This is the essence of a theater of becoming.

Similar to the way that *The Game and Playe of the Chesse* articulates and performs a cultural model of political order, playing *Mankind* articulates and performs a cultural model of religious morality. Whether we call them plays, games,

[35] Laura Kendrick describes the participatory forms of play in *Mankind* in detail. See "'In bourde and in pleye': Mankind and the problem of comic derision in medieval English religious plays" (2005).
[36] See Beckwith's "Language Goes on Holiday: English Allegorical Drama and the Virtue Tradition."

or ludi, both chess and *Mankind* persuade players about the material nature of the "real" world. In this sense, chess and Mankind were not merely mimetic reflections of a "real world" out there. They were also instructive (and constructive) models of performative practice which oriented and prescribed the skills necessary to operate in medieval times. Both forms of play minimize mimetic realism in order to "pierce the veil" of material uncertainty, to allow players to know, to embody, to perform, and to impose social order. To echo Sponsler again, the virtuous subject is one for whom the virtuous subject position has been naturalized to the point that the difference between virtuous and sinful action can appear "innate, customary, and unquestionable" (*Drama and Resistance* 5). Of course, it is important not to lose sight of the fact that while the rules of play may naturalize one social order, they are also open to negotiation and emendation. Not everyone plays by the rules.

When *Mankind* is played successfully, it enables players to "pierce the veil" of material appearances, to separate inner truth from outward facade. Good *Mankind* players and audiences come to recognize the corruption of vices through embodied action. This is why Mankind describes his ultimate sin as a matter of worldly misperception:[37]

> Ah, it sweameth my heart to think how unwisely I have wrought!
> Titivillus, that goeth invisible, hung his net before my eye,
> And, by his fantastical visions seditiously sought,
> To Newguise, Nowadays, Nought caused me to obey. (874-77)

[37] Mankind is guilty of ignoring the common medieval trope of *contemptus mundi*, a contempt for the allure of the material world.

What Mankind calls “fantastical visions,” Mercy then refers to as delusion, “Mankind, ye were oblivious of my doctrine monitory; / I said before, Titivillus would assay you a brunt. / Beware, fro henceforth, of his fables delusory!” (878-80). The practicality of *Mankind* comes from its ability to teach players how to determine what is and is not moral, to reject worldly desires and bodily temptation as false and illusory (896). It is only with the acceptance/presence of Mercy (and the rejection/absence of the three vices) that Mankind is able to understand his actions as either sinful or virtuous.

Mercy’s final speech to the audience warns them, “Think and remember the world is but a vanity, / As it is proved daily, by diverse transmutation” (908-909). The worldly, the sensual, the fleshly, and the material are ever-changing distractions, illusions which hide an incorporeal truth within. Virtue comes from one’s ability to shun pleasure for the sake of goodness. It is a habit and deployment of the body as much as a conscious choice of the mind.

Of course, not all ludi were morally-inflected or metatheatrical like *Mankind*. The cycle plays, for example, had another practical end: prescribing the divine order of the universe. The scope and nature of these plays has no modern equivalent. Played for over two centuries, they told the entire Biblical history of the universe in a single day. The “Ordo Paginarium” of the York Cycle lists 47 separate plays—although it seems likely not all were played every year. The first play began at 4:30 a.m. and the last play would have ended late into the night (with commerce, revelry, and other attractions vying for attention). Plays were assigned to specific guilds: the shipwrights played the building of Noah’s Ark and the mariners played the story of the flood. By

dividing accountability for the plays according to different trades, the whole production was divvied up into manageable parts.

The cycles are ostensibly a long series of Bible stories enacted in short vignettes. Participatory by nature, they featured an incredibly large number of players (sometimes in the hundreds). These players were craftsmen, familiar members of the local community, not commercial actors. The Chester post-Reformation banns warned spectators about the quality of the playing, "By craftesmen and mean men these pagents are played" (204). While the plays were certainly watched by large audiences, it is likely that players made up a substantial portion of that audience. This is important because the player-perspective likely formed a large part of the cycle experience. From the perspective of locals, the plays might have resembled something closer to a series of familiar games to be played year after year (rather than narratives performed by outside professionals).

Of course, the cycles did not tell just *any* story; they told *the* story of mankind from God's book. As the third vexillator of the N-Town banns proclaims: "This game wel pleyd in good aray. / Of Holy Wrytte this game shal bene / And of no fablys be no way" (519-21). The cycles described God's divine plan and they explained the nature of the medieval world: good and evil, sin and redemption, the creation of mankind, and its final destruction at the end time. Dozens of individual ludi were presented sequentially to describe and model the prevailing cosmic order not just of human history but of existence itself. Thus, cycle plays did not merely speak to human experience but actively affirmed a universal nature. More than historical re-enactments, the cycles demonstrated the temporal and eschatological process of

Christian reality, setting down the teleology of God's master plan for the natural world. Like *Mankind*, the plays did not just *speak to* human history and experience; they sought to *organize*, *define*, and *model* its processes.

Cycles and morality plays performed divine order, but ludi at the beginning of the 16th century also began to tackle secular issues. The earliest of these may be Henry Medwall's *Fulgens and Lucres* (~1497). As an interlude, *Fulgens and Lucres* would have been performed in a nobleman's home and functioned as a social entertainment. Even as a form of entertainment, however, the ludus had a social and practical purpose: settling a medieval debate about the nature of nobility. Is nobility achieved through virtuous action or is it ascribed by noble birth? In other words, how does one be (or not be) noble?

The interlude remains fascinating because it is situated between medieval and modern drama, not just in regard to its performance date (~1497) but in its methodology. On one level, the ludus is, as I said above, a performative example of what it means to be, and not be, noble. Situated within the medieval theater of becoming, it seeks to pierce the veil, to reveal nobility through embodied performance. The play uses metatheatrical framing to create a reflective distance, to dull the illusion of mimesis. For many viewers, the play appears postmodern, but this is only because it remains so distinctly *not modern*: playfully metatheatrical, character-driven, methectic, and didactic.[38]

On the other hand, *Fulgens and Lucres* is remarkably akin to modern drama. At times, it is arguably narrative-driven, mimetic, and purposely anti-didactic. The

[38] Rick Bowers often compares *Fulgens and Lucres* with the work of Luigi Pirandello.

play resists categorization as medieval or modern, playful game or theatrical performance. It accomplishes this paradox by staging a play within a play (and occasionally a play within a play within a play). The inner play is narrative-driven but also poses a didactic truth about nobility; The outer play is play metatheatrical yet undermines the inner play's didacticism. The stars of the outer play function as audience interlocutors, messing with the script and causing havoc. The audience itself gets to talk back to the play, to intervene (and even change) the execution of its process. Here we have a compelling balance between the medieval ludus and modern drama, the theater of becoming (methexis) and the theater of fiction (mimesis). The experience is a skillful balance between both types of play, effortlessly crossing between drama and game.

Fulgens and Lucres is playful from the outset. The action begins with a highly metatheatrical discussion between two household servants who have been planted in the audience. The text refers to them simply as "A" and "B." Servant B informs servant A that there will be a "play." Excited by the prospect, servant A asks if servant B will be one of the players. He responds:

B: Nay, I am none.
In trowe thou spekyst derision
To lyke me therto.
A: Nay, I mok not, wot ye well,
For I thought verely by your apparell
That ye had bene a player. (45-50)

While the meter and rhyming lines of the speech would have made it obvious that the servants were playing, Servant B humorously takes offense at being called a player. Thus, the ludus begins with two of the household's servants playing themselves waiting for a "play" to begin—all the while insisting that they are not players. As they wait, servant B reveals to servant A the play's narrative, which he suggestively calls a "processe" (63).[39] As I will show, this metatheatrical frame created by the servants in *Fulgens and Lucres* furnishes a type of critical distance for the audience to engage the debate on nobility.

Servant B's description of the play's "processe" begins by describing how a Roman senator, Fulgens, desires to marry off his daughter Lucres. There are two viable suitors, Cornelius and Gayus, and the difference between them lies at the heart of the interlude's debate.[40] Cornelius is noble by birth; Gayus is noble by virtue (or action) only. In servant B's summary of the play, personal virtue triumphs when Gayus is chosen by the Roman senate to wed Lucres. (This is not what actually transpires.) But when servant A learns of the play's process, he objects:

A: And shall this be the proces of the play?

B: Ye[a], so I understonde be credible informacyon.

A: By my fayth, but yf it be evyn as ye say,

I wyll advyse them to change that conclusion.

What? Wyll they afferme that a chorles son

Sholde be more noble than a gentilman born?

[39] The words "process" and "procession" were commonly used to refer to ludi. Examples can be found in *The Digby Plays*, Croxton's *Play of the Sacrament*, and *Processus Talentorum* in the Towneley manuscript.

[40] Servant B calls the debate "the chefe foundacyon / Of all thys proces both all and some" (1489-1490).

Nay, beware, for men wyll have thereof grete scorn:

It may not be spoken in no maner of case. (126-32)

Servant B's objection marks the beginning of strife between the ludus's outer and inner worlds.[41] In the outer world (or frame), servants A and B argue vociferously and metatheatrically whether what is happening within the inner world's Roman context provides a good example for the audience at hand (153). As servant B describes it, the servants debate whether the final judgement will "stond with treuth and reason" (159). In other words, the metatheatrical argument between servants A and B concerns whether the main characters are or are not noble. Thus, while the inner play of *Fulgens and Lucres* is ostensibly a secular, narrative-driven play, its social purpose is comfortably situated within the medieval theater of becoming. The confrontation between Cornelius and Gayus is not merely a story (or history); it is also a performative and procedural argument centered on what it means to be noble.

The inner play world opens up to the audience (including the servants) precisely at the moment Fulgens is looking for a suitor for Lucres. Cornelius, a noble-born yet reprehensible patrician, openly pleads to the audience for help winning her hand. Seeing an opportunity to influence the play's disagreeable process, servant B reconsiders his role as an audience member and decides (much to the dismay of servant A) that he does after all want to play:

B: Now have I spied a mete office for me,

For I wyl be of counsel and I may

With yonder man.

[41] We may add to these two worlds the strife in one more, if we consider those among the play's predominantly noble audience who both participate in the ludus and influence the characters' actions.

A: Pece, let be!

Be God, thou wyll destroy all the play!

B: 'Distroy the play', quod a? Nay, Nay,

The play began never till now! (360-65)

Thus servant B decides to enter the ancient Roman world of the interlude as if he were entering a pick-up game of basketball.[42] He comes to the defense of Cornelius—and hence the preeminent value of noble birth—in an attempt to overturn the model of nobility suggested by the story's expected outcome. For servant B, the play only begins when he has the opportunity to disrupt it. It would seem that the fourth wall is no match for the theater of becoming. If you don't like the way the game is played, why not play yourself? For Servant B, the play only begins when he has the opportunity to enter it. A few lines later, servant A is also drawn into the game, taking up the cause of Gayus (and virtue by action).

The serious debate on nobility is mirrored by one of the first comic subplots in English drama.[43] The noble love triangle between Cornelius, Gayus, and Lucres is mirrored by a comically ignoble love triangle between Servant A, Servant B, and Lucres's servant, Joan. In order to win Joan's hand, the servants engage in a series of games. (Considering the frame, they are playing a game within a game within a game.) First, they face off in a singing contest. Second, they wrestle. And last, they

[42] Early modern drama scholars might see in this entrance a similarity to the playful moment of Rafe's entrance into the "inner play world" of *The Knight of the Burning Pestle*. While this later moment in the commercial early modern drama is certainly ludic (and to this we could add the initial metadrama of *Bartholomew Faire* and a number of other plays), there are some notable differences. The metadrama of the servants in *Fulgens and Lucres* is continual, to the extent that critics like Rick Bowers point to the frame as more substantive than the inner play. It is also meditative, in that it functions as a form of critique on the inner play's performance of nobility.

[43] For an even earlier comic subplot, see *The Second Shepherd's Play*.

engage in a lewd jousting game called "fart pryke in cule."[44] Each of the servants' games is a burlesque of chivalry, an inversion of the noble competition between Gayus and Cornelius. The servants' comic games create an opportunity for slapstick humor and improvisation, but they are also a form of procedural rhetoric, demonstrating clearly what nobility is not. In the end, Joan picks neither and, after spanking them soundly, leaves them bound in ropes, embarrassingly helpless.

At the end of the first act, the servants lock horns over whose master should be the victor. Servant B remains resolutely in favor of Cornelius while Servant A stands by Gayus:

B: And I am sure Cornelyus is able
With his owne goodis to bye a rable
Of suche as Gayus is!
And over that, yf noblenes of kynn
May this womans favour wynn,
I am sure he can not mys.
A: Ye[a], but come hether sone to the ynde of this playe
And thou shalt se wherto all that wyll wey;
It shall be for thy lernynge. (1378-86)

[44] See Peter Meredith and Meg Twycross's helpful description of the game in "'Farte Pryke in Cule' and Cockfighting" *Medieval English Theatre* 6.1 (1984): 30-9 and Rick Bowers's comparison of the game to "aristocratic jousting" in "How to get from A to B: *Fulgens and Lucres*, Histrionic Power, and the Invention of the English Comic Duo" *Early Theatre* 14.1 (2011): 45-59.

Servant A's response is interesting because it lays open the question of whether the play's intended outcome will indeed come to pass. As it turns out, Gayus is still victorious but not quite in the way that servant B foretold.

Servant A's "It shall be for thy lernynge," is a type of antagonistic taunt directed at servant B, akin to the trash talk colloquialism "You're gonna get schooled." In this way, the ludic metacommentary of servants A and B stimulates a critical debate (one which seems likely to have spread to the audience's dinner conversation during the intermission).[45] The tension of *Fulgens and Lucres* is rooted in the fact that the intervention of the players may change not just what *might happen* but *what should happen*. The audience is made to feel a sense of agency, and hence responsibility, through the players which represent them. Like sports fans, they are compelled to back a favorite player, relishing his success and grimacing at his foibles.

After the intermission, the process of the inner play continues (but not before yet another metatheatrical debate between the servants at 1545-1560). Then, Cornelius and Gayus appear before Lucres to make their best cases. Cornelius lays out his case (or process as he calls it) for nobility. Gayus then rebuts the process laid out by Cornelius. Framing nobility-as-action, Gayus affirms that Cornelius's ancestors were noble but that Cornelius has none of their qualities or accomplishments. Lucres chooses Gayus and so the issue of whether nobility depends on either birth or virtue is answered decidedly in favor of virtue. If *Fulgens and Lucres* was merely didactic, it would end here with the triumph of virtue over lineage.

[45] The intermission gives the guests time to eat dinner and, as servant A suggests, the Romans time to decide how best to present their case. The word "partyes" at line 1400 is ambiguous, but it may be inviting the audience to confer and advise Gayus and Cornelius before they present their arguments: "That the partyes may / In the meane tyme advyse them well."

On further inspection, however, we can see that Lucres's decision is openly questioned and that the play's final lines undermine any sense of the issue having been firmly resolved.

In what Kent Cartwright calls the "open-endedness" of the interlude, a large number of factors undermine the certainty of Lucres's decision.[46] The contingency of the conclusion derives in part from the bumbling intervention of the servants:

> The conclusion of this play has devolved from a senatorial proclamation, to a public pronouncement, to a written private communication, to an oral message given to a servant who garbles what he hears and who refuses to deliver it anyway: how can the content of this message not disappear as the integrity of its delivery collapses? (46)

As Cartwright observes, the servants actively work against the narrative's "presumed inevitability and preordained closure." The effect is one of rhetorical dissonance, where the didactic certainty of the Roman story is openly questioned.

The outcome is further put into question by its differences from both its source, John Tiptoft's English translation (1481) of Buonaccorso de Montemagno's *De Vera Nobilitate* (1438), and servant B's pre-game description of the plot. In both versions, the senate arbitrates the final decision.[47] In Medwall's version, however, the weight of the decision lies solely with Lucres and she makes her decision in the absence of her father, whose opinion she sought earlier (458, 556).

Moreover, Lucres undermines her own decision even before she hears the arguments of Gayus and Cornelius. She cautiously reminds the audience that the issue

[46] See "Dramatic Theory and Lucres' 'Discretion': The Plays of Henry Medwall."

[47] In Tiptoft, both the Roman senate and Fulgens oversee the debate but there is no decision. This difference suggests that servants A and B have measurably affected the plot of the play.

of nobility should really be decided by “a philosopher or ellis a devyne” (1853). She deprecates her decision as “myne opinion” (1856) and, perhaps because she fears that she will offend the noble audience, she carefully notes that her choice should not be considered a “generall precedent”:

> That what so ever sentence I gyve betwyxt you two
> After myne owne fantasie, it shall not extende
> To ony other person. I wyll that it be so,
> For why no man ellis hath theryn ado.
> It may not be notyde for a generall precedent,
> All be it that for your partis ye do therto assent. (1857-63)

When Lucres does choose Gayus, it is servant B who comes to the defense of noble birth. He is clearly shocked that “a gentylwoman did opynly say / That by a chorles son she wolde set more / Than she wolde do by a gentylman bore” (2200-02). Servant B’s rejection of Lucres’s decision leads to a debate between him and Lucres which extends another 250 lines.

Even after Lucres has exited the “stage,” the debate continues. Servant A returns to inquire “how goth the game?” (2261). He is shocked to hear the outcome, turning to audience directly to ask whether or not they think Lucres chose correctly:

> **A:** [To the audience]
> How say ye, gode women? Is it your gyse
> To chose all your husbondis that wyse?
> By my trought, than I marvaile! (2278-80)

Instead of neatly tying up the narrative's loose ends, the servants' closing sentiments only confirm Cartwright's claim about the play's open-endedness. Indeed, the end of the play seems abrupt, surprising even the servants themselves:

> **A:** Why than, is the play all do?
>
> **B:**Ye[a], by my feyth, and we were ons go
>
> It were do streght wey.
>
> **A:** And I wolde have thought in vere dede
>
> That this matter sholde have procede
>
> To som other conclusion (2305-10)

While servant A is surprised the play is over, servant B is also surprised by its conclusion (despite describing a very similar conclusion to A at the beginning of the play). Servant A expresses dismay and is surprised that the ludus did not "procede" to some other conclusion. If that were not enough, the play's lack of finality is also underscored by an authorial retraction reminiscent of Chaucer's retraction in *The Canterbury Tales*. In the final lines, Servant B pleads that the audience not take offense but consider how the play might be properly amended:

> Yet the auctour therof desyrith
>
> That for this season
>
> At the lest ye will take it in pacience.
>
> And, yf ther be ony offence
>
> (Show us wherein or we go hence)
>
> Done in the same,
>
> It is only for lack of connynge,

And not he but his wit runnynge,

Is thereof to blame

And glade wolde he (the author) be and right fayne

That some man of stabyll brayne

Wolde take on hym the labour and payne

This mater to amende;

And so he wyllyd me for to say.

And that done, of all this play

Shortely here we make an end. (2345-51)

For all that Lucres renders a decisive judgment, its value is anything but certain. As Cartwright notes, either the play is "anti-didactic" or its didacticism is "forced and unreal" (39).

Compared with the lively antics of the servants, the Roman Gayus and Cornelius are uninspiring. (Cartwright calls Gayus a "cardboard hero"). The play is called *Fulgens and Lucres* yet, as Rick Bowers has noted, the real stars are Servants A and B. Like the film critics of *Mystery Science Theater 3000*, they refuse to be a captive audience in the face of stale material. Servants A and B reject the process of the play and, by extension, its argument on nobility. The interlude then functions not just as a commentary on nobility but as a statement about the truth-value of dramatic play. In Cartwright's words, " The closing asks the question as a matter of real-world truth, and the servants and audience draw the inescapable conclusion: Cornelius, Gayus, the honour-debate, Lucres' apologia—all unrealistic and ridiculous" (49). In the end, the play openly questions the ability of drama to "pierce the veil" of outward

appearance, to reveal timeless truth. “Consequently, A and B never presume to compete for timeless moral truth. Instead, they compete actively for immediate and momentary dramatic truth” (Bowers 51). The result is a deflationary play, one that is bitingly humourous and occasionally ponderous, yet lacks a sense of closure or purpose. The Roman world exists only to be deconstructed; its carefully constructed devices implode under the lightest scrutiny from a pair of bumbling servants.

Fulgens and Lucres resists easy categorization. It is a reminder that playing was a diverse activity that balanced game with drama, methexis with mimesis. We can say that much medieval theater tended toward a theater of becoming but it is also true that medieval ludi had the capacity for fiction and narrative. Similarly, we can say that modern theater leans in the direction of a theater of fiction-making even as we acknowledge the persistence of plays that contain metatheatrical and performative elements. Indeed, these differences may tell us less about the plays themselves than the way audiences were expected to relate to them. Each type of play has its own processes, not just for the main players but also the audiences. *Mankind* and Marlowe are related yet different games, and each offers a different kind of gratification.

From medieval ludi to modern drama, the connecting thread is play. Play is related to performance and performativity, areas which drama studies has considered in great detail. The work of performance theorists like J. L. Austin, Judith Butler, and Eve Kosofsky Sedgwick has focused on language, scrutinizing performative language and semiotics. This work is of great value for theorizing drama but less pertinent for studying games. What does performativity tell us about Tetris? Play studies must grapple with the phenomenology of objects, describing player interactions. This is an

area where gaming theory is breaking considerable ground, yet that work exists in disciplinary isolation. In what follows, I consider how a more medieval perspective on the material world is helpful for connecting drama and game studies under the rubric of play studies.

Play Studies and Object-Oriented Ontology

In the first part of this chapter, I argued that the study of medieval drama faces a terminology problem because medieval people treated "plays" as a type of ludus (or game). In the late Middle Ages, there was no generally-accepted distinction between dramatic and non-dramatic ludi, and such a distinction, when it is made today, is mostly for the benefit of theater history. I have left open, however, the larger philosophical question of how the modern concept of game relates to its medieval precursor. The final section of this chapter takes up that challenge, addressing the ludic gap between medieval and modern games in philosophical and speculative terms. The goal is to consider how games can be said to constitute a similar type of activity across historical periods. While this section does use examples from medieval and modern games, I am less interested in analyzing particular games than considering why the concept of game in the Middle Ages differs from our usage today and whether it might be possible to conceive of something like "play studies" or "play history."

Game, whether in the modern or medieval sense, is notoriously difficult to define. Johan Huizinga, who published in medieval studies and game studies, was perhaps the most successful in capturing the term in both senses, but most recent scholarship has been content only to capture the modern perspective.[48] Even in 20th and 21st-century terms, however, the concept of a game remains foggy because it encompasses such a large variety of activities. The argument over exactly how to

[48] In medieval studies, Huizinga is known for *The Autumn of the Middle Ages* (1924). Game scholars often recognize *Homo Ludens* (1938) as one of the field's foundational works.

define modern games has been a hot button issue in game studies in recent decades. The disagreement took center stage in an academic turf war known as "Narratology vs. Ludology," which hinged on whether games should be defined by their narratives (Narratology) or rulesets (Ludology).[49] In part, the debate grew out of a desire on the part of game scholars to develop a critical language for the study of games that was not indebted to literary or cultural studies. Ludologists were concerned that literary study is founded on linguistic and narrative discourse. They argued that a game like Tetris, however, has little linguistic content and no clear narrative. Tetris is *approachable as* but decidedly *different from* and *more than* a narrative. Concerned that the action of the player should be central to the study of games, ludologists argued for a more phenomenological approach.

At times, the arguments of more radical ludologists verged on an essentialism that threatened, in the words of textual critic and game scholar Steven Jones, to:

> recapitulate the history of twentieth-century *literary* formalism, with the "game itself" replacing New Critics' "text in itself" as the hermetically sealed object of attention, rules and procedures replacing tropes and symbols as the features to be analyzed in isolation of authorial, historical, or cultural factors. (5)

Game scholars, many of whom were trained as literary scholars, found themselves in a familiar dance between form, on the front-step, and history, on the back. By now, the Narratology vs. Ludology debates have mostly fizzled; each side has conceded

[49] For a summary of the Narratology vs. Ludology debates, see the introduction to Steven Jones's *The Meaning of Video Games: Gaming and Textual Strategies* and Ian Bogost's blog post from his 2009 DiGRA keynote "Videogames are a Mess." For the actual debate, see Gonzalo Frasca's "Ludology Meets Narratology" and critical commentaries from Janet Murray, Espen Aarseth, and Marku Eskelinen.

that games can be understood in terms of narratives or rules. Yet the debate resurfaces from time-to-time, a familiar reminder that games are complex and multifaceted activities which extend beyond any single disciplinary toolset.

Game studies has faced an uphill battle in defining games partly because the development of a unique discourse for analyzing the nuts and bolts of games has been uneven. While the formal description of video games has become more nuanced, that discourse often fails to translate to other types of games. In a field like literary studies, there are common tools which may be deployed across generic boundaries (e.g. the formal discourses handed down by Russian Formalism and American New Criticism). Video game criticism, however, has become isolated from most other types of game criticism. Nor has game studies embraced the type of political criticism that informs mainstream cultural studies (perhaps because they fear that variations of Marxism or feminism or postcolonialism brought to bear on ludology can only prove reductive). There's no doubt that games are relevant to the social problems these approaches address, but it is also true that cultural studies approaches tend to predetermine the significant properties of their objects of study or to subordinate them to political discourse. We could read Tetris as a postcolonial encounter with the Other but such a reading inevitably reduces the game's complex historical significance.

The discursive temptation of cultural analysis (including New Historicism) is to study objects, whether "texts" or games, as telling cultural anecdotes, artifacts of over-determined discourses, symptoms of ideological friction. But this risks effacing the formal and material properties of objects. Yes, there is a distinction between the history of Tetris as a material game and the relevance of Tetris to political history,

and yes, these perspectives are not incompatible (nor wholly separable); however, the first tends to be mindful of the history of the formal and material properties of Tetris-as-game while the second is mindful of Tetris to the extent which it is relevant to political history.

A central problem for establishing game history then is that, in the words of object-oriented philosopher Graham Harman historicism threatens to "overmine" historical relevance, while a formalist approach threatens to "undermine" it. Each way of thinking is reductionist:

> Just as humans do not dissolve into their parents or children but rather have a certain autonomy from both, so too a rock is neither downwardly reducible to quarks and electrons nor upwardly reducible to its role in stoning the Interior Ministry. The rock has rock properties not found in its tiny inner components, and also has rock properties not exhausted by its uses. The rock is not affected when a few of its protons are destroyed by cosmic rays, and by the same token it is never exhaustively deployed in its current use or in all possible uses. The rock does not exist because it can be used, but can be used because it exists. ("Well-Wrought Broken Hammer" 199)

Objects, including games, always exceed our ability to describe and use them. We are all fated to be reductionists. We can understand objects in various discursive registers but we never grasp them fully. Ian Bogost demonstrates this in *Alien Phenomenology* (2012), where he uses a protracted "Latour litany" to describe the multitudinous identity of the 1980s Atari video game flop *E.T.*:[50]

[50] Latour litanies, named after Bruno Latour, are a familiar trope in object-oriented ontology, wherein long lists expose the strangeness of objects through the defamiliarizing proximity of their elements.

E.T. is 8 kilobytes of 6502 opcodes and operands, which can be viewed by human beings as a hex dump of the ROM. Each value corresponds with a processor operation, some of which also take operands. For example, hex $69 is the opcode for adding a value.

An assembled ROM is really just a reformatted version of the game's assembly code, and *E.T.* is also its source code, a series of human-legible (or slightly more human legible, anyway) mnemonics for the machine opcodes that run the game. For example, the source code uses the mnemonic "ADC" in place of the hex value $69.

E.T. is a flow of RF modulations that result from user input and program flow altering the data in memory-mapped registers on a custom graphics and sound chip called the television interface adapter (TIA). The TIA transforms data into radio frequencies, which it sends to the television's cathode ray tube and speakers.

E.T. is a consumer good, a product packaged in a box and sold at retail with a printed manual and packing cardboard, hung on a hook or placed on a shelf.

E.T. is a system of rules or mechanics that produce a certain experience, one that corresponds loosely to a story about a fictional alien botanist stranded on earth, whom a group of children attempt to protect from the xenophobic curiosity of governmental and scientific violence.

E.T. is an interactive experience players can partake of individually or together when gathered around the television.

E.T. is a unit of intellectual property that can be owned, protected, licensed, sold, and violated.

E.T. is a collectible, an out of print or "scarce" object that can be bartered or displayed.

E.T. is a sign that depicts the circumstances surrounding the videogame crash of 1983, a market collapse partly blamed on low-quality shovel-ware (of which E.T. is often cited as a primary example). In this sense, the sign "E.T." is not just a fictional alien botanist but a notion of extreme failure, of "the worst game of all time": the famed dump of games in the Alamogordo landfill, the complex culture of greed and design constraint that led to it, the oversimplified scapegoating process that ensued thereafter—otherwise put, "E.T." is Atari's "Waterloo." (17-18)

Readers of Bogost's exhausting (yet not exhaustive) list are rhetorically tired into submission. His point, an example of Latour's concept of irreduction, is that objects, including games like *E.T.*, are complex and irreducible.[51] No matter the discourse we use to describe objects, aspect of their identities elude us. This is the essence of a new philosophical movement, variously called object-oriented ontology or speculative realism. And according to Harman, the speculative realist movement derives from medieval ways of thinking (199). It shares with medieval thinking a sense of humility about the extents of human understanding. Following Aristotle, late medieval Christians often distinguished sensible knowledge from intellectual knowledge. Sensible knowledge came from the senses, but the truth of what a thing was could

[51] For more on "irreduction," see Latour's *The Pasteurization of France*.

only come from intelligible knowledge. In the *Summa Theologiae*, Aquinas describes the difference:

> [perception] is concerned with external sensible qualities, whereas intellective knowledge penetrates into the very essence of a thing, because the object of the intellect is "what a thing is" … Now there are many kinds of things that are hidden within, to find which human knowledge has to penetrate within so to speak. Thus, under the accidents lies hidden the nature of the substantial reality, under words lies hidden their meaning; under likenesses and figures the truth they denote lies hidden (because the intelligible world is enclosed within as compared with the sensible world, which is perceived externally), and effects lie hidden in their causes, and vice versa.[52]

In Aquinas's view, objects cannot be described by their outward appearances. The truth of objects is not a visible or sensible quality.

We can also see this perspective in the play *Mankind*. Mercy warns Mankind that his errors were a matter of worldly misperception, "Think and remember the world is but a vanity, / As it is proved daily, by diverse transmutation" (908-909). Mercy warns us not to overstep our bounds as fallible beings. For humans, the world of objects is never stable, but always changing. Objects are sensual and alluring, yet we never have full access to them. We can never fully grasp what they are (or what they are doing). This speculative aspect of medieval texts has garnered much critical

[52] See part 2 of part 2, Question 8, article 1.

attention in recent years from medieval scholars like Jeffrey Jerome Cohen, Kellie Robertson, Jonathan Gil Harris, and Karl Steel.[53]

This object indeterminacy is important for theater and game studies because it is necessary for play. At a basic phenomenological level, play requires the re-conceptualization of ordinary objects into extraordinary ones.[54] The player becomes a new thing: maybe a king or maybe a pitcher. The metal rod becomes a scepter or alternatively a bat. The key is that play always relies on a type of object transformation, a new, playful orientation. This is a fundamental axiom of play, from drama to games, medieval to modern periods, and it is as true of playing cards as it is of playing video games. Play is a special type of object-orientation.

If such a view does not have much currency in mainstream game studies, it may be because the realm of non-electronic games is currently under-theorized. As I mentioned before, game studies is dominated by the study of games from the 20th and 21st centuries—especially the video game. In language reminiscent of the disciplinary divide between medieval and modern drama, there remains a critical impasse between what ludologist Jesper Juul calls "classical games" and video games. Like the "old" in Old Testament or the "medieval" in "medieval drama," the word "classical" here suggests that non-electronic games are a remnant of the past, an evolutionary stepping stone on the path to the glory of our current video game renaissance. One need only look to the titles of the most prominent game studies journals to see a decidedly

[53] For more on this, see the collection of essays *Animal, Vegetable, Mineral: Ethics and Objects* (2012) edited by Cohen and Robertson's "Medieval Materialism: A Manifesto" (2010).

[54] The word "object" here is used in the speculative realist sense of a flat ontology where, in the words of Bogost, "*all things equally exist, yet they do not exist equally*" (11). An object here could be a material thing like a controller, but it could also be a word, an idea, a dream, or a unicorn. See also Levi Bryant's *The Democracy of Objects* (2011).

digital bent: *ACM Computers in Entertainment*, *Entertainment Computing*, *Eludamos: Journal for Computer Game Culture*, *Loading…*, *Games and Culture: A Journal of Interactive Media*, and *Game Studies: The International Journal of Computer Game Research*. Current game scholarship does occasionally recognize "classical" non-electronic games (e.g. *The Journal of Board Game Studies*), but it does not often acknowledge the cultural persistence of popular sports in the age of the video game.[55] Just a few varieties of games get most scholarly air time. And while ludologists are heavily invested in the formal properties of modern video game genres, they are unlikely to study many of the historical ludi from which the field's own name derives.[56]

While most game scholars would recognize as games medieval activities like chess, cards, and sports, there is no evidence that they would add drama, music, dancing, and joke-telling to this list.[57] (It is clear, however, that medieval people *did* call these activities games.) Taking these games into account, however, would be disruptive to modern definitions of "game," since the modern notion of games is so closely intertwined both with commercial products and quantifiable outcomes. From

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[55] While a great deal is written on sports, the writing tends to be from the perspective of quantitative analysis (e.g. sociology, kinesiology, psychology, and sports medicine). It is rare, but not unheard of, to find cultural analysis of video games and sports in a single journal. More often, sports are used as casual examples in passing: "e.g. We can see this aspect of video games in a sport like football."

[56] For work on video game genres, see (from early to more recent) Mark J. P. Wolf *The Medium of the Video Game* (2002), Espen Aarseth, Solveig Marie Smedstad, and Lise Sunnanå's "A Multi-dimensional Typology of Games" (2003), Thomas H. Apperley's "Genre and Game Studies" (2006), Christian Elverdam and Espen Aarseth's "Game Classification and Game Design Construction Through Critical Analysis" (2007), Dominic Arsenault's "Video Game Genre, Evolution and Innovation" (2009), Jayne Isabel Gackenbach and Johnathan Bown's "Video Game Presence as a Function of Genre: A Preliminary Inquiry" (2011), David Clearwater's "What Defines Video Game Genre? Thinking about Genre Study after the Great Divide" (2011), and Colin Cremin's "The Formal Qualities of the Video Game: An Exploration of Super Mario Galaxy With Gilles Deleuze" (2012).

[57] The English word "joke" comes from the Latin "jocus" which referred to verbal games. It is also the origin for the French, Italian, and Spanish word for game (jeu, giuco, and juego respectively). See Wickham (3).

the modern perspective, it is easy to distill historical games into a few simple categories, as Jesper Juul does in *half-real*:

> While some writers have claimed that games are forever indefinable or ungraspable, a review of David Parlett's two books *The Oxford History of Board Games* (1999) and *The Penguin Encyclopedia of Card Games* (2000) indicates that all of the hundreds of games described fall within the *classic game model*. The vast majority of things called 'games' are found in the intersection of the six features of the game model. It is an intersection that can be traced historically for at least a few thousand years and through most human cultures. (52)

Yet for all the hundreds of games in Parlett's indispensable work, there is no section on drama, music, dancing, or joke-telling. The classical model is hard put to describe games from 400 years ago, let alone a few thousand. The games now considered "medieval drama" are just one case in point.

The classical model cannot account for games in late-medieval England because the word "game" had a much larger scope than is usually recognized. The modern perspective on games is colored by an understanding of games as commercial products, a view that became dominant only in the 19th century. In the heyday of American capitalism, companies like Milton Bradley and Parker Brothers designed products called "games" that could be built, bought, and sold. In the Middle Ages, however, games *were not* commercial things one could buy in a store; instead, games were imaginative activities practiced through playful relationships with common

objects. These games were what David Parlett calls “traditional games,” a distinction which separates them from industrially-produced “proprietary” games like Monopoly.

While modern games often require specially-designed equipment (boards, cartridges, etc.), early English games often relied on the re-imagining of familiar objects. Games were rarely considered things in and of themselves. Like the way a child re-purposes a rock to become a train or the ground to become lava, these games functioned by changing the *practical identities* of objects. The locutions that one finds in early English texts on games often refer to “games of” or “games at” something. Recall Cessolis’s *The Game and Playe of the Chesse*. The placement of the article “the” before the word “chesse” seems strange to our modern way of thinking about chess. To us, chess is the game one plays but the word “chess” in this case actually refers to the chess pieces—not to the game “itself.” Thus, the title in modern English might be closer to “The Game of the Chessmen.” The distinction is made clear in chapter four, when Cessolis describes the movement of the pieces as follows:

> There ben thirty-two on that one side and thirty-two on that other side, whiche ben ordeygned for the beaulté of the playe and for to shewe the maner and drawyng of the chesse, as hit shal appere in the chappytres folowyng. (22-24)

The chess pieces are also referred to simply as “chesse” in Cessolis’s description of the setting of the board, “And whan the chesse ben sette, as wel the nobles as the comyn peple first in theyr propre places, the rookes by theyr propre vertu have no waye to yssue but yf hit be maad to them by the nobles or comyn peple” (313-16). A phrase like “playing at the chess” seems odd to us today because we do not usually

conceive of games as relations toward objects. We consider chess to be a game, rather than pieces for playing games.

While chess was somewhat standardized in the 15th century, it is worth considering that playing (with) chess in medieval England could involve any number of different boards, pieces, or rules. The *Libro de acedrex, dados e tablas* enumerates a variety of chess games, including four seasons chess (using four players), great chess (on a board with 144 squares with exotic animal pieces including giraffes, crocodiles, and lions), and chess games with a variety of dice. There were no standardized, mass-produced game pieces or equipment like we have today. This difference meant that games were defined less by the identical nature of their equipment than by the practices which defined how objects were to be used. In other words, the late-medieval concept of games was founded on practical relations *to* objects, not specific objects in and of themselves.[58]

Seeing games with medieval eyes, then, means adjusting our view of games as commercial, proprietary objects. Indeed, a non-proprietary game like baseball provides us with a more apt phenomenology of gaming. A game like baseball is not a thing that is designed or built. One cannot buy the game of "baseball" but only the equipment for playing it. Bats, bases, and balls are equipment for baseball, but they are not the game itself. From the traditional (non-commercial) perspective, a game does not reside within a specific object or set of objects; instead it entails the specialized use of play equipment. Hence games consist of equipment *and* their

[58] Widespread game standardization resulted from the large-scale industrial manufacture of game equipment which was *practically* identical (meaning not just similar in appearance but in use). This 18th-and 19th-century "advance" is of great importance to game studies history but, as far as I know, has escaped critical inquiry.

specialized use. We can use a baseball bat to fend off a home intruder but that does not mean we are playing the game of baseball. This leads to an important conclusion for the phenomenology of play: games are not the objects or equipment we use to play; rather they are practices which orient our actions toward equipment. One could then say that there is no such thing as a game without a player.[59] And while it does make sense to say that we use objects to play games, games are decidedly more than isolated objects or rules.

The medieval word "game," then, did not refer to specific objects or rules but rather to specific practices (or objective orientations). Whether or not a medieval activity was a game depended on a person's oriented practices toward objects—not on the objects in and of themselves. This practical distinction is epitomized by the medieval commonplace of doing something "in earnest or in game," a distinction which relies on *how* rather than *what*.

For medieval people, games were not objects which could be owned. They did have special equipment for playing games (e.g. dice, tables, and chess), but these objects were not sold "as games" in commercial packages with prescriptive instructions. Dice, cards, tables and chess were for play generally. This difference separates our modern view of games from its pre-capitalist, medieval precursor. We typically view games as commercial products, *things to be played*, whereas medieval men and women thought of games in terms of *the playability of things*. The operative question, then, was not "*What game* should we play" but "*how* can *this* be game."

[59] Juul took up this exact point in his keynote for the Philosophy of Computer Games conference (2008). The point is also raised in Sicart's "Against Proceduralism" (2012) as a response to the designer-oriented perspective of proceduralism.

Phrases like “be game” and “in game” show us that for medieval people games were not types of objects but oriented practice.[60] Games are made possible by the fact that objects are irreducible, in the same way that the Atari video game *E.T.* can be opcodes and operands, an assembled ROM, a flow of RF modulations, a consumer good, etc. *E.T.* has many ways of being and each of them is dependent on a separate kind of practical orientation.

My point here is not that medieval people played games in a different way (the phenomenology was exactly the same) but rather that the way they understood games has clear theoretical advantages for us, as players and as game theorists. Huizinga pointed to this theoretical advantage with the concepts of mimesis and methexis (*Homo Ludens* 15). Modern games are usually considered in mimetic terms, as fictions which *imitate* “reality.” Medieval games, however, were usually considered in methectic terms, as activities which *create* alternative realities/identities. Methexis then, might be thought of as a type of specification or *helping into being*. The stool is specified and becomes a wicket for a medieval game of stoolball. It does not become a fiction; rather, its practical identity and purpose have changed. In a similar fashion, a set of pixels (which look nothing like E.T.) on a screen become E.T. In both cases, objects become different through a change in our sociomaterial practices. Put simply: methexis attends to the practical identity of objects, mimesis to their referential fictionality.

These two perspectives, mimesis and methexis, form an observer-dependent ludic relativity. Whether one interprets an activity in mimetic or methectic terms

[60] The phrase “be game” is uncommon but does occur in Middle English. One prominent example is Chaucer’s “Anelida and Arcite:” “And then shal this, that now is mys, be game” (279). The phrase “in game” is much more common.

often depends on one's relation to the game. A spectator unfamiliar with chess might see the king piece in terms of a mimetic fiction, a representation of some "real" king. A knowledgeable player or spectator (familiar with the relevant play practices), however, tends to view the king in methectic terms, as a piece with specific practical affordances (e.g. castling). Neither perspective gets at something like the ultimate essence of the carved wooden object called a king but both are relevant to describing its practical identity for humans.

In drawing out the difference between mimesis and methexis, I do not want to suggest that medieval people were ignorant of, or ignored, mimesis. The problem, I believe, is ours, not theirs. Whether considering game studies or drama studies, we are far too comfortable with conceiving of play in terms of mimetic fiction and not comfortable enough with methectic becoming. This is a limiting factor in the history and phenomenology of play studies. Analyzing games through mimesis is useful for comparing their effects to other aspects of the "real" world, but the methectic perspective also helps us to get at the material and ethical implications within play, to go beyond a view of games as mere imaginative fictions. The methectic perspective reveals that objects, whether we work or play with them, are always real. This is a valuable insight and one that I will pursue to the edges of virtuality in chapter 2.

It is my hope that this chapter has brought drama and game studies into closer alignment under the rubric of play. The confluence of these two disciplines is already indebted to the scholarship of Lawrence Clopper, Laura Kendrick, and Tom Bishop. The consideration of medieval ludi in relation to game studies is sure to yield new

insights. Glending Olson's work on the ethics of medieval ludi and the role of ludi in recreation is one promising area that deserves further scrutiny.

Gaming theory approaches may also be relevant to other areas of medieval play. I am delighted to see the work of Elizabeth Upton, whose *Music and Performance in the Later Middle Ages* (2013) connects medieval music performance to the work of gaming theorist Eric Zimmerman. Work on medieval dancing might also benefit from game studies approaches. A popular medieval dancing game known as an egg dance featured dancers avoiding eggs and other obstacles to the playing of music.

Fig. 1 *The Egg Dance* (1552) Pieter Aertsen

Play studies is already a major area of study in some respects. In 2008, The Strong National Museum of Play launched *The American Journal of Play*, which investigates play from a variety of disciplinary perspectives. There is also a similar journal, *Play and Culture Studies*, created by The Association for the Study of Play

(TASP), which launched in 1998.[61] Both of these journals showcase interdisciplinary work on the study of play. However, they tend to be geared toward the fields of anthropology, sociology, and child-developmental psychology. The study of play has made fewer inroads in the humanities, especially game, drama, and history studies.

If this chapter has explored the phenomenological entailments of chess and, more particularly, medieval *ludi*, there remains a substantial amount of research ahead before we can describe the scope and capacities of other forms of play in the Middle Ages. For example, detailed histories of board games are now available, but the overall historical record of play is still replete with gaps and uncertainties.[62] Certainly, historians of play have yet to account for its interludic nature. If for literary scholars, a widespread awareness of intertextuality has led them to explore the ways texts shape each other's forms and meanings, then it is time for game scholars to attend to interludic activity. That the play of chess is both mathematical and social, whether the pieces are wood, marble, or pixels, suggests that our work will have to be every bit as interdisciplinary as are the chapters of this dissertation.

[61] The Association for the Study of Play was established in 1974. The were also two other journals which preceded the current one, *Play & Culture* and the *Journal of Play Theory & Research*.
[62] The work H. J. R. Murray and David Parlett is indispensable for game historians.

Objects of Play: Media and Methexis in the 20th Century

The last two decades have seen an explosion in games research. Since 1998, over a dozen game journals have been launched.[63] Game studies now has conferences, majors, blogs, and even research chairs. The field has its own debates, histories, and theory. The greatest area of growth has been in relation to the study of video games, one of the largest entertainment industries at the beginning of the 21st century.[64] Outside of video games, however, game studies is still restricted to a handful of journals and conferences. Clearly, something culturally exceptional about video games has ignited scholarly interest. They represent something new and altogether different from their predecessors.

And yet, video games remain games; hence they have a past, along with material, historical, and phenomenological connections to other types of games. If to date there has not been much consideration of video games in relation to their predecessors and contemporaries, this is in some measure changing--the academic exceptionalism of video games is becoming a things of the past. Just as the advent of computer writing forced bibliographers to reconsider the history of the book, the advent of computer gaming is forcing game historians to reconsider the larger history of play. This chapter wonders what a truly transhistorical and transmedial view of games might look like and attempts to account for video games within the larger

[63] These include: *International Journal for the Study of Board Games* (1998), *Game Studies: The International Journal of Computer Game Research* (2001), *ACM Computers in Entertainment* (2003), *Journal of Virtual Reality and Broadcasting* (2004), *Games and Culture: A Journal of Interactive Media* (2006), *eludamos* (2007), *Loading…* (2007), *International Journal of Computer Games Technology* (2007), *International Journal of Role-Playing* (2008), *Journal of Virtual Worlds Research* (2008), *Journal of Gaming and Virtual Worlds* (2009), *Entertainment Computing* (2009), and *The Computer Games Journal* (2012).

[64] According to the Entertainment Software Association, the U.S. games industry generated $30.4 billion in revenue in 2016 ("U.S. Video Game Industry").

scope of ludic history. What do all games have in common? Could there be a fundamental phenomenology of play?

Play is an incredibly diverse activity that includes sports, children's games, and boardgames. It also includes video games and, as I showed in the first chapter, activities like joke-telling, dancing, and acting. The problem with most play ontologies is they rarely cross between digital and "analog" realms, a division which has become entrenched in modern game studies. In this chapter, I attempt to bridge that gap, to account for digital games through a wider historical lens. The modern view of games may have trouble accounting for medieval play, but I believe the reverse is not necessarily true. To be sure, medievals have little to tell us about digital computation, yet their perspective on what makes a game a game is arguably more enlightened than ours: plus ça change, plus c'est la même chose.

This chapter draws on the nature of play in the 15th century to come to a better understanding of how video games fit within play history. The major phenomenological concepts of the previous chapter, namely *methexis* and *object orientation*, are developed and brought to bear in order to redress two of the major arguments for the historical exceptionality of video games as games:

1. Despite being called "virtual," video games are demonstrably real, material activities

2. Video games as games are not universally or essentially digital objects.

Only a truly transhistorical and transmedial phenomenology of gaming can correct for overly modern tendencies to frame games as fictions, products, or rules.

We can accomplish even more than this. We can adopt a new approach more closely aligned with the so-called "speculative turn" in the humanities. The chapter's coda urges humanities scholars, of which game studies is only a small yet growing part, to engage more closely with the materiality of the liberal arts and non-linguistic forms of knowledge making. What might the humanities gain by taking seriously Steven Ramsay's notion of "screwmeneutics" and Ian Bogost's concepts of "carpentry" and "ontography"? A widespread over-dependence on written discourse has obscured the importance of tactile, embodied, performative, and processual ways of knowing. In contrast, digital humanities practitioners have often insisted that the study of media objects cannot be reduced to linguistic discourse. What might we discover if we extend literary and historical analysis into the realm of auditory, visual, and interactive media?

Fig. 2 An example from the *Mapping the Republic of Letters* project showing Locke in blue and Voltaire in yellow. Only letters for which complete data information is available are shown.

Or consider the digital *Shakespeare Quartos Archive* that allows viewers to overlay a transparent version of a Hamlet quarto over second text, creating a virtual Hinman Collator. And while these examples are both from the digital humanities, this need not be the case.[65] Humanities scholars would do well to consider the methods of museum specialists, people who have a long history of exhibiting materials in novel ways to provoke conversation, discussion, and understanding.

[65] At the 2012 BABEL conference, Rob Wakeman and I chaired a panel on medieval brewing history that gathered history scholars alongside craft brewers. In addition to traditional academic presentations, the audience was able to handle and smell a variety of ingredients found in medieval brewing recipes. The panel culminated in an opportunity to try several ales based on medieval recipes from local breweries.

The Virtual Fallacy: How We Forgot that Software is Material

It has been over six decades since Isaac Asimov's *I, Robot* was published, yet the quest to make intelligent computers has been only partially successful. Computers have come to replace the intellectual work of some human thinkers, but the idea of a computer as an intelligent conversational partner is still the stuff of science fiction. Today we give the name "computer" to machines but that was not always the case. Going back to the 17th century, the term "computer" described a *person* whose job was to perform mathematical computation. This era of the human computer is mostly overlooked by historians but it constitutes the bulk of computer history.

In the early 20th century, the last generation of human computers labored, often in large teams, to solve lengthy mathematical problems. During World War II, human computer laboratories operated in Britain (at Bath, Wynton, Cambridge, and London) and the United States (at Washington, Hampton Roads, Aberdeen, Philadelphia, Providence, Princeton, Pasadena, Ames, Lynn, Los Alamos, Dahlgren, Chicago, Oak Ridge, and New York City).[66] These human computers were responsible for solving many of the most pressing issues of the war, including navigation routes, ballistic trajectories, and the forces behind the atomic bomb. The ranks of these human computers were filled by disenfranchised workers, including women, graduate students, minorities, and the handicapped. The state found these populations attractive for computer work because they were intelligent yet could be paid low wages. Despite these cost-saving measures, the budget of modern scientific research swelled along with the number of calculations necessary for research. The

[66] See David Alan Grier's *When Computers Were Human*.

cost of human computers led scientists to consider whether they could be replaced by machines.[67]

Even before the war, the British mathematician Alan Turing hypothesized the possibility of a machine that could do the work of a human computer.[68] He gave it the name "automatic machine." Today, it is known by his surname, the "Turing machine." Turing's machine is the theoretical archetype of the modern computer and the foundation of modern computer science. Moreover, the importance of the Turing machine for the humanities should not be underestimated—it was expressly conceived in the image of mankind (or rather, womankind, since computers at the time were predominantly women). Turing's vision of the mechanical computer relied on the assumption that such a machine could be like a mind.[69]

Turing makes this argument most cogently in "Intelligent Machinery" (1948). At first, he poses the possibility of a robot in the image of mankind:

> One way of setting about our task of building a 'thinking machine' would be to take a man as a whole and to try to replace all the parts of him by machinery. He could include television cameras, microphones, loudspeakers, wheels and 'handling servo-mechanisms' as well as some sort of 'electronic

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[67] The history of the computer here is unfortunately reductive in accordance with most computer histories, an account of the ideas of a small set of (white, male) geniuses. It is worth remembering, however, that the motivations for creating computers were not all benevolent. Histories of the computer often overlook the fact that they were invented to displace the work of some humans and to aid in the killing of others.

[68] See Turing's "On Computable Numbers, With an Application to the Entscheidungsproblem" (1936).

[69] "We suppose, as in I, that the computation is carried out on a tape; but we avoid introducing the "state of mind" by considering a more physical and definite counterpart of it. It is always possible for the computer to break off from his work, to go away and forget all about it, and later to come back and go on with it. If he does this he must leave a note of instructions (written in some standard form) explaining how the work is to be continued. This note is the counterpart of the "state of mind". We will suppose that the computer works in such a desultory manner that he never does more than one step at a sitting" (253-254).

> brain'. This would of course be a tremendous undertaking. The object if produced by present techniques would be of immense size, even if the 'brain' part were stationary and controlled the body from a distance. In order that the machine should have a chance of finding things out for itself it should be allowed to roam the countryside, and the danger to the ordinary citizen would be serious. Moreover even when the facilities mentioned above were provided, the creature would still have no contact with food, sex, sport, and many other things of interest to the human being. Thus although this method is probably the 'sure' way of producing a thinking machine it seems to be altogether too slow and impracticable. (9)

Turing's vision of a thinking machine is reminiscent of Frankenstein's monster—an assemblage of spare parts which wanders the countryside endangering the ordinary citizen. The danger of Turing's thinking machine results from the freedom of its body. For the work of computing, however, he realizes that no such bodily agency is required. He quickly proposes an alternative, "Instead we propose to try and see what can be done with a 'brain' which is more or less without a body, providing at most, organs of sight[,] speech[,] and hearing" (9). In separating the mind of his "thinking machine" from its body, Turing was reinforcing a common view of computers as disembodied brains and simultaneously responding to a genuine contemporary fear of mechanical humans.[70]

From its earliest inception, then, the electronic computer was conceived as an imitation of a human mind. This view of computers-as-minds had an unintended

[70] For the former, see see *Giant Brains, Or Machines that Think* by Edmund Callis Berkeley (1949); for the latter, see Asimov's concept of the "Frankenstein complex" in *I, Robot* (1950).

result, chronicled by postmodern literary critic Katherine Hayles in *How We Became Posthuman* (1999). Over time, the metaphor of computer-as-brain led to a "*systematic devaluation of materiality and embodiment*" (48).[71] This devaluation, in its most potent form, has led to a separation of information from materiality whereby computers have come to be understood as virtual or immaterial machines. This is the virtual fallacy.

In the area of game studies, the virtual fallacy has led to a great deal of debate. Scholars have been forced to reckon with the fact that video games are, on one hand, types of fiction similar to a narrative or movie. On the other hand, video games are also material objects and activities, with a physical presence in the "real" world. They seem to be what MIT game theorist Jesper Juul calls "half-real," phenomenologically split between the mind and the body. But how did they get this way?

John Von Neumann's *The First Draft of a Report on the EDVAC* (1945) was a key step of the process, cementing the connection between computers and minds.[72] For computer scientists, the report is famous for describing the advantages of a stored-program architecture, but it deserves special note for its futuristic vision of the mechanical computer as a human brain. Neumann begins the report by arguing that computers can be made with *elements*, switches with two distinct states. Then he proceeds to argue that "the neurons of the higher animals are definitely elements in

[71] The theoretical and practical shortcomings of a clear division between mind/body and human/machine were raised even earlier by Nichols "The Posthuman Manifesto" (1988) and Haraway "A Cyborg Manifesto" (1991).

[72] Von Neumann often receives credit for the stored-program architecture but *The First Draft of a Report on the EDVAC* also contained ideas from his colleagues John William Mauchly and J. Presper Eckert, whose names were left off the report when it was circulated by Herman Goldstine. The stored-program architecture, sometimes controversially called Von Neumann Architecture, was in turn influenced by Turing's earlier work on Turing machines, especially the concept of a universal Turing machine. For more on the controversy surrounding its invention, see Burks.

the above sense. They have all-or-none character, that is two states: Quiescent and excited" (5). This conclusion leads him to consider what type of switches might be best for simulating a human brain:

> It is easily seen that these simplified neuron functions can be imitated by telegraph relays or by vacuum tubes. Although the nervous system is presumably asynchronous (for the synaptic delays), precise synaptic delays can be obtained by using synchronous setups. It is clear that a very high speed computing device should ideally have vacuum tube elements. (5)

He settles on vacuum tubes because they have fast reaction times (a microsecond or 10^{-6} seconds), despite the fact that a telegraphic relay has similar reaction time (10^{-2} seconds) to human neurons (10^{-3} seconds). Presumably, he chose vacuum tubes over telegraph relays because the human brain contains some 86 billion neurons, and the EDVAC had an impressive, yet comparatively meager 6000 vacuum tubes. The method is less important than the intention: Neumann wanted the computer to be like a human brain. Early computing was driven by the purpose of creating an artificial mind.

In 1949, Edmund Berkeley, co-founder of the Association for Computing Machinery, further cemented the relationship of computing and minds with the publishing of *Giant Brains, Or Machines that Think*. A year later, Alan Turing proposed what has come to be known as "The Turing Test." In a telling choice, Turing chose the philosophy and psychology journal *Mind* to propose what he called an "imitation game," perhaps the earliest electronic computer game to ever be conceived. The game required three "players": a human witness, a machine witness,

and their human interrogator. Each of the players was to be placed into a separate room and allowed to communicate only through printed text. The job of the human interrogator was then to pose a series of questions to both witnesses in an attempt to discern which was human and which was machine. Turing hypothesized that:

> in about fifty years' time it will be possible to programme computers…to make them play the imitation game so well that an average interrogator will not have more than 70 per cent. [sic] chance of making the right identification after five minutes of questioning. (442)

Sixty years later, it is clear that Turing was wrong. No computer has ever been as successful as Turing imagined. Turing's forecast may have been wrong but his question still fascinates us: Could a machine think?

It was never Turing's intention for his game (or, as it has come to be known today, his *test*) to establish the basis of whether machines could think. He considered the question, "Can machines think?" to be "too meaningless to deserve discussion" (442). Today, the "Turing Test" is a greater source for philosophical debate than a serious goal for the field it spawned: artificial intelligence.[73] Still, it continues to occupy our imaginations precisely because it grapples with deep questions about the nature of human identity. The "imitation game" still gives us pause to consider: What is the difference between a mind and its imitation? And, even more fundamentally, what does it mean to be a human?

[73] Computer scientist Stuart Shieber, for example, has argued that the Loebner Prize based upon the Turing test has no serious use in AI research. See "Lessons from a Restricted Turing Test" (1993). For prominent critiques of machine intelligence, see Hubert Dreyfus's *What Computers Can't Do* (1972) and John Searle's "Chinese Room" argument in "Minds, Brains, and Programs" (1980).

The Turing Test was based on an actual party game, "The Imitation Game." In the original game, a man and a woman served as witnesses while an interrogator attempted to tell them apart. The original game then, far from a test of human exceptionality, considered the essence of sexual identity. As a game, it compelled players to consider whether men and women were distinct types of people, not just by their naughty "bits" but by their intellectual acumen. The male and female witnesses were sequestered in order to determine whether they bore any *intellectual* gender markers as opposed to *physical* ones.

The premise of the imitation game relies a clear distinction between body and mind. Such a separation probably proved attractive to Turing because, at the time, computers were physically imposing, closer to places than machines. Turing himself points to this advantage of the imitation game (434). By reducing each player's output to typed text, the imitation game attempts to remove any of the incidental, physical traces of identity while retaining a kernel of intellectual identity.

The imitation game, whether in scientific or party game form, depends on Cartesian mind-body dualism, the belief that bodies are physical entities which are both separate and distinct from minds. Even if men and machines are physically different, could they be intellectually similar? Descartes himself poses a similar question in *Discourse on the Method* (1637). There he describes a set of tests similar to the Turing Test to determine whether a witness is a man, animal, or machine:

> If there were machines which bore a resemblance to our bodies and imitated our actions as closely as possible for all practical purposes, we should still have two very certain means of recognizing that they were not real men. The

> first is that they could never use words, or put together signs, as we do in order to declare our thoughts to others. For we can certainly conceive of a machine so constructed that it utters words, and even utters words that correspond to bodily actions causing a change in its organs. … But it is not conceivable that such a machine should produce different arrangements of words so as to give an appropriately meaningful answer to whatever is said in its presence, as the dullest of men can do. Secondly, even though some machines might do some things as well as we do them, or perhaps even better, they would inevitably fail in others, which would reveal that they are acting not from understanding, but only from the disposition of their organs. For whereas reason is a universal instrument, which can be used in all kinds of situations, these organs need some particular action; hence it is for all practical purposes impossible for a machine to have enough different organs to make it act in all the contingencies of life in the way in which our reason makes us act. (140)

For Descartes, a machine could never pass for a human because, regardless of the complexities of its organs, a machine lacks a soul, the immaterial origin of human reason. The actions of a machine are determined by their mechanism; they have no mind to do otherwise. Both Turing and Descartes considered the question, "Could a machine imitate a mind?" to get at the deeper question of "Could a machine have a mind?" Both considered the possibility that machines could imitate minds. Both wondered if a good imitation could become the genuine article. To cop a phrase,

when does a "machine have a mind of its own?"[74] The answer remains unclear yet it is clear that the historically close association between computers and minds is a contributing factor to the virtual fallacy; it draws a clear distinction between a machine (whose material processes are transparent) and a mind (that which cannot be explained by recourse to simple mechanism).

The distinction has become so entrenched that it forms one of the foundational divisions within the field of computer science: the division of software from hardware. The first expression of this division can be found in a little-known or cited mathematical paper by John Tukey in 1958. In "The Teaching of Concrete Mathematics," Tukey laments that the time-consuming and rigorous computational methods of pure mathematics often keep students from learning a more diverse set of mathematical applications. The argument is familiar to any educator who has seen educational trends swing back-and-forth between theory and practice: "students need more applied mathematics, less pure mathematics." Although Tukey would not have realized it at the time, the lasting legacy of his paper was the coining of two words:

> Today the 'software' comprising the carefully planned interpretive routines, compilers, and other aspects of automative programming are at least as important to the modern electronic calculator as its 'hardware' of tubes, transistors, wires, tapes and the like. (2)

Tukey's division of computer science into software and hardware mirrors the Cartesian divide, assigning the "interpretive" realm to "software" and the physical realm to "hardware." As a mathematician, Tukey's division of computer science was

[74] For skeptical views on computers as minds, see Hubert Dreyfus, *What Computers Can't Do* (1972), and John Searle's "Chinese Room" experiment in *Minds, Brains and Programs* (1980).

undoubtedly influenced by a similar division which occurred in mathematics in the 18th century whereby "pure mathematics" came to be associated with the intellectual and "applied mathematics" came to be associated with the material.

Of course, the division between intellectual theory and material practice is never quite so simple. Early computer philosopher James H. Moor was one of the first to point out that the software/hardware divide should be considered a practical rather than ontological division ("Three Myths of Computer Science"). The distinction between software and hardware is useful for the division of labor but it can also be misleading. Software is also a material entity; hardware is also intellectual:

> It is important to remember that computer programs can be understood on the physical level as well as the symbolic level. The programming of early digital computers was commonly done by plugging in wires and throwing switches…The resulting programs are clearly as physical and as much a part of the computer system as any other part. Today digital machines usually store a program internally to speed up the execution of the program. A program in such a form is certainly physical and part of the computer system. (Moor 215)

Yet in popular (and even some academic discussions) of computing, there remains a tacit distinction that hardware is material while software is not. Even the Oxford English Dictionary is misleading, defining software as, "The programs and procedures required to enable a computer to perform a specific task, as opposed to the physical components of the system." It is worth considering, however, that software programs, whether on a hard drive or a DVD, are still physical entities. Just because

we choose at times to focus on their symbolic aspects does not mean they cease to be material entities.

The distinction between *hard*ware and *soft*ware is often conceived as material vs. immaterial, but might be more accurately described as a signifier of *programmable resistance*, since both hardware and software are material entities. When one swaps a new piece of hardware into a machine, they are effectively re-programming its logical circuitry. Reprogramming with hardware is a human-scale, visible intervention in the structure of logical circuits; it requires a human touch. While the installation of software also requires a human touch, the logical intervention is no longer human-scale. Software and hardware are both types of programming, except the former happens more quickly at a much smaller scale.

The materiality of computer software has been a major focus of the field of media archaeology, which was inspired by Friedrich Kittler's *Discourse Networks 1800/1900* (1990) and has continued more recently through Siegfried Zielinski's *Deep Time of Media* (2006), Matthew Kirschenbaum's *Mechanisms: New Media and the Forensic Imagination* (2007), Matthew Fuller's *Software Studies\ A Lexicon* (2008), Jussi Parikka's *Insect Media: An Archaeology of Animals and Technology* (2010), Peter Krapp's *Noise Channels: Glitch and Error in Digital Culture* (2011), and also Jussi Parikka and Errki Huhtamo's *Media Archaeology: Approaches, Applications, and Implications* (2011). Each of these books is invested in a recovery of the materiality of digital media. Game studies, for its own part, is also invested in the materialities of computing. Ian Bogost and Nick Montfort's material examination of the Atari VCS, *Racing the Beam* (2009), launched a series of books by MIT press,

Platform Studies, which focuses on the material aspects of various game platforms.[75] Even if the virtual fallacy persists in some corners of academic discourse, the materiality of software has already come under a great deal of scrutiny.

German media archaeologist Wolfgang Ernst urges scholars to recognize that materiality of computers by proclaiming, "Media theories work only when being tested against hard(ware) evidence" (60). For Ernst, its not just that computers are material things but that they are materially performative. A computer is more than the sum of its parts:

> But what drastically separates an archaeological object from a technical artifact is that the latter discloses its essence only when operating. Although a Greek vase can be interpreted by simply being looked at, a radio or computer does not reveal its essence by monumentally being there but only when media archaeography being processed by electromagnetic waves or calculating processes. (Ernst 58)

In Ernst's view, the "essence" of the computer is material, processual, and performative. The computer must compute; Otherwise, it is no better than a shard of broken pottery, a mere shadow of its former self. If we ignore the performative mechanisms of the machine, we are no better off than the prisoners in Plato's *Allegory of the Cave*.

Media archaeology opens the black box and reveals the materiality of the virtual. The fallacy of computer virtuality relies on a faulty understanding of software as mere code, a series of mathematical expressions. In popular imagery, computer

[75] See also *Codename Revolution: The Nintendo Wii Platform* (2012) by Steven Jones and George K. Thiruvathukal and *The Future Was Here: Commodore Amiga* (2012) by Jimmy Maher.

code is often represented either as a snippet of indecipherable slashes, carets, and abstract language or an endless and unintelligible series of 1s and 0s. The computer is sometimes caricatured as a ravenous machine gorging on this "machine code." The name "machine code" suggests a type of code only fit for machines—a language beyond the ken of human understanding, the final intellectual foodstuff for hungry machines. Yet the significance of the 1s and 0s of machine code is for the benefit of humans rather than machines; the 1s and 0s help us grasp the binary logic materially written onto the surface of software media. Computers do not read 1s or 0s. They prefer more substantive fare: the cardboard holes of punch cards, the magnetic fluxes of a hard drive platter, or the microscopic pits of an optical disc.[76] Humans write code (for other humans), but software is almost solely written by machines (pantographs, write-heads, and presses) for other machines (card readers, read-heads, and lasers). Few humans have ever seen written software; the machines write small so they can read it.

This was not the case in the early days of computing when the materiality of software was cumbersome, tangles of wires and plugs laboriously ordered by women programmers. Over time, the wires became smaller and smaller before finally turning microscopic. For most users, software disappeared with the punch card never to be seen again. Visually reading software is no longer a practical endeavor. Today

[76] While it is tempting to think of these magnetic fluxes or pits and lands as 1s or 0s, they often do not correspond in a simple 1:1 ratio. It is worth considering that a computer is not a unified single thing. The appropriate stimulus for a hard drive or optical drive is not the same for a processor. A computer is made of parts and each part is sensitive (or attuned) to different stimuli. Even the same computer running the same program may use different means depending on where it is loaded from or whether parts exist in RAM already.

software is microscopic in size and millions of characters in length but it can still be read with the aid of powerful microscopes.

The computer's historical association with the mind and the logical realm of pure mathematics has encouraged a view of software as an immaterial entity. This de-materialization of software has only been encouraged by the commercialization of the micro-computer, whereby the mechanisms of computing have been obscured within black boxes for a market of consumer "users." In time, the average computer user has come to dismiss the material mechanisms of computing, just as the average driver has come to be naive of the mechanics of the automobile. While this is an unfortunate circumstance, not everyone needs to be a hacker or expert on the complicated minutia of hardware. On the other hand, humanists cannot simply cede the realm of computation to the sciences because we refuse to cope with the complexity of computational materiality. Computer problems are inextricably linked with human problems; The study of art, history, and writing in the 21st century are no longer separable from the computational mechanisms which produce them.

Games are no exception. While video games are certainly different from their predecessors and contemporaries, they remain deeply material activities. The study of video games as material entities is essential for understanding their construction, mechanisms, provenance, and preservation. Just as literary scholars must first contend with textual history of Hamlet's first "bad" quarto, game scholars must also contend with the mechanisms of play in a game like Super Mario Bros. The art and history of the video game cannot be divorced from the material form of its expression.

The Stuff Games are Made Of: Nintendo 10NES Under the Microscope

The Nintendo Entertainment System launched during one of the darkest moments in video game history: the North American video game crash. At the time, the video game market was saturated with consoles.[77] Some consoles were sold under multiple brands (e.g. Atari VCS and Sears Tele-games), some consoles could play multiple types of games (e.g. ColecoVision), and some console makers sold games for other competing consoles (e.g. Mattel created the Intellivision but sold games for the Atari VCS under the M-Network brand including *Burgertime* (1982), *Bump 'n' Jump* (1982), and *Lock 'n' Chase* (1982)). The confusion was multiplied by the fact that many console games were ports of arcade games (e.g. Coleco's port of Nintendo's Donkey Kong for Mattel's Intellivision). The largest issue, however, was that customers became disillusioned by the glut of poor quality games being produced and the market dried up. Almost anybody could, and did, create video games.[78] Nintendo entered the American home console market when most video game companies were going belly up. They succeeded where others had failed.

[77] A short list might include the Atari VCS and 5200, Bally Astrocade, Coleco ColecoVision, Emerson Arcadia 2001, Fairchild Channel F System II, Magnavox Odyssey^2, Mattel Intellivision II, and the Vectrex.

[78] One telling example is U. S. Games, a games division of the Quaker Oats company created in 1982. They made 14 games for the Atari VCS then closed one year later.

Fig. 3 Nintendo's hit 1981 arcade game Donkey Kong was ported by Coleco for the ColecoVision (left) and the Atari VCS (right). While consumers were presented with two versions, the one for the ColecoVision was closer to the arcade original. To make matters more confusing, the ColecoVision had a module (shown) that allowed it to play Atari VCS games. The game shown on the screen is Coleco's inferior Atari VCS port of Nintendo's arcade game Donkey Kong running on a ColecoVision.

Fig. 4 Three different versions of Nintendo's Donkey Kong made by Coleco. The left cartridge is for Coleco's competitor Atari VCS (and the Sears Video Arcade), the center is for Coleco's own ColecoVision, and the right is for Coleco's competitor Mattel Intellivision (and the Sears Super Video Arcade). The Sears Video Arcade and Super Video Arcade were essentially Sears branded versions of the consoles sold by Atari and Mattel. They were not compatible.

Nintendo was successful because it solved the quality control problem which plagued Atari, Mattel, Coleco, and other companies. Nintendo's biggest competitor, Atari, had little control over the quality of the games available for their own VCS because there were no restrictions over who could create and sell games for it.[79] With few established sources for reviews, players often bought poor quality games and grew to regret their decisions.[80] Nintendo's 10NES program remedied this problem by attempting to lock out companies from making games that were not authorized. The program was embedded in a chip within every Nintendo Entertainment System (NES) and Nintendo-authorized game, which allowed Nintendo to closely control the quality of the games released. When a game was inserted into the NES, the 10NES program checked whether the game was authorized by Nintendo. If it was not, the game would not run and the console ran an endless reset loop.[81]

[79] This allowed poor quality and obscene games to hurt Atari's reputation. One example is Mystique Games *Custer's Revenge* which encourages the player to rape a Native American woman tied to a stake. The issue of quality control was further complicated for Atari when other manufacturers began making clones of their system without authorization, such as Coleco's Gemini.

[80] The most famous example is *E.T.* for the Atari VCS, often lamented as the worst video game of all time. The game's commercial failure played a significant role in the company's demise.

[81] The blinking reset loop is a familiar sight for many players because as the console aged, the contacts wore or became corroded causing even authorized games to fail the 10NES authorization check.

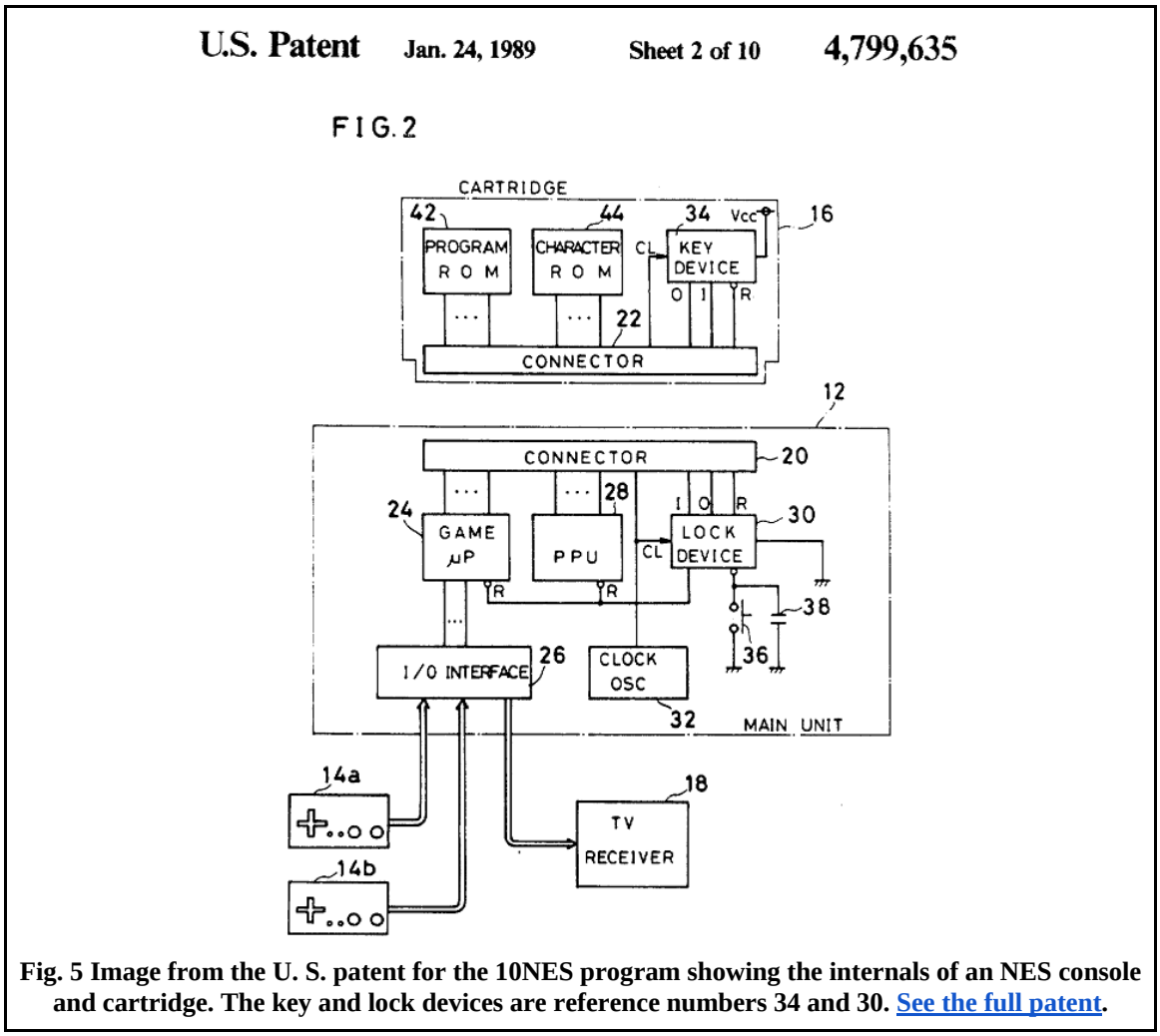

Fig. 5 Image from the U. S. patent for the 10NES program showing the internals of an NES console and cartridge. The key and lock devices are reference numbers 34 and 30. See the full patent.

Nintendo kept the code of the program secret and forced game developers to sign a contract limiting the number of games they developed for the NES to five per year. At the same time, Nintendo bolstered buyer confidence by creating a recognizable seal of quality, assuring buyers that the games they purchased met certain quality standards. For the most part, this helped them avoid Atari's misfortune. The story of the 10NES program does not end there though.

By 1985, the foundering Atari was split into a home division (Atari Corp.) and an arcade division (Atari Games). When Atari Games decided it wanted to port some of their popular arcade games to the NES, they ran into a branding issue. They could

not use the Atari name for console games because it was owned by Atari Corp., the home console and computer division. To solve this issue, Atari Games created a new subsidiary, Tengen.

In 1987, the head of Atari Games, Hide Nakajima, met with Nintendo's president, Minoru Arakawa, and vice president, Howard Lincoln, to discuss the possibility of porting Atari arcade games to the NES under the Tengen brand. Nintendo's contracts for developing games for the NES stipulated that companies were limited to releasing five games per year and that those games would have to remain exclusive to Nintendo for a period of two years. Due to Atari's extensive experience in the industry and substantial catalog of arcade games, Nakajima believed they should be given a less restrictive license than other companies. Arakawa and Lincoln were unconvinced. Nakajima eventually relented and signed a contract that would allow Tengen to make NES games. What Arakawa and Lincoln did not realize was that Nakajima and a team of analysts at Atari Games were already working on a way to double-cross them.

Since at least 1986, analysts at Atari Games had been attempting to crack the 10NES program. If they succeeded, they would be able to produce their own games for the NES, regardless of Nintendo's licensing program. The 10NES program was stored on a special microchip, the Checking Integrated Circuit (CIC). Atari hackers focused their energies on discovering how the program worked by monitoring the signals it was sending. When that failed, they tried a new approach.

Fig. 6 The PCB of a Super Mario Bros. cartridge detached from its plastic case. The leftmost integrated circuit is the CIC, which contains the 10NES program on a die under a sealed layer of black plastic. Also note the Nintendo seal of quality printed in the lower right corner of the cartridge's sticker.

If they could not make sense of the signal coming out of the chip, perhaps they could examine the CIC chip itself to see the actual 10NES program. The physical size of the 10NES program was small but the experts at Atari Games believed they could find a way to see it. The process would be complicated and fraught with difficulties. In the end, it was only partially successful.

In order to see the 10NES program, the analysts had to find a way to open the CIC. They used a strong acid to peel layers of plastic off the top of the chip until the die became visible. Because the traces were still much too small for the naked eye, they then used a powerful microscope. What they saw was not a series of 1s and 0s, but a mesh of electrical gates which would need to be carefully scrutinized to bear

fruit. The work was tedious and before it could be completed, a more deviant method would reveal Nintendo's secrets.

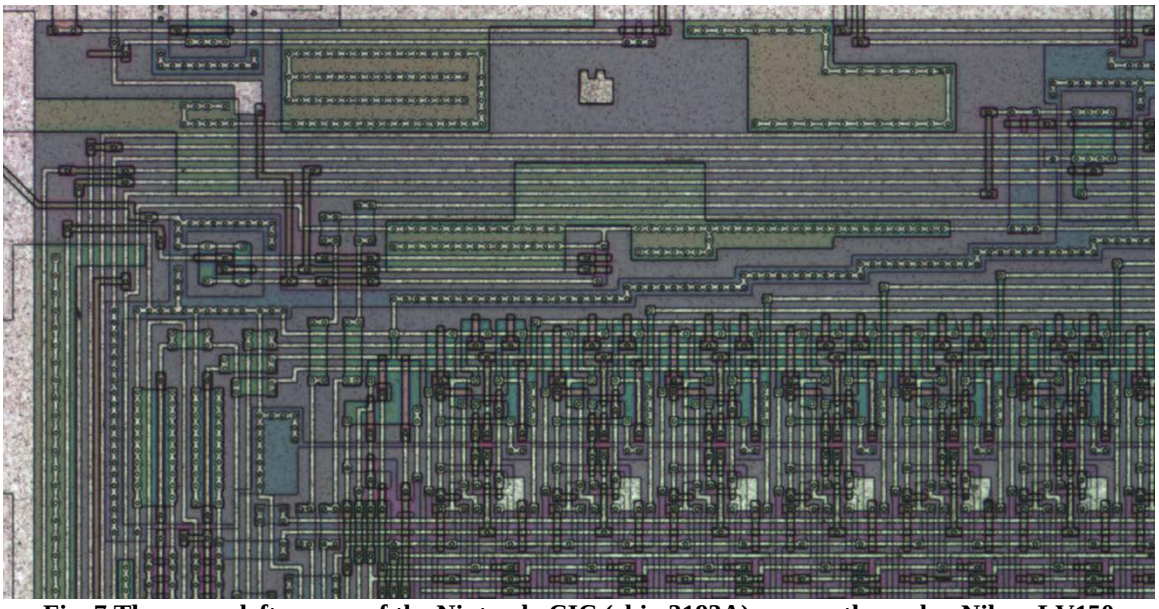

Fig. 7 The upper left corner of the Nintendo CIC (chip 3193A) as seen through a Nikon LV150 microscope using an LU Plan Fluor 20x objective. The part shown here represents roughly 1/35th of the entire die. Image stitched by Christian Sattler and courtesy of visual6502.org. See the full image.

Social engineering is often more effective than technical hacking and the case of the 10NES program was no different. In 1988, an Atari Games attorney signed a false affidavit to the copyright office stating they needed a copy of the 10NES code for a pending court case with Nintendo. No such case existed at the time but it created a pretext for Atari to finally get their hands on the code used to create the 10NES program. When the copyright office handed over the documentation, Atari Games corrected some of the errors in its microscopic transcription of the 10NES software. With this transcription, Atari Games was able to manufacture their own software to mimic the 10NES, dubbed the "Rabbit" chip. Finally, they could circumvent Nintendo's lockout chip.

Nintendo responded by blackballing any retailers that offered a single unauthorized game for sale. The extraordinary commercial success of the NES meant that few retailers were willing to disobey Nintendo and risk their ability to sell Nintendo merchandise.[82] The legal battle between Atari Games and Nintendo began in 1988 with Atari Games alleging Nintendo was using their patent on the 10NES program to monopolize the home video game market. Nintendo then brought a countersuit against Atari Games for breaching their contract and infringing on Nintendo's patent.

The case for Atari Games unraveled when it was revealed they had illegally gained access to the 10NES code rather than reverse-engineering the software. The distinction between code and software was the crux of the case. While computer code could be copyrighted, the data which software generates could not be copyrighted. Atari was free to mimic Nintendo's mechanism, the material software embodied within the CIC chip under fair use; it was not free to plagiarize Nintendo's copyrighted code. The Rabbit chip was perfectly legal so long as it did not contain any of the code purloined from the copyright office. If Atari Games had merely replicated the functionality of the 10NES chip, they would have been clear of the law. The smoking gun was when Nintendo lawyers showed that the Rabbit chip contained parts of the 10NES code which were not functional. This proved that Atari had copied sections of the code directly from the copyright office documentation.

[82] Tengen's version of Tetris for the Nintendo was pulled from store shelves and destroyed. Few copies survived and it has become sought after by collectors both for its relative rarity and its important relation to video game history.

At the center of the controversy over the 10NES was a new game which would eventually become the most popular video game of all time, Tetris.[83] The history of the legal rights to Tetris are complicated. The game was originally created by Russian Alexey Pajitnov in 1984 on an Electronica 60 computer (a Russian clone of a PDP computer, similar in computing power to a PDP-11). In 1986, Howard Stein, president of Andromeda software, began securing the rights to Tetris from Pajitnov directly. Before Stein had fully secured rights, however, he began selling them to other companies (which then went on to sell rights to even more companies). Stein sold rights to Mirrorsoft which then sold the rights to Atari, who used their rabbit chip to create a Tengen-branded home version for the NES without Nintendo's approval. Meanwhile, Nintendo secured the console rights for Tetris from Electronorgtechnica (ELORG), the official Soviet agency responsible for such transactions.

Atari released Tetris for the NES in May of 1989 and Nintendo followed with their own version one month later. In a short legal battle which never went to trial, Nintendo was awarded the rights, and Atari was forced to pull the remaining copies of the game from store shelves. After one month on the market, Atari had sold a substantial 100,000 copies of Tetris; it was then forced to destroy the remaining 268,000 cartridges. The licensed Nintendo version of Tetris went on to sell 8 million copies. (Later that year, the game was released with the first Gameboy, eventually selling an additional 35 million copies and cementing Nintendo's dominance in the handheld gaming market.) The official NES version of Tetris was a great success, yet

[83] The authorized NES version sold around 8 million copies while the "pack-in" Gameboy version sold 40 million copies. Over 100 million additional copies have been sold for mobile devices since then.

many critics prefer the unlicensed Tengen version in large part because it supported two players at once.

The history of Tetris and the 10NES program reveals why the materiality of games, even video games, has important historical, legal, and financial implications. Atari's efforts to reverse-engineer the CIC by magnifying its die reveals how software, namely the 10NES program, is always constituted by a form of material inscription. At the same time, the disparity between Nintendo and Atari's versions of Tetris also reveal that the game is more than merely the cartridges or equipment used to play it. Both Nintendo and Tengen's versions of Tetris are arguably still Tetris, to say nothing of Pajitnov's original version on the Electronica 60 or dozens of others. Playing the game of Tetris always involves object interactions and orientations, yet the nature of the exact materiality of those objects remains flexible.

Consider a famous MIT hack from 2012 when students transformed a campus building into a gigantic game of Tetris. The hackers used the windows of MIT's Green Building (54) to form a 9x17 grid for the display. Each window was equipped with a red/green/blue light module, creating a colorful display field of gigantic "pixels." The lights were then rigged together through clever programming which allowed a player to use the face of the building like an enormous 80' x 250' screen. screen.

Fig. 8 Click to play a video of Tetris on the Green Building at MIT.

The hack raises some interesting questions about the phenomenology of video games. Could the game be considered Tetris? I think we can say that the game is definitively Tetris, at least in the phenomenological sense, in much the same way that Tetris exists across many computer platforms. That is, Tetris exists above and beyond the legal concepts of licensing or the material constraints of a single material platform. This is not to say that Tetris is an immaterial thing, idea, or platonic form but rather that Tetris can be materially instantiated a large number of ways, that the game exists primarily as a relation-to objects rather than as certain, specific objects in and of themselves. Tengen Tetris may not be Tetris in a legal licensing sense but it is still arguably Tetris in the ontological sense.

MIT Tetris closes a division between games and video games, exposing the superficiality of dividing games with screens from games without. It is certainly possible to argue that the face of the Green building forms its own type of screen but I think this is beside the point. After all, other types of games use digital electronics and screens yet are decidedly *not* video games (e.g. pinball). The MIT hack is

significant because it gets at something like the essence of Tetris-as-game (rather than merely Tetris-as-video-game).

Whether or not the Green building constitutes a screen, there is an ontological disparity between what the building *is* under "usual circumstances" and what it *is* the moment MIT Tetris begins. In the previous chapter, I attempted to illustrate this phenomenon with medieval games, making the claim that chess is chess whether in wood, marble, or pixels. The essence of the game is not in the materials used but rather in the practical relation between player and object. Here I intend to make the same argument from the opposite side of game history, that Tetris is Tetris, whether in pixels, marble, or wood.

Recall that in Cessolis's *The Game and Playe of the Chesse* (1474) that the word "chesse" referred not to the game in itself, but rather to the pieces. In medieval parlance, a game is a relation-to pieces called chesse or chessmen, a type of object-orientation whereby pieces become more than their ordinary selves. This type of playful re-orientation or re-identification I am calling *methexis*, following the medievalist and play historian Johan Huizinga. Play is, from a phenomenological perspective at least, a creative type of object-orientation, a way to relate with objects that goes beyond their ordinary uses or associated practices, what Heidegger might call "average everydayness."

For the chess player, the pieces are transformed by methexis, becoming new types of objects with unique and specific affordances. To the outside onlooker unfamiliar with chess and comfortably ensconced within the familiar worlds of average everydayness, the playful transformation appears as a fiction, lie, or illusion.

It is mimesis; the king, the knight, and the rook are false copies, mere wooden dolls shaped like a man, a horse, and a castle. Mimesis and methexis are always intertwined because our relations with objects are always contextually-situated.

Regardless of whether we call MIT Tetris a video game, the phenomenology is the same. Whereas chess players are engaged with a variety of pieces, Tetris players are engaged with various sets of blocks called tetriminos (i.e. I, J, L, O, S, T, and Z). The tetriminos can be formed by pixels on an lcd screen or by LED-lit rooms within the cement structure of the Green building. As an early video game, the origin of Tetris can be traced to mathematical games involving the manipulation of pentominos, whether physically or on paper. Tetris, as we now know it, may be a video game but it has also been imagined as a game without electronic circuitry (Juan Lesta & Belén Montero) or visual input (Choi, Park, Lee, and Kim). No doubt, in the future people will continue to play Tetris in new ways which go beyond the screen. However people play the game in the future, they will be engaged in the process of methexis.

The concepts of mimesis, methexis, and object-orientation are not just useful for games though. They can help shed light on how the computer has come to be defined as "virtual" rather than real, evidenced in terms like "virtual memory, "virtual machine," and "virtual reality." All three of these computer terms tend to be interpreted in a mimetic fashion: virtual memory is merely an imitation of physical memory, virtual machines is merely an imitation of a real machine, and virtual reality is merely an imitation of the real world. The problem is that in each of these circumstances, there are material processes at work whose effects are no less real than

the things they supposedly imitate. If we accept the mimetic perspective of virtuality, then we can never get at how and what computers are actually doing.

As an example, virtual memory is often described as a type of mapping whereby "virtual memory" takes the place of "physical memory." The distinction is misleading because virtual memory is every bit as physical as its physical memory counterpart. The only difference is that virtual memory is stored on a hard drive and physical memory is stored in RAM. The difference is a matter of media and methodology, not physicality.[84]

A virtual machine is a piece of software which allows one type of computer to emulate another. If a user wants to run a program for a legacy computer, say a Commodore 64, she can create a virtual machine using special software on a new operating system. A virtual machine is not merely a fictional or immaterial machine though. There are two opportunities for confusion here. The first is the mistaken consideration of software immaterial which I have hopefully laid to rest above. Virtual machine software, like any other type of software, is material. It is inscribed on a hard drive or some other form of media. The second confusion involves the distinction between a virtual machine and a "real" one. The hardware used to run the software may not be the *original* hardware (found within say a Commodore 64), but this does not make it any less real. Virtual machine software acts as an interpreter, taking a piece of software designed for another type of machine and attempting to simulate how it would have been interpreted. The simulation is imperfect because the interpretation of software is always reliant on 1.) The software's original media and

[84] The distinction between "physical" and virtual memory is important for programmers because information stored in RAM can be manipulated much more quickly.

2.) The physical mechanisms (i.e. hardware) of the original machine. Virtual machines may not employ these original mechanisms, but their mechanisms are no less real or material.

Virtual reality is also real and material. Like a painting, it represents familiar objects by a different set of material means. For example, consider Magritt**e**'s Modernist painting "La Trahison des Images" ("The Treachery of Images"). The painting features a picture of a tobacco pipe. Underneath is written the phrase "Ceci n'est pas une pipe" ("This is not a pipe"). Magritte's painting calls into question the difference between an object and its selective (or isomorphic) representation. Magritte's pipe representation has the visual appearance of a pipe, but it lacks the familiar shape and functionality of a tobacco pipe.

Similarly, we could envision a virtual reality simulator with a pipe which would have a similar effect. In scientifically material terms, Magritte's painting of a pipe is an amalgamation of dried oil paint and canvas; the virtual reality pipe then would be a series of energized liquid crystals in the form of an LCD (a more advanced technological feat, no doubt, but no less "real"). As representations, the painted pipe and the projected pipe would not have the same properties as a tobacco pipe but this is not to say that they are in any sense immaterial or fictitious. Both pipes exist ontologically even if only one is useful for smoking. The virtual pipe just so happens to have a small subset of visual properties which many humans find to be similar to a tobacco pipe.[85] Calling an object virtual then does not make it lack

[85] The word "humans" is a provocation to think of the same objects in non-human (alien) terms. A dog and a fly would be sensible to all three types of pipes but it seems unlikely they would find much representational similarity between them. An LCD screen and a painting might work well for

physicality or materiality; rather, it tells us how the object is physically instantiated, i.e. with liquid crystals mounted to a pair of glasses.

Virtual machines and virtual reality are forms of physical imitation. The ontological mistake of the virtual fallacy is the conclusion that because a thing is not "original," it is therefore immaterial or fictional. A 2014 Ford Mustang may not be the same as the original 1960s pony car but its not exactly fictional either. It constitutes its own separate yet definite ontological reality. The 2014 Mustang may not have the original 260 cubic inch V8, but it is a "real" Mustang (classic car snobbery aside). To use more familiar examples from computation, a computer desktop is no less "real" than its wooden inspiration.[86] It makes no difference if we call it a computer desktop or a gostak. It is a real thing; it exists and it has a material influence on the world. In Shakespeare parlance, "a rose by any other name would smell as sweet."

In the first chapter, I argued that medieval drama scholarship faces a great deal of confusion because, as scholars including Kolve and Clopper have shown, drama and games were considered phenomenologically indistinct for many medieval people. This chapter, on the other hand, argues that modern people have come to see traditional games and video games as distinct entities, overlooking the similarities in their phenomenology.[87] If we consider video games within the medieval framework,

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representing tobacco pipes to humans. They would arguably be a poor way to represent tobacco pipes for other creatures or objects.

[86] A similar sentiment might be expressed about any number of computer objects borrowed from "reality:" files, folders, documents, etc.

[87] In the realm of popular culture, there is a clear division between websites that cover either video games (*IGN*, *Gamespot*, *Kotaku*, N4G) or board games (*Board Game Geek*, *Dice Tower*, *Shut Up and Sit Down*). There is some crossover in smaller sites such as *The Escapist*. The division between traditional games and video games is also evident in scholarship—Jesper Juul divides games into "classical" and "video games."

not as things to be bought and played but rather as activities enabled by the flexibility of object ontology, then the continued segregation of video games becomes untenable. This first section has laid the foundation by showing that video games, like all games, rely on a deployment of real, material equipment. The perceived "virtuality" of video games, however, is not the only reason they remain isolated from their counterparts. In the next section, I expand on the medieval view to tackle what, at first blush, seems like a thoroughly modern question: What does it mean for a game to be digital?

The Digital Fallacy: Video Games are not Digital because Reality is not Analog

It almost goes without saying that software is essentially digital. Electronics have become synonymous with "the digital." The word "analog" today has primarily become a form of negation; the analog is merely that which is "not-digital." Yet Jonathan Sterne, professor of Art and Communications, disagrees with the familiar view:

> If analog refers both to things that come into contact with digital technology-probably to be transduced by it-and things outside the domain of digital technology that do not come into contact with it, the term expands to cover the whole of reality. This is a problem inasmuch as it conflates a specific technological condition or operation with reality itself.

I believe Sterne is correct insofar as reality is not a technological condition; Nor, as I have attempted to show in the last section regarding the virtual fallacy, can a technological condition exist outside reality. In this section, I take seriously the possibility that Sterne is correct when he argues that "reality is just as analog as it is digital; and conversely, that it is just as not-digital as it is not-analog." To do so, I will push the concept of methexis deep into the black box of the technological realm, attempting to frame "the digital" as a form of technological attunement or methodology rather than a self-evident material property. The crux of my argument will lie on a relatively simple distinction: When we say a thing "is digital," we are describing our familiar practices for its use rather than the thing in and of itself. This line of thinking leads to a surprisingly counterintuitive claim: modern software media

is not inherently digital nor analog until encountered and interpreted, whether by human eyes or the cold gaze of the machine.

Today, we tend to think of computers as digital electronic machines, yet historically computers have been neither digital, nor electronic, nor machines. The digital electronic age of the computer was born in 1937. At the time, 21-year old Master's student Claude Shannon was working on Vannevar Bush's differential analyzer at MIT. The differential analyzer was an analog, mechanical computer which could solve differential equations through the adjustment of a series of mechanical linkages. The output was graphed onto a sheet of paper. When Shannon completed his master's thesis, *A Symbolic Analysis of Relay and Switching Circuits*, he had a very different kind of computer in mind.

Drawing on the work of 19th century mathematician George Boole, Shannon's thesis describes how relays and switching circuits can be used to solve logical problems. Using Boolean logic (AND, OR, and NOT), he shows how simple circuits can be represented as mathematical equations. A series circuit (AND) can be represented with addition. A parallel circuit (OR) can be represented with multiplication. Finally, make switches can be distinguished from break switches (NOT) by using primes (e.g. X vs. X'). Using this simple notation, Shannon develops a series of theorems for constructing and simplifying logical circuits. Essentially, any logical circuit could be reduced to two possible values: 0 (closed) or 1 (open). At 21 years old, Shannon had described the essence of the digital signals which form the foundation of all modern software.

Shannon's thesis opened the door for modern digital computing, but what does it mean for a computer to be digital? The word "digital" is often described as a discrete signal (though not necessarily a binary one). A discrete signal can be dissolved into a finite number of separate values. When graphed in two dimensions against time, a discrete signal is usually represented as a series of points which are not continuous.[88] An analog signal, on the other hand, is represented as a continuous function with an infinite number of unique values. When graphed as a function against time, it resembles something like a sine wave. This difference between analog and digital signals holds true within the realm of pure mathematics; the material phenomenon is unfortunately a little messier.

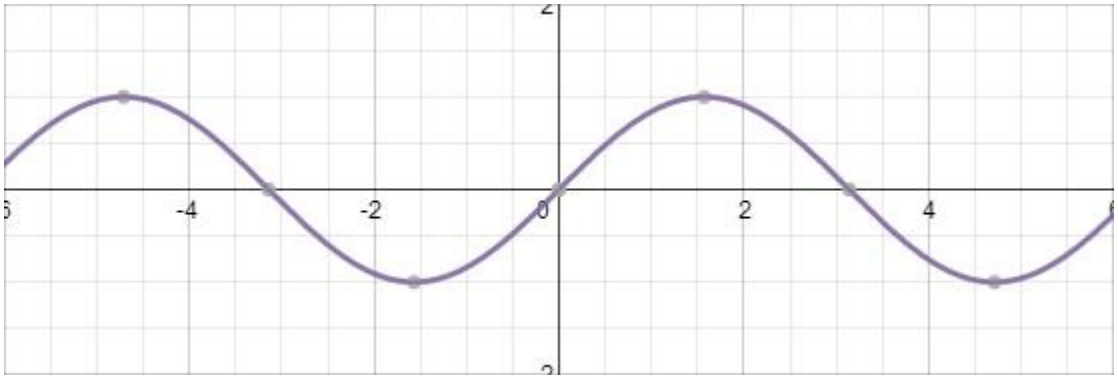


Fig. 9 A continuous analog signal, represented by the function f(x)=sinx. The graph is defined for any x.

[88] A digital signal is sometimes represented with a zero-order hold as a set of stairs or a Riemann sum. This creates a conveniently readable image but is also misleading because a digital signal is only defined at each sampling point. Connecting these dots will form an approximation of an analog signal. In fact, Shannon's later work, along with Harry Nyquist's, showed that given a certain number of points (or samples) and a signal of limited bandwidth, a digital signal can represent an analog signal without any form of loss. This is the Sampling Theorem which forms the basis of the fields of modern information theory and signal processing.

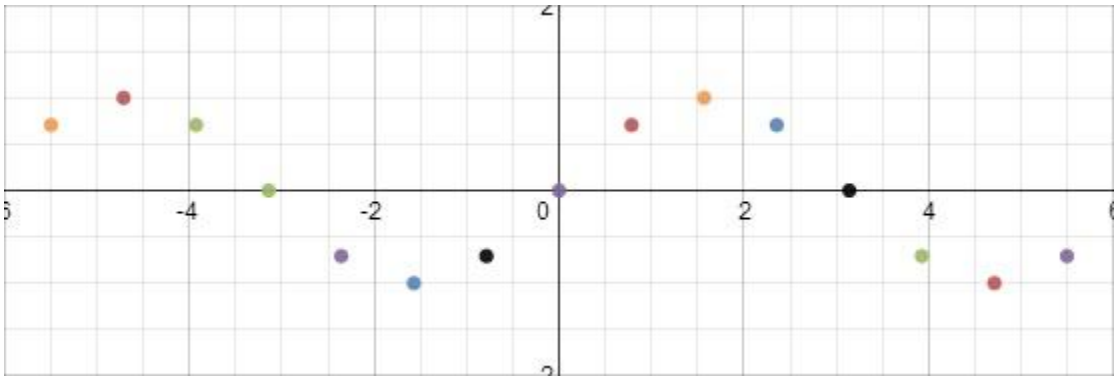


Fig. 10 A discrete/digital signal of the same function. The amplitude is only defined at specific sampling points, each π/4 apart.

Software only becomes digital when it is *interpreted* in a discrete fashion, a fact which Alan Turing glosses over in "Computing Machinery and Intelligence:"

> The digital computers considered in the last section may be classified amongst the 'discrete state machines'. These are the machines which move by sudden jumps or clicks from one quite definite state to another. These states are sufficiently different for the possibility of confusion between them to be ignored. Strictly speaking there are no such machines. Everything really moves continuously. But there are many kinds of machine which can profitably be *thought of* as being discrete state machines. For instance in considering the switches for a lighting system it is a convenient fiction that each switch must be definitely on or definitely off. There must be intermediate positions, but for most purposes we can forget about them. (439)

These often forgotten "intermediate positions" are practically negligible for most computer science, but they are essential for the issue of phenomenology. They reveal why computation is not inherently digital in nature. A software process relies as much on what is discarded as what is preserved; The strength of any signal depends on a reduction of noise. Software is not digital; it is *digitally-executed*.

All computer media are both digital and analog until execution. The value inscribed on a piece of media (say a hard drive platter) is never unambiguously digital. A read-head has to *interpret* magnetic values, turning fractional values into wholes. The magnitude of partial values is "quantized" according to defined thresholds (e.g. signals ≥.5 → 1 and signals <.5→ 0). The actual signal read from a platter might be .75 but it is treated as a 1. This might suggest that all material software is essentially analog until it is digitally interpreted. The belief that reality is essentially analog seems intuitive, yet Sterne clearly believes that "reality is just as analog as it is digital; and conversely, that it is just as not-digital as it is not-analog." Pushing Sterne even further, I would argue that reality is both digital and analog at once; the distinction is one of ontological relation rather than material certainty.

A digital computer is attuned to digital signals, interpreting the continuous values of software media as noise. An analog computer, on the other hand, is attuned to analog signals, interpreting discrete values as noise. James Moor describes this as a distinction between physicality and abstraction:

> …digital and analogue characterisations are not, or at least should not, be given as complete and accurate physical descriptions of the computer. Rather the digital or analogue characterisation is an interpretation on the symbolic level. The relevant physical feature will be abstracted. If it is a digital interpretation, continuities will be ignored; and if it is an analogue interpretation, discontinuities will be ignored. Undoubtedly, some physical systems are more easily interpreted in one way than the other. Nevertheless, in principle most, if not all, physical systems which might be considered to be

> computers could be interpreted either in digital or in analogue terms. For example, consider an early computer by Pascal which performed simple calculations- by the movement of cogged wheels. Is Pascal's computer a digital or analogue machine? If we interpret the cogs in the gears as digits and understand the completed movements of the gears as discrete states, then Pascal's device is a digital computer. On the other hand, if we interpret the gears as representing a continuum of values and focus on the continuous movement, then Pascal's device is an analogue computer. A myth about the digital/analogue distinction can arise if the distinction is given more ontological significance than it has, i.e., if one believes that there are intrinsic physical properties which divide computers into one of these two classes. (218)

In other words, software is inherently neither analog nor digital. The distinction depends on object orientation (not the medium itself). The phrase "digital software" then suggests an *intended signal* (or reading practice)—e.g. this software is intended to be understood in a discrete fashion. Regardless of what is intended, however, all media have the *potential* to be read in both digital and analog fashions.

A single medium can be read in digital or analog fashions. One example of this is the magnetic cassette tape which is considered analog when it records music yet digital when it writes software (e.g. for a Commodore 64). Similarly, we tend to think of a medium like a vinyl record being analog, but this is only because phonographs are attuned to analog signals. Vinyl record can and do hold digital data. One example is the interactive fiction game *The Thompson Twins Adventure*.

The Thompson Twins were a British New Wave band which released a string of hits in the 1980s. After reaching international success with their single "Hold Me Now" in 1983, the band decided to use an unorthodox form of promotion: a video game competition. The game for the competition was a short interactive fiction game called *The Thompson Twins Adventure*. Fans were encouraged to complete the game, answer a simple question based on the game's ending, and then send it in to be randomly drawn in a raffle. The lucky winner would get to meet the band backstage.

The Thompson Twins Adventure is less interesting for its gameplay than its distribution method.[89] The game was given away free on a vinyl flexi disc in the computer enthusiast magazine *Computer and Video Games*. The vinyl disc is noteworthy because it contained two distinct sections:

an analog audio soundtrack and the digital computer program for the ZX Spectrum. In the magazine, a short description describes how to play the game:

> First, remember that this is NOT a floppy-disc. Don't try to use a disc drive to load it! If you only have a record player and not a tape deck, you can load the Spectrum version directly from the record to the computer. Connect a lead from the headphone socket of the record player to the EAR input on the Spectrum. Set the record to a medium volume and turn off the loudspeakers, if you can. This will prevent you from hearing the awful screech! (11)

The "awful screech" is the game data being analogically interpreted as sound. The sound is unpleasant because it was never intended to be interpreted in an analog fashion. The game literally becomes noise when interpreted in analog fashion. (This

[89] The game itself was an unremarkable imitation of the text-based game *Adventure*. You can play it here.

is not to say that the analog sound of the game is meaningless but rather that its meaning is not *useful* for most humans.)

This does not mean the disc is digital however. It also contains an analog music section intended for phonographic sound reproduction. Trying to load the analog audio section of the flexi disc onto the ZX Spectrum would result in an error. The disc is paradoxically analog and digital at once, containing two intended signals depending on whether the listening apparatus is the "ear" of a ZX Spectrum or the ear of a human being.

The *Thompson Twins Adventure* disc demonstrates how a record can be both analog and digital. Is it fair to say that the "awful screech" is mere noise to human ears? It is possible to conceive of a human listener who is adept at interpreting the sounds of ZX Spectrum software. Humans do not interpret the noise in the same way as the ZX Spectrum, but that does not mean the "awful screech" is devoid of useful information when interpreted in an analog fashion.

In other words, the difference between signal and noise relies on the certainty between what is and is not useful, a distinction which is not always clear. Consider for example, the familiar 1990s sound of a 56k dial-up modem. Land lines are usually considered analog (like phonographs) but a modem interprets the phone message "sounds" in a discrete fashion through a phone line. For the modem, the sound is experienced (or interpreted) as a digital signal.

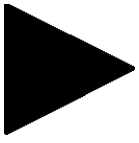


Fig. 11 Click to play the sound of a dialup modem

Of course, we should also consider what the human user experiences, which is arguably more analog. This noise constitutes its own type of signal for familiar users, giving valuable information (including the connection rate of the modem and whether the connection was successful or not). The same sound constitutes two types of useful signals at once (i.e. a digital handshake for the modem and an analog message to the user).

My intention here is not to suggest that the difference between the analog and digital is irrelevant. Few things could be more relevant to the process of computing. Rather, I want to investigate the materiality of software media, to show why the common sense view of computers as fundamentally digital requires skepticism.

For game software studies, many of the logical aspects of video games are interpreted by a digital signal, but over-relying on digital approaches can obscure the analog aspects of a game. Just as literary history has attended to literary media (e.g. scrolls, manuscripts, and books) in the form of descriptive bibliography, game historians must attend to the physical aspects of software. Game historians must go beyond the code and behind the screen, considering the mechanisms which create virtual worlds: the textures of red plastic buttons, the electron guns of CRT monitors, and the materiality of game media. These are all essential parts of a video game, and their mechanisms reveal the faultiness of a disciplinary divide between digital video games and their analog counterparts. All games can be understood through digital and analog interpretation; no game is essentially either one or the other.

The difference also matters for new media scholarship, which is confronted by the question of what makes a medium “new?” One of the traditional answers to this

question has been that new media is digital.[90] This answer, however, is unacceptable in the face of a media artifact like *The Thompson Twins Adventure*. Are we dealing with old or new media? The answer, it would seem, is both. Just as the *The Thompson Twins* flexi-disc is analog and digital at once, it also both old and new media. The distinction may be useful for establishing disciplinary borders, but it can also lead us to a misguided view of phenomenology. If reality is as analog as it is digital, then video games are too. To get at how video games work, whether technologically or phenomenologically, game scholars need to be ready to view the world in analog terms. Few games make this more clear than *Dragon's Lair* (1983).

[90] For example, Lev Manovich begins his list of the principles of new media in *The Language of New Media* by saying that new media relies on numerical representation: "All new media objects, whether they are created from scratch on computers or converted from analog media sources, are composed of digital code; they are numerical representations" (49).

The Video Game in Analog Terms: *Dragon's Lair*

Nintendo was not the only game company which thrived during the North American video game crash. In 1983, Cinematronics created an arcade sensation with *Dragon's Lair*. The game grossed over $32 million by February of 1984 and remains one of the most successful video games of all time, having been ported or remade more than 60 times for different consoles, PCs, and disc players. After three decades, the game continues to be ported to modern hardware including the Wii, Xbox 360, PS3, Android and iOS. While the plot of *Dragon's Lair* is arguably prosaic, knight rescues princess from dragon, the game became an instant classic in 1983 due to its detailed, hand-drawn imagery created by animator Don Bluth.

In the 1960s and 70s, Bluth worked as an animator for Disney on classic films such as *101 Dalmatians*, *The Fox and the Hound*, *Sleeping Beauty*, *Robin Hood* and *The Sword in the Stone*. In 1979, disenchanted with the way films were being made, he left the company with fellow animators Gary Goldman and John Pomeroy to found a competing company known as Don Bluth Productions. As an animator and producer, Bluth continued to make animated films such as *The Secret of NIMH*, *An American Tail*, *The Land Before Time*, *All Dogs Go to Heaven*, and *Anastasia*. Considering Dragon's Lair was hand-animated by Bluth, it is not just an important part of video game history, but an important part of film history as well.[91]

The hand-drawn imagery of *Dragon's Lair* allowed the game to have stunning visuals, akin to an animated film. On the other hand, the gameplay was fairly limited,

[91] The game's animation exists on archival film, which was remastered for releases on Blu-ray and HD-DVD in 2007.

consisting of a series of timed reactions. At key moments in the animation, the player was given a clue in the form of a sound and flash which suggested the appropriate input to advance the game (e.g. up, down, right, left, or sword). An incorrect or slow response would cost the player a life.

Fig. 12 Three successful arcade games released in 1983. From left to right, *Mario Bros.*, *Pole Position II*, and *Dragon's Lair*.

Despite limitations in gameplay, the visual splendor of *Dragon's Lair* was unlike any other arcade game at the time. The player's button presses were interpreted in a digital fashion by a Z80 processor. No digital processor at the time, however, could have processed the game's visual detail.[92] The feat was accomplished through the use of LaserDisc media, a large optical disc similar in appearance to a CD yet closer in size to a vinyl LP. While LaserDiscs are ostensibly large CDs, they contain video signals encoded in an analog form.

On a CD, the information is marked out by "pits" and "lands." A pit, like the name suggests, is a physical indentation in the disc's substrate.[93] Those areas without pits are considered lands. The data stream is inscribed on the disc in a spiral-shaped

[92] Even today, the detail of 35mm film exceeds hi-definition digital formats like Blu-ray. Studios today use digital means to create film because it is easier and cheaper to process, not because it represents a higher level of visual detail.

[93] While a phonograph stylus reads an LP from the bottom, a CD laser reads the disc from the bottom. From the perspective of the laser then, a pit is actually a bump protruding into the protective polycarbonate plastic below.

pattern, like an LP record. The length of each pit is interpreted in a discrete fashion. The read laser interprets one of nine possible lengths, each one corresponding to a specific digital string.[94]

Laserdiscs also use pits and lands but they are not interpreted as discrete lengths. Instead, the pits and lands mark out a clipped pulse modulation wave formed from a composite video signal and two audio signals.[95] The length of each pit represents the video portion of the signal while the length of each land represents the audio. Depending on the encoding, a LaserDisc holds roughly 30-60 minutes per side.[96] The footage for the entire game of *Dragon's Lair* is less than 22 minutes long.

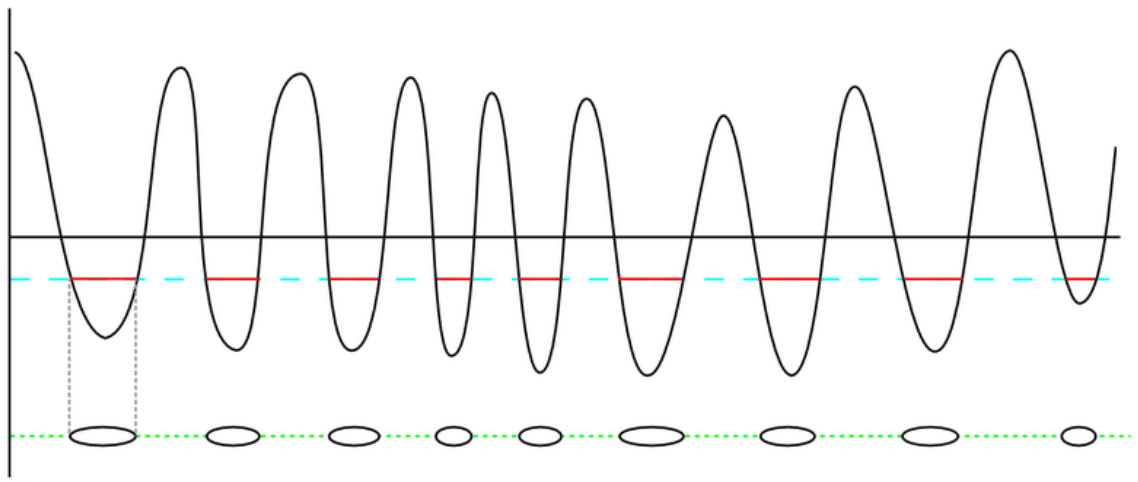


Fig. 13 In Laserdisc encoding, an analog FM Pulse Modulation wave (super-imposed audio and video) is first clipped (red and blue dashed line) and then converted into a series of discrete pits and lands. Image courtesy of Wikimedia Commons.

[94] In order to maximize the amount of data which can be represented on the disc and to ensure the disc can be read accurately, the pits and lands do not simply correspond to 0s or 1s. They use an encoding method called 14-bit Non-Return-to-Zero Inverted (NRZI). 14 bits represent a single digital byte. (The actual encoding is a little more complicated because of merging bits, synchronizing bits, subcode bits, and parity code bits. This means that 24 bytes (or 192 bits) of data are actually encoded as 588 channel bits.)

[95] This encoding is in respect to the video channel. The encoded form of LaserDisc audio channels can be analog, digital, or both. I only focus on the analog portion for this analysis.

[96] LaserDiscs are encoded in several different ways: constant angular velocity, constant linear velocity, and constant angular acceleration.

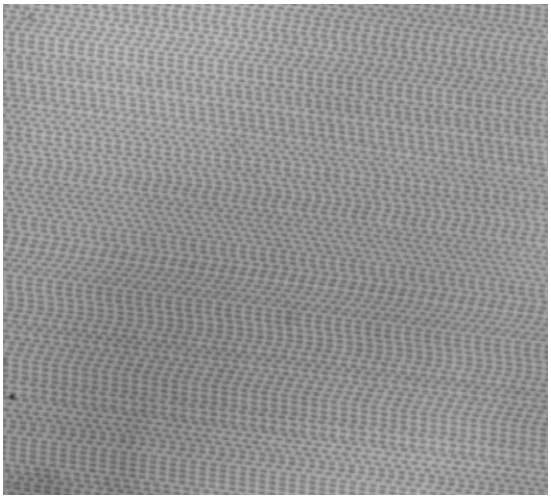
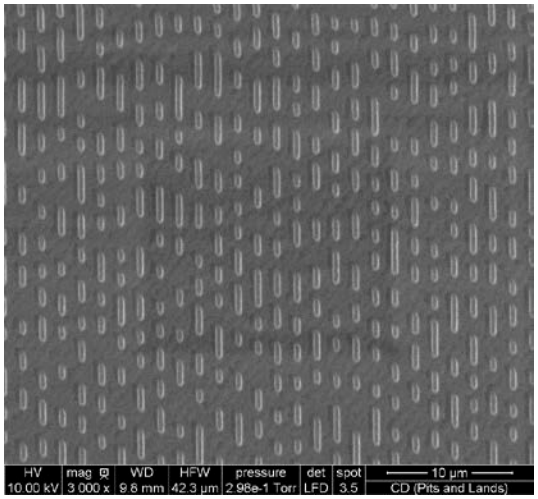


Fig. 14 Laserdisc inscription is ostensibly digital, containing a binary signal of pits and lands. The spacing of the pits and lands, however, does not correspond to a discrete signal but rather an analog Pulse Modulation wave. The shape and spacing of each pit is uniquely interpreted.



Compact disc inscription is digital, although not ostensibly binary. Each unique pit is interpreted as one of nine possible lengths. For human interpretation, these lengths correspond to the number of 0s between each pair of 1s.

Dragon's Lair was a success in 1983 because it was, at least partly, analogically-executed. Many versions of the game were created for digital home consoles over the next two decades. Even a decade after the game was released, most ports were fairly crude approximations of the original arcade version. CD-ROM drives made possible full-motion video versions but the image was still not as sharp as the original LaserDisc version. Only with the advent of DVD in 1995 could the image quality and gameplay of the original LaserDisc be reasonably replicated.

Fig. 15 A series of snapshots of Dragon's Lair ports from 1984-1995 (Left to right, top to bottom): Coleco Adam (1984), Amstrad CPC (1986), ZX Spectrum (1986), Commodore Amiga (1989), Nintendo Entertainment System (1990), Sega CD (1993), Philips 3DO (1993), CD-i (1994), and Atari Jaguar (1995). The later versions approach the graphical detail of the original Arcade laserdisc game but still fall short.

Dragon's Lair represents a unique chapter within game history because it is one of the few video games interpreted as an analog and digital signal at once. My intention here though is not to suggest tossing out digital ways of thinking because a single game breaks the mold. Rather, I want to point out that video games are complicated activities, and that game scholars need to combat the "code-centric" view

of video games. Just as literature is more than a series of letters, video games are much more than written codes or rules.

Few things could be more important for the play of video games than user input, but few writers acknowledge the importance of the analog stick, which uses a continuous input signal through variable resistors.[97] Nor does the use of analog photo sensors for input cameras get much attention. The issue needs to be pushed even further though. Video games are far more than logical circuitry. They use tangible interfaces, made of plastic, wood, paint, and springs. We touch them and they touch us back.

The larger issue with the digital fallacy is that it is reductive; it reduces the video game to the interpretive gaze of programmers and CPUs. Video games are digital, yes, but they are also analog in very important ways. My point here is not just that video games should be conceived as analog entities, but that the notion of video games as mere material entities is, in and of itself, reductive. Video games are also activities, irreducible to the hardware which enables them. Even as game scholars attend to the physical things needed for playing (and preserving) games, they must keep in mind that games are performative, exceeding the objects or media used to play them. A game is not an object, even if it requires that object to be played.

[97] Playstation 2 and 3 controllers also had analog face buttons that were pressure sensitive.

The Phenomenology of Play: Why Video Games are More than Coded Media

In the last chapter, I explained how the medieval English concept of games, or ludi, differs from our modern one. The most significant difference is that medieval texts describe games as performative activities rather than commercial products or objects. For this reason, medieval texts consider a much wider variety of activities as games, including acting, dancing, and joke-telling. Game scholar Mary Flanagan takes a similar approach in *Critical Play: Radical Game Design* (2009), where she considers games and game history within a variety of perspectives. Flanagan is equally at home discussing the material details of historical board games as she is considering the performative nature of games:

> In some sense, all games are performative, requiring some negotiation of action—thinking, guessing, running, or tossing—for play. Performance, when understood as context, constitutes a spectrum of cultural practices including theater, dance, music, event making, ritual, and spectacle, and could just as easily be studied by anthropologists as art historians.
>
> (Flanagan 149)

In addition to linking games to performance, Flanagan couples them with art history and play as a form of cultural critique. Her approach is compelling because it brings together many perspectives on games at once: art, history, material culture, and design.

Flanagan's multivalent approach is refreshing because game studies has been dominated by the view of video games as sets of rules or codes. This is evidenced in

Katie Salen and Eric Zimmerman's *Rules of Play: Game Design Fundamentals*, which contains a survey of the canonical definitions of "game" within the field. These definitions are gathered from a diverse crowd: David Parlett, Clark C. Abt, Johann Huizinga, Roger Caillois, Bernard Suits, Chris Crawford, Greg Costikyan, Elliot Avedon and Brian Sutton-Smith. While the type of scholars are diverse, with the exception of Costikyan, they all define games—at least in part—as a prescribed set of rules. My own approach is admittedly influenced by this trend. The previous chapter, guided by Ian Bogost's concept of procedural rhetoric, considered the relationship between a game's rules and "reality." Rules-based approaches may currently be de rigeur for game studies but they have shortcomings which deserve deeper consideration.

One shortcoming is that rules-based approaches are tailored toward a view of games as formalized systems. (This makes sense given game studies overwhelming focus on video games, whose rules are heavily formalized in code.) In its most reductive form, rules-based criticism commits a "rules fallacy," essentializing games to a series of logical player actions. A game studies dominated by logical rules approaches overlooks some very significant aspects of play. One can study Poker as a flowchart of choices (fold, check, raise, etc.) or odds (mathematical permutations and combinations), but this leaves out the human elements of the game (the "poker face," the "bluff," and the "tell"). One can study baseball rulebooks or statistics but will miss out on the essence of the drama, the significance of a Cubs World Series win or the retirement of a number. These are inextricable parts of each game, yet they exist

above and beyond formal rule systems. Yes, rules are usually an important part of games. Yet games are also so much more than rules.

For my own interests, the history and preservation of games require an approach that attends more deeply to their material equipment. One cannot hope to preserve the history of a game by merely recording the rules for its play. Even if the rules for playing golf *were* similar to 30 years ago, modern clubs are not. Similarly, emulating video games is not the same as playing them on original hardware. The affordances of a CRT television are different than an LCD.[98] When it comes to preservation, original game equipment is paramount, whether it's 17th century tennis rackets, 19th century board games, or 20th century Pac-Man cabinets. Original equipment is a testament to how games were invented, played, and refined.

On the other hand, focusing on the preservation and history of games can create its own type of essentialism, one where games are reduced to mere objects, things to be cataloged, archived, and curated. It is easy to replace a type of essentialism for rules with an essentialism for objects. Games are not mere things, reducible to the set of equipment we use to play them. Just as games exceed their rules, they also exceed their material equipment. Games are also social activities with their own cultural histories which are nearly as important to preserve as the equipment.

The issues facing game preservation are not entirely unique. In the 20th century, bibliographers were faced with a similar situation. They wondered whether a

[98] The high resolution of LCD screens means they are often thought of as superior to CRT televisions yet there are distinct disadvantages. For instance, historical games such as Duck Hunt for the NES are not playable on LCD televisions. Many LCD televisions have noticeable input lag which can make certain games more difficult or unplayable.

"text" was merely a physical document or if it existed to some extent outside of its material instantiation. Beginning with D. F. McKenzie, textual scholars have recognized that there exists a "social text" above and beyond the material text.[99] The character of Hamlet may be expressed authoritatively by Shakespeare's first folio (1623), but this version of Hamlet is only one of many in the wider social realm of "Hamletness." Likewise, the cultural relevance of Shigeru Miyamoto's character Mario has changed many times, from his pre-cursor "Jumpman" in Donkey Kong (1981) to a villain in *Donkey Kong Jr.* (1982) to a New York plumber in *Mario Bros.* (1983) to a citizen in the Mushroom Kingdom in *Super Mario Bros* (1985). Games exist in some sense beyond the immediate equipment used to play them.

If games are not essentially rules or objects, what are they? They may not *essentially* be rules *or* objects, but they certainly are rules *and* objects (and a whole lot more). As Flanagan has shown, the study of games is enriched by a variety of analytical approaches because each approach suggests something new about them. The previous sections have argued that games cannot be reduced to virtual fictions or simple dichotomies between analog and digital. Here I want to stress that games also cannot be reduced to systems of rules, equipment, or their sociocultural effects. Each of these perspectives is valuable; game scholarship needs all of them (and more). The Narratology vs. Ludology debates occurred because each side felt that the other's analytical perspective was reductive. In the end, there was no victorious "school" of criticism because, in their own ways, they were both right. In the words of Ian Bogost, "Videogames are a mess. A mess we don't need to keep trying to clean up, if

[99] See McKenzie's *Bibliography and the Sociology of Texts* (1999).

it were even possible to do so" ("Video Games are Mess"). Bogost's argument, as I take it, is that games cannot and should not be essentialized. They are all of the above and more.

Of course, saying that games *can* be understood through an infinite number of perspectives does not mean they *should* be studied in this way. Regardless of our philosophical desires, it is clear that some scholarship is of greater value than others. Often, the best scholarship in any field reveals new ways of seeing and interpreting; it inspires new discourses of understanding which disrupt prosaic paradigms. Important scholarship forces us not just to learn new things, but to learn new ways thinking, doing, and sharing.

To that end, rules-based criticism has played a crucial role during the establishment of game studies as a distinct discipline. Despite the fact that ludology verged on essentialism at times, it also rightly insisted that game studies requires its own methodologies and theories. What once was radical, however, has now become the status quo. There is no shortage of game criticism focused on rules or the sociocultural implications of games. Rules-based criticism is still needed (and will always be needed) but there is substantially less current work, and arguably more to be gained, in the realm of game equipment studies. Objects are overdue for attention, not just in game studies but in the humanities generally.

In relying on the concept of methexis, I have hoped to show the way that all forms of play rely on our relations with objects. The heart of the phenomenology of play is the way in which objects exceed our sense of certainty about what they are and what they are capable of. Play, games, methexis, whatever you want to call it, the

uncertainty of objects is what makes it possible. This uncertainty is at the heart of a growing movement in the humanities, the speculative turn.

Alien Phenomenology, Critical Making, and the Ontography of *Space Time*

The speculative turn in the humanities began with the work of a number of philosophers, most notably Bruno Latour (*Reassembling the Social: An Introduction to Actor-Network-Theory*), Levi Bryant (*The Democracy of Objects*), and Graham Harman (*Guerilla Metaphysics: Phenomenology and the Carpentry of Things*). From this footing, it has spread its roots through the foundations of academia—most notably through the University of Minnesota's Post-Humanities book series. Even a cursory review shows that object-oriented philosophy has made serious inroads in areas like ecology (Timothy Morton's *Hyperobjects: Philosophy and Ecology after the End of the World*), media studies (Matthew Fuller's *Media Ecologies: Materialist Energies in Art and Technoculture*), political theory (Jane Bennett's *Vibrant Matter: A Political Ecology of Things*), and medieval studies (Jeffrey Jerome Cohen's *Animal, Vegetable, Mineral: Ethics and Objects* and Karl Steel's *How to Make a Human: Animals and Violence in the Middle Ages*). In game studies, the movement is being led by Ian Bogost, whose *Alien Phenomenology* proposes a new type of phenomenological approach to academic scholarship, one where objects take center stage.

Bogost's concept of alien phenomenology forms its own type of intellectual game, asking "How can we look at objects in an alien way?" The alien phenomenologist asks strange, speculative, non-human questions: What is it like to be a bat? Or a computer? What does it mean to be *not* human? Understandably, some

humanists find such a trend frightening. They question what business *humanities* scholars have with studying objects outside of *human* affairs. Isn't that the job of the sciences?

Well yes, and no. One of the central tenets of alien phenomenology, and the speculative realist philosophical camp generally, is that even the lowliest of objects exceeds any human, let alone disciplinary, explanation. Scientists can describe a written letter, decomposing it into its material constituents: ink, cellulose, atoms, and electrons. Humanists can also describe the same letter, analyzing its social relevance and political importance. But neither perspective exhausts what a letter is or does. Nor can the study of the letter be neatly separated into scientific and humanistic spheres. A historian interested in the social relevance of a letter might need to understand the scientific makeup of its ink, say to determine when it was written or by whom. Or, to update the question to the 21st century, perhaps a history researcher wants to determine whether a music recording is genuine. Finding an answer might require a combination of expertise, both about the history of the musician and the forensics of digital media.

Alien phenomenology goes even further though, speculating on the world of objects outside of human contact. Alien phenomenology asks, "What is it like to be a thing?" The question is paramount for game studies because the activity of playing *is being* a new thing, whether that means a baseball pitcher, a chess queen, or a video game avatar. To play is to enter a world where familiar objects take on new significances through methexis. Players use objects re-creationally, reordering them into new kinds of things to understand them in unorthodox ways. Media guru,

Marshall McLuhan, paralleled the transformative power of games with that of art, "Art, like games or popular arts, has the power to impose its own assumptions by setting the human community into new relationships and postures" (242).

This also happens to be a goal of scholarship. Good scholarship, in any field, speculates about the world, considers how to understand it in a productive new way. In the humanities, speculation is too often limited to the linguistic realm. By and large in the humanities, the only type of scholarship which counts is writing in the form of articles, monographs, and books. There is evidence, however, that this is changing. The digital humanities, with its focus on building as a way of learning, might be the most notable example of this change.[100] The last 50 years in the humanities have been heavily entrenched in theory. Now scholars are beginning to wonder what a more hands-on type of humanities might look like.

One possibility is what Bogost calls carpentry. The term "carpentry" actually comes to Bogost from Alphonso Lingis by way of Graham Harman. In the original sense, carpentry refers to the way things mold one another, but Bogost uses it to describe a specific philosophical practice. To do carpentry is to build a device which helps form insight into what an object experiences. For Bogost, carpentry is in some sense a rejection of the traditional scholarly act of writing. More than just a new philosophical challenge, it exposes the limitations of writing for new frontiers of knowledge. The "alien" in alien phenomenology is not about little green men, but about considering how objects exist from a non-human perspective. If we want to get at what an object is and does, writing can be a handicap. Language is a particularly

[100] For examples of critical making, see Roger Whitson and Dene Grigar's "Critical Making in Digital Humanities."

human way of experiencing the world and, just as importantly, it can take us away from objects in and of themselves.

In addition to carpentry, Bogost proposes another methodology for alien phenomenology: the ontograph.[101] An ontograph catalogs the diversity of being, exposing the strange ways objects exist, not just for us but other objects. The simplest form of ontograph is a list of objects, a "Latour litany." These object lists work in one of two ways: by converging a large set of unlikely objects or by continuously emerging from one object perspective to another.

I call the former approach a "convergent" because it brings together objects which have little or no usual connection: a medieval castle, a neutron, a friend, a sturgeon, and a hiccup. The rhetorical power of these convergences is in their ability to compress the diversity of objects into a small space, gathering them in a way which defies human logic. In contradistinction, the second type of litany is a type of continual emergence. An emergent litany deconstructs a familiar object, exhaustively listing its definitions. This chapter is like an emergent litany, viewing games from many perspectives in an attempt not to essentialize or reduce them to any single perspective. Another example is Bogost's exhaustive definition of the Atari VCS game *E. T.* from the first chapter.

There are also non-linguistic ontographs. A visual ontograph uses imagery rather than language. The exploded view diagram is a type of ontograph, taking a familiar object and breaking it down into a variety of related parts. In one sense, it is convergent because it takes a complex object and breaks it down into a gathering of

[101] For the term's history, see *Alien Phenomenology* (36).

constituent parts. In another sense, it is emergent because it forces the viewer to consider the emerging relationships of any single part to another, the way that one part exists for and relates to any other. An exploded-view diagram relies on the power of "meanwhile;" it is a snapshot, a temporal slice of the inter-relationships between a set of objects which form a cohesive system.

Ontographs need not be static, however. Exploded-views are sometimes animated, showing the changing relationships between one part and the next. These animations form a type of temporal chain of "meanwhiles," a series of synchronic moments which draw the viewer's attention to the complex convergence and emergence of object relations by the motions of the parts. Although the motion is continuous, it is often broken up into animated parts which demonstrate "systems of influence," what Gilles Deleuze and Félix Guattari call "assemblages."

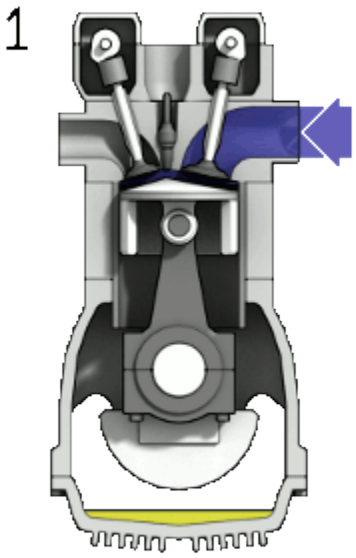


Fig. 16 An animated ontograph of the Otto Cycle of a four stroke piston engine. The numbers correspond to each of the four strokes: 1. Intake- Air and vaporized fuel are drawn in; 2. Compression- Fuel vapor and air are compressed and ignited; 3. Power- Fuel combusts and the piston is pushed downwards; 4. Exhaust- Exhaust is driven out. As the image cycles, the viewer is invited to consider the relationship with a variety of objects including: air, fuel, camshafts, lifters, valves, spark plugs, the piston, and the crankshaft. Image from Wikimedia Commons.

In the animated ontograph of the Otto Cycle shown above, the duration of each of the four "strokes" establishes a separate temporal slice, a "meanwhile," which draws the viewer's attention to different assemblages. During the intake stroke, the blue arrow represents the flow of cool air into the combustion chamber. The viewer is drawn to the concerted movements of the cool air (represented by the blue arrow) and the momentarily synchronized downward movement of the intake valve and the piston. Even if one has little grasp of the descriptive language or scientific principles of internal combustion engines, the ontograph vividly represents the material interaction of each part.

Ontographs can be fashioned from scratch, such as engine animation above, or they can be algorithmically generated from works of carpentry, such as Bogost's *I am TIA* program. *I am TIA* simulates the perspective of the Atari VCS's Television Interface Adapter or TIA. As the electron gun of a CRT television scans in a raster pattern from left to right, the TIA designates which color should be displayed. In the video below, a series of changing colors illustrate the experiential memory of the TIA as the television's electron gun scans across the screen drawing each frame of the video game *Combat*. The screen turns black as the electron gun returns back to the left side of the screen to draw the next line, a process called a horizontal blank.

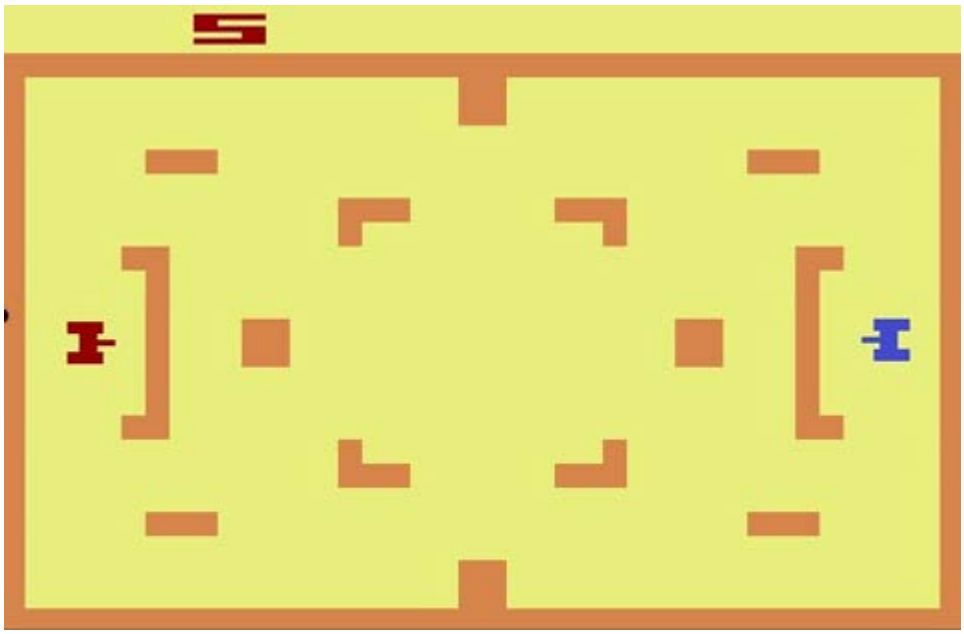


Fig. 17 Click to view a video ontograph **generated from Bogost's *I am TIA*.**

Works of carpentry and ontographs allow viewers to speculate on what it is like to be an object, often in ways that are either impossible or unlikely for humans to experience. *I am TIA* expresses what it is like to be a computer chip. A variety of game emulators have similar features, designed to quickly inform hackers of the computer's internal state.[102] The *deconstructulator*, created by Ben Fry, reveals what is in the current working memory of a Nintendo Entertainment System as it generates the game *Super Mario Bros.*

[102] See also ICU 64 for the Commodore 64, and icuGBA for the Game Boy Advance.

Fig. 18 **Click to view a video ontograph created with Ben Fry's *deconstructulator*. Or, play the emulator firsthand.**

The left side of the screen displays the full sprite memory of the *Super Mario Bros*. cartridge, a series of 8x8 pixel tiles which are used throughout the game. The right side of the screen displays the current sprite pieces being used (limited to 64). Watching the video ontograph above reveals interesting aspects of the game's programming structure which might not occur from normal play. One can see how the programmers cleverly reused sprites for different effects: Mario with star power uses the same sprites yet assigns them different colors; Luigi uses the same sprite as Mario colored green and white; the clouds and bushes on the first level are the same sprite, colored either white or green. The deconstructulator reveals the material mechanisms of *Super Mario Bros*. and the creative methods of its programmers. These methods allow us to understand and interact with the game in ways which writing simply cannot.

In the final section of this chapter, I will share my own ontograph created from one of the most popular games of the 20th century: pinball. To understand the significance of the ontograph though, one needs to know a little bit of the history of pinball. The first coin-operated pinball games go back to the 1930s, when there were over 150 different companies designing them. Today, there are only two manufacturers: Stern and Jersey Jack. The history of pinball is full of intrigue, especially its association with gambling and the mob which led New York mayor La Guardia to outlaw the game in the 1940s.[103] Pinball games flourished with the amusement industry alongside jukeboxes and later video arcade games. The closing of most American arcades by the end of the 20th century, however, also closed the book on pinball. While video games were able to transition, moving from arcade cabinets into people's home televisions and computers, pinball machines were left behind.

In 1972, before video games swept over the arcades, Bally built a four player pinball game called *Space Time*. Bally produced 5000 copies of the game and it was a moderate success, even being featured on the television show *Happy Days*. The game's primary attraction was a central bonus tunnel called the "time tunnel." The tunnel featured strobing lights which stopped when the pinball passed over a rollover switch. This feature was also used in two previous games, *Time Zone* (a two player version), and *Time Tunnel* (1971) based on the the 1967 television show of the same name before copyright issues forced Bally to stop production at just 70 units. *Space Time*'s backglass and playfield art are representative of America's mid-century

[103] For more on the history of pinball, see Kent (2, 76)

fascination with space travel. The same year *Space Time* was released, the final Apollo mission landed on the moon: the last time a human entered into space beyond a low-earth orbit. All of this context is useful for considering *Space Time* as historical object, but what if we were to consider it from the perspective of alien phenomenology?

What is it like to *be* a pinball machine? Could there be something like a deconstructulator for pinball, a way to expose the game's mechanisms in action? The answer is a qualified yes, for historical and technical reasons I will shortly explain. In the case of *Space Time* (1972), this is perhaps easier than one might expect because its mechanisms are visible to the human eye for anyone curious enough to peek under its playfield.

In the late 1970s, at the same time video games entered the picture, pinball machines began using solid-state electronics. The logic of electro-mechanical relays was replaced with circuit boards. The most notable immediate difference for pinball players was a change from mechanical reel scoring to digital displays. The new solid state machines also began to include other new electronic features: distinct sounds, music, voices, and dot matrix displays. While these changes were immediately evident for players, few of them were also privy to the dramatic changes which were happening under the playfield.

Long tangles of wires, banks of mechanical relays, score motors, and steppers were replaced by printed circuit boards. The material "software" of pinball machines shrank, concentrating the growing complexity of the machines into the tiny depths of electronic circuitry. At the same historical moment that the data of computer punch

cards was being concealed within the magnetic platters of floppy disks, the logic of pinball relays was being secluded into the confines of printed circuit boards. Of course, outside of the privileged eyes of route operators, few pinball players saw the material difference. The visible, material shift from electro-mechanical to solid-state machines, arguably the most important historical transition in the game's history, remained largely hidden within the confines of each game's arcane interior.

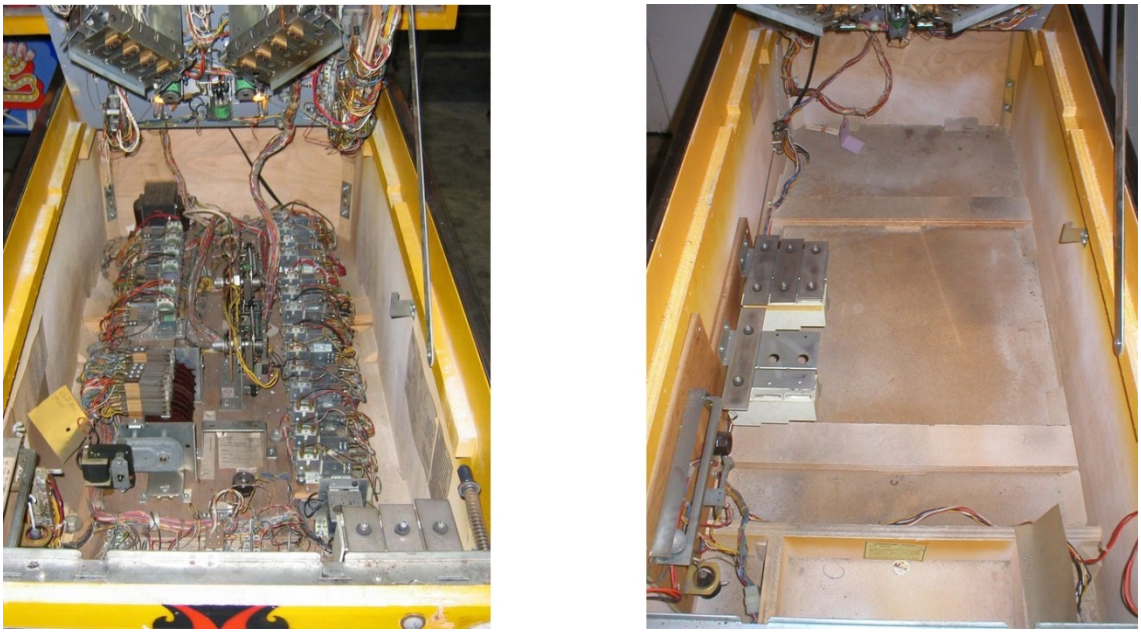


Fig. 19 The late 1970s Bally pinball *Mata Hari* was created in both electromechanical (left) and solid state versions (right). All of the software logic of the electromechanical version was replicated in the solid state version through three printed circuit boards located in the backbox.

Space Time, then, presents a unique advantage for ontography because it is from the age of electromechanical pinball. The functioning of nearly every mechanism in *Space Time* is visible the moment one lifts the playfield. What may seem at first like a daunting complex of moving parts, actually relies on a few relatively simple principles: relays, coils, and switches. Switches trigger relays (which control other switches) and fire coils which are responsible for mechanical

movements like pop bumpers, kick-out holes, sling shots, and flippers. It's one thing, however, to see the mechanisms, quite another to see them perform. When the Fonz was busy playing *Space Time*, what was the game up to?

My video ontograph of *Space Time* gives a provisional answer by simultaneously monitoring the machine from six different perspectives: above the playfield, facing the coin door (in cabinet), in the backbox, under the time tunnel, in the back of the cabinet, and facing the backglass. The viewer is able to see the machine's reaction to specific events, say the dropping of a coin, witnessing the reaction from angles and positions which a human could never occupy, let alone all at once. While the video ontograph is only six minutes long, a full description of the events of the video could have easily filled an entire chapter. Such a lengthy description though would be against the purpose of ontography, which is to visualize rather than verbalize. Nor is my intention here to educate users about all of the various systems of electromechanical pinball machines for the sake of maintenance, repair, or preservation. (There are much better sources already for this, namely the website of Clay Harrell.) The purpose of my video ontograph of *Space Time* is to demonstrate the machine's processual rhythms in action, to reveal the game's material software through the basic temporal synchronicities of its mechanisms.

These temporal synchronicities, which Bogost refers to as "the infinity of the meanwhile" (50), can only be loosely described by written discourse. To get at them, we must attend to the unique temporal flows of machinery, what Wolfgang Ernst calls "Eigenzeit:"

> When it comes to describing media in time, this aporia becomes crucial, because one can no longer simply subject media processes to a literary narrative without fundamentally misreading and misrepresenting their Eigenzeit [their own time]. Historical media narratives take place in imaginary time. Storage technologies, on the other hand, take place in the symbolic temporal order, and the contingent can now be dealt with by stochastic mathematics as implemented in real-time computing. (58)

The ontograph of *Space Time* takes us beyond "imaginary time," aligns the viewer with the game's spatiotemporal rhythm. The real power of ontography lies in the pedagogical difference between demonstration and narration, practice and theory, building and designing. Ontography shows rather than tells.

If showing seems difficult in the humanities, perhaps it is because we have spent so much time polishing our abilities to tell. We tend to be more comfortable grappling with language, say close-reading a sonnet, than the performative movements of oral poetry or the mechanisms of theater machinery. The numerical progressiveness of the the digital humanities is one form of antidote, but so many of the things which we must now scrutinize do not fit the mold. The worlds of things cannot be contained within the digital. We must, as Edmund Husserl advocated, "go back to the things themselves," and let them unfold anew before us. Only then can we attend to the objects of the human condition.

Fig. 20 [The Ontograph of Space Time.]

Theater Games: Playing with Shakespeare in the Past and Present

> Why stand we like soft-hearted women here
> Wailing our losses, whiles the foe doth rage,
> And look upon, as if the tragedy
> Were played in jest by counterfeiting actors? (*Henry VI*, Part III 2.3.25-8)

> "We know what we are, but know not what we may be"—Ophelia (4.5.42-3)

The popularity of staged play in London during the late 16th century initiated a seachange in the categories of game and drama. The religious, symbolic, and communal games of the medieval period were slowly reformulated and adapted to the exigencies of a professional, repertory, pay-per-view theater that was, importantly, more realist and secular. Miracles, moralities, and cycles were put down by legal, if not physical, force amidst growing Reformation skepticism of Catholic ritual. Meanwhile, the religious censure of anti-theatricalists and aldermanic efforts to limit playing were counterbalanced, in part, by royal favor, aristocratic patronage, and a nascent capitalist economy hospitable to theatrical enterprise. Unfortunately, the orthodox history of the early modern drama that arose in England has all-too-often been defined by a series of oppositions over and against medieval drama.

Such a Whiggish view of theater history misleadingly severs early modern drama, and Shakespeare in particular, from its antecedents in "medieval theater." Curtis Perry and John Watkins have cautioned us against privileging modernity:

> That caricature establishes an antithesis between the Middle Ages and the early modern period on the basis of oppositions between sacred and secular,

> Protestant and Catholic, feudal and capitalist, communal and individualist, Latin and vernacular, manuscript and print. Historians have repudiated some of these category markers as inaccurate, or at least analytically unstable. In other cases, they have left the opposition intact but asked us to reconsider the assumption that the modern alternative to medieval experience is necessarily better. (4-5)

The category of early modern drama is—in some ways—less about a religious or capitalist break with the past than the product of concentrating London-era play activities in new structures, both social—as in the case of companies—and material—as in the case of theaters. Phrases like "early modern drama" and "Renaissance drama" may suggest to us a clean break from medieval ways of playing, but 16th- and 17th-century English dramatists would not have seen it this way. We would do well to consider their work in late medieval terms.[104]

My contribution to this effort has been to follow the lead of medieval English people (and to a lesser extent early modern English people) who themselves conceived of drama as a form of play. Hence, I have called for a closer connection between the study of drama and games under the rubric of "play studies." Tom Bishop warrants this methodology when he traces subtle shifts in the theatrical use of words like "actor," "antic," "drama," and "performer":

> Before the rise of 'performance', 'drama', 'actor' and so on, the predominant

[104] See Helen Cooper *Shakespeare and the Medieval World* (2014); Ruth Morse, Helen Cooper, and Peter Holland *Medieval Shakespeare* (2013); Deanne Williams "Shakespearean Medievalism and the Limits of Periodization in *Cymbeline*" (2011); Brian Cummings and James Simpson *Cultural Reformations: Medieval and Renaissance in Literary History* (2010); Martha W. Driver and Sid Ray's *Shakespeare and the Middle Ages* (2009); Curtis Perry and John Watkins *Shakespeare and the Middle Ages* (2009); Gordon McMullan and David Matthews *Reading the Medieval in Early Modern England* (2007); and Jennifer Summit and David Wallace "Rethinking Periodization" (2007).

> vocabulary for what went on in the 'theatre' was one of playhouses, players and playing, terms basic to late medieval and Early Modern discussions. These terms are squarely located under a general rubric of 'play' that has a quite different range from that of 'drama'. ("Art of Playing" 161)

This chapter advances a similar view, arguing that Shakespeare's plays, which predate our familiar dramatic and theatrical conventions, draw on the medieval and carnivalesque view of "theater" as a form of playfulness. Shakespeare's craft pertains not merely to acting on a stage but to playing more generally. My chapter's subtitle, "Playing *With* Shakespeare in the Past and Present" directs attention to the ways that Shakespeare's plays enable—and were enabled by—playfulness and games.

Much has been made of the way London's theaters commercialized playing, but less of the precise ways they assembled individual players' crafts—including music playing, dancing, tumbling, and sword fighting—into a single purchasable commodity. Before audiences began paying to enter theaters, player companies contracted, or were contracted, for specific events or venues, or they occasionally gave public performances, hoping for payment from appreciative audiences. The new purpose-built London theaters made playing profitable by shutting out freeloaders and maximizing the space available for paying patrons. Soon, these professional theaters spawned a whole class of specialized occupations to support their stage productions. Since not all Elizabethan performance spaces were populated all of the time by professional actors impersonating Shylocks and Hamlets, paying customers were also treated to a variety of entertainments that included singing, music playing, miming, dancing, fencing, clowning, acrobatics, animal-baiting, cock-fighting, and more. Of

course, we also know that dramatic plays required carpenters and smiths to build and maintain the facilities, pyrotechnicians and engineers to design the machinery, and seamstresses to create lavish costumes.[105]

Today, these craftsmen are typically overshadowed by the playwrights (although "wright" tells us that they, too, were *crafts*men).[106] And if playwrights have held sway in modern theater studies, it is in no small measure because their efforts were well-recorded in commercial playbooks.[107] While carpenters and costumers have left just traces behind, the playbooks formed a synergistic market with theatrical performances, and ultimately, they helped to redefine "playing" as a tightly-scripted activity.[108] Playbooks distilled the events of the stage into the fixed structure of a narrative, gradually codifying and cementing the word "play" into an ordered enactment of words and actions.

Playbooks may be our best and most readily available records of the early

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[105] For more on the skills required for early modern playing, see Scott Trudell's essay "Occasion" in *Early Modern Theatricality* (2013). See also the work of Natasha Korda, including *Labors Lost: Women's Work and the Early Modern English Stage* (Philadelphia: University of Pennsylvania Press, 2011).

[106] "Playwright" is an early modern neologism, a compound of the Old English words "play" and "wright." The OED marks the first use of "playwright" by Benjamin Jonson in *Sejanus His Fall* (1605). The word "playwright" was preceded by "playmaker" dating from 1530. Sidney associates "play-makers" with "stage-keepers" in his *An Apologie for Poetrie* (published posthumously in 1595 but written around 1579).

The political agency of early modern playwrights has been questioned by Paul Yachnin in his *Stage-Wrights: Shakespeare, Jonson, Middleton and the Making of Theatrical Value* (1997). Yachnin offers a corrective to the New Historicist view of playwrights as socially influential.

[107] It should be noted that what a playbook was and/or did changed drastically in the early modern era. Pre-commercial and manuscript playbooks rarely named their authors since they were used for staging plays—not to be read. Hence, *The Castle of Perseverance* includes a staging diagram but no reference to the playwright. Later playbooks traded on the popularity of the commercial theater and were printed with a reading audience in mind. Discerning customers sought playbooks from particular theaters, companies, and playwrights. These print playbooks preserved some of the stage directions from productions, but how close these playbooks are to the official "promptbooks" kept by theaters is unclear.

[108] There is some debate about how well early modern playbooks sold. See Lesser and Farmer's "The Popularity of Playbooks Revisited" (2005) and Peter W. M. Blayney's "The Alleged Popularity of Playbooks" (2005). See also Lukas Erne's *Shakespeare and the Book Trade* (2013) on the commercial success of early modern playbooks and their relation to stage performances.

modern stage, yet they tend to limit us to the playwright's viewpoint. Playwrights created general plots, wrote lines, and devised a general order for performances. The historical record is weaker when it comes to activities outside this scope, especially stage actions, music, and improvisational games. These required little in the way of directions because they were already well-defined by familiar games and skills. The player—not the playwright—was best-qualified to "suit the action to the word, the word to the action," as Hamlet puts it. Even in cases where playwrights wrote parts with the skills of particular actors in mind, those playing skills always preceded the written word. As the early modern English theater grew from ludic and methectic roots, it retained and renegotiated a sense of drama-as-game.

In the first chapter, I argued that medievals saw the category of activities we call drama as interchangeable with games, plays, and ludi. All these activities shared a basis in methexis, *the transformation of the familiar purpose, use, and identity of objects*. This version of play is often still present in early modern drama—especially in moments of disguise, discovery, gender-crossing, and the supernatural—but it is clear from the plays themselves and contemporary language about playing that a change in emphasis from methexis to mimesis was taking place. The new Renaissance theater insinuates a variety of games, skills, and activities into narratives that imitated lived-experience as opposed to instantiating a religious or cosmic order.

This focus on imitation—of mimesis over methexis—altered the dramatic understanding of play from an act of becoming into an act of imitating. Consider the medieval French concept of *personnage*. As Laura Wiegert explains, *personnage* was a type of dramatic enlivening which goes beyond mimetic theatrical concepts like

actor or character:

> For these documents, neither 'actor' nor 'character' is an adequate translation: an 'actor' implies a human being, while 'character' refers exclusively to a fictional referent. 'Personnage,' in contrast, does not refer either to the individual playing the role or to the role that this individual assumes but incorporates both sides of this signifying operation. It is better understood as an activity: The activity of assuming a role through different representational forms. (39)

The problem with modern terms like "actor" and "character" is that they rely on a mimetic distinction; they reify the aesthetic distinction between "reality" and "fiction." *Personnage* reminds us that play is a type of methexis, an enlivenment understood to be "vif" (40).[109] The important distinction here is that *personnage* is a type of becoming, a form of being-through-presentation.

Consider also that the stage directions for early modern dumb shows preserve the medieval sense of playing as a type of becoming, using phrases such as "make signs" and "make show." (Dessen and Thompson 139). We can see this same sense of playing-as-making in phrases like "make as though" and "make as if"—phrases that are "used frequently up through about 1590" (138).[110] The methectic tenor of early

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[109] Like the actants of Actor Network Theory, this enlivening could apply equally to animate and inanimate objects. See also Laura Wiegert's chapter "Stage" in *Early Modern Theatricality* where she argues:

> Distinctions in media didn't matter in the same way to early moderns because they privileged the artifice through which the characters could be staged: the disjunction between a painting and a person was not one the producers of theatrical events attempted to disguise. In other words, a human being was considered as much like Saint George--or, in fact as *little* like him--as was a picture of Saint George. (42)

[110] These phrases were gradually displaced by more comparative phrases such "as if" and "as in." Dessen and Thompson call the former "distinctive to the drama of this period" and the latter "the most revealing as to what distinguishes pre-1660 from later staging" (14).

modern language about acting may also be seen in the common practice of referring to playing as "presentation" instead of "representation." "The performance of a role is a representation, but Elizabethans were more likely to speak of 'presenting' a part on stage, using a shorter form of the longer word, which also carries with it some sense of bringing into being, or into the current living moment and 'presence'" (Astington 30). *Presentation* is the ontological act of methexis, the particular set of activities, skills, or actions that re-define an object or actor during play. Perhaps the most recognizable form of *presentation* is formal declaration—what J. L. Austin calls a "performative utterance"—such as when *A Midsummer Night's Dream*'s Snout declares, "This loam, this rough-cast and this stone doth show / That I am that same wall…" (5.1.160-1) and then later undeclares himself to be a wall.[111] The humor, of course, is that for audiences familiar with playing these declarations are entirely unnecessary—they break the "fourth wall." Shakespearean drama can be, by turns, unselfconsciously methectic, as in this instance, then self-consciously methectic. Such reflexivity is most obvious in the period's recurrent metatheatricality, with its tendency to deflate, undermine, or expose mimetic realism in ways that seem eerily *post*- rather than *pre*-modern, as Andrew Gurr has noted:

> More recent awareness of metatheatrical games, growing out of postmodernism with Brecht's *Verfremdungseffekt* and Pirandello's *Six Characters*, was routine in London plays of the late 1590s. It reflects the writers' knowledge that their audiences were fully aware of their environs, and that the fictions were to be seen as overt mimicry whose pretences at

[111] All Shakespeare quotes are from the *Norton Shakespeare*. "Thus have I, Wall, my part discharged so; / And, being done, thus Wall away doth go" (5.1.202-3).

creating illusions had to be obvious. (126)

These illusions of the early modern stage created a patchwork of old and new forms of play, a mixture of overt and covert games.

The problem for theater historians, then, is that many of these forms of play were not recorded in playbooks. Even in those cases where playbooks are extant and complete, the details surrounding many forms of play—music, magic, or dancing for example—are now lost. We have only a handful of accounts by theatergoers.[112] Even the diary (perhaps better described as the ledger) of theater impresario Philip Henslowe, which gives us some insight into the properties that were used and whence they came, is not given to describing what occurred on the stages themselves. We know, for example, that clowning produced very popular stars, such as Will Kempe and Richard Tarlton, but Richard Preiss, author of *Clowning and Authorship in Early Modern Theatre* (2014), is still left lamenting that there are few surviving records of clown play. The mark of a great clown was, after all, his ability to improvise and go off-script (to Hamlet's great displeasure). Playbooks and a few scattered personal accounts fill in some blanks, but as Preiss makes clear:

> A playbook is not a performance: it is the retrospective fantasy of one, abstracted from the play's synchronic and diachronic stage lives, privileging certain voices over others, retroactively framing playgoing as a continuous, monological, readerly experience. When we do theatre history through playbooks, we are looking through an artifact *of* theatre history, a filter biased toward the values that constructed it—and designed to make that bias

[112] The definitive source for playgoer responses remains Andrew Gurr's *Playgoing in Shakespeare's London* (1987).

> undetectable, to naturalize its representation. In the case of clowning, they invariably turn theatre history into literary criticism, insofar as playbooks represent plays as books, and theatre as plays, autotelic verbal systems into whose matrix the clown can be assimilated. (6)

The limitations of playbook conventions do not help:

> Ironically, because it can make only limited use of playbooks, a history of the stage clown *becomes* a history of the playbook: the former entails the latter, because it entails discovering just how *unlike* our playbooks early modern theatre really was - and hence just how unlikely its subsequent translation into them was, and what discursive work it took to make the two conversible. (7)

Even though "the play" and "the book" were two very different things, reliable historical evidence for most early modern plays derives from playbooks, and to a lesser extent, from stationers' records.[113] The upshot is that we must take up the challenge posed by Evelyn Tribble:

> Since almost all of what survives of early modern drama is in the form of playtexts, the physical skills that were necessary to performing those texts must dwell in their interstices, in stage directions and implied action. If we read these gaps and interstices correctly, we may become aware of elements of early modern theatricality that have been overlooked. ("Skill" 174)

One way this has been attempted is to aggregate data from numerous playbooks. This is the approach of Alan C. Dessen and Leslie Thomson's *A*

[113] Indeed, for some companies we have very few records at all, especially those that travelled extensively or featured a large number of clowns. For more on the difficulties of recording clowning, see Weimann and Bruster's chapter "Clowning: Agencies between Voices and Pen" in *Shakespeare and the Power of Performance* (2010).

Dictionary of Stage Directions in English Drama 1580-1642 (2001), which draws on a database of some 22,000 stage directions from roughly 500 plays. Just as Caroline Spurgeon's *Shakespeare's Imagery and What it Tells Us* (1935) canvasses particular images from Shakespeare's plays, Dessen and Thompson inventory particular stage activities across the bulk of early modern drama. Compared with Spurgeon's volume, Dessen and Thompson's, which refrains from analysis, is closer to a concordance. While it is short (~300 pages), it is surprisingly expansive, featuring a great variety of verbs/actions ("chase," "spit," "whisper"), nouns/objects ("pistol," "lantern," "face"), and descriptors ("little," "in a rage," "quaint").

We can look, for instance, to the lemma for "letter," "a widely used property and plot device cited in over 400 directions" (131). The entry lists a variety of common actions: "**enter** with a letter," "enters to **deliver** a letter," "figures enter **reading** a letter," "a *letter* is read onstage." Letters are read aloud or "a *letter* is **thrown** or **dropped**." Each action is followed by a small list of relevant examples. Finally, because there are a number of examples which do not fit easily into a category, Dessen and Thomson summarize by saying, "the popularity of *letters* yields a wide variety of stage business." We may not be able to describe (or even care about) all of the ways letters were used, but their abundance confirms that they were a crucial part of stage play. They figure in comedies, tragedies, and in history plays, and they were used by all of the major companies and their players.

We can, of course, speculate on why this might be. Letters are vehicles of trust, betrayal, and revelation that nicely elucidate or propel plot, even though (or

sometimes because) their messages are easily perverted.[114] In history plays, they may have official status; in comedies they lead to humorous misunderstandings and in tragedies, to grave mistakes. To catalogue them and so to document just how common they are is to give us access to an aspect of theater history and stage playing that exceeds the bounds of any one play, playwright, company, or genre.

Dessen and Thomson's dictionary unsurprisingly is also an essential tool for recovering the games of the early modern stage, including music and swordplay. Stage directions for "sound" occur "more than 630 times in over 220 plays usually with context the only indication of the instrument(s)" (146).We might also consider fencing or swordplay: there are roughly 375 references to swords for swordplay and 350 mentions of dance. Dessen and Thomson allow us to quantify just how popular forms of play like music, sword fighting, dancing were on the early modern stage.[115] This, in turn, can help us rethink the relationship between early modern drama and text.

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[114] See Alan Stewart's *Shakespeare's Letters* (2008).

[115] There are, of course, limitations to Dessen and Thomson's approach. While the dictionary represents a carefully curated version of a stage direction database, the database itself is inaccessible. In the dictionary's introduction, Dessen and Thomson describe how they have tried to meet this demand as best as can possibly be done in print: "Some theatre historians who responded to our queries wanted everything - in essence, a complete concordance of usages of each term. For the non-specialist, however, such massive documentation can drown a reader in a sea of italics and citations (how does one present roughly 375 examples of *sword* or 600 examples of *door*?)" (xii). By striking a balance between description and reference, the dictionary gives readers the most common expressions in close proximity to the most popular references. In practice, this means that the references listed tend to be from familiar playwrights like Shakespeare, Jonson, Beaumont and Fletcher, etc. The available references, by Dessen and Thomson's own admission, have been tailored to the "non-specialist."

For historians interested in the larger scope of early modern stage directions, there are relatively few alternatives. While many early modern plays have been digitally transcribed, only a few are collected together in any single repository. Of these, fewer still have any mechanism for disaggregating stage directions from larger play texts. This may change with the advent of the Early English Books Online Text Creation Partnership (EEBO-TCP), an essential source for the work this chapter describes. During the research phase of writing this chapter, I constructed a new digital database of early modern stage directions based on the texts of the EEBO-TCP corpus, which I hope one day to make accessible to scholars. My corpus features the full text of some 57,000 stage directions (as compared with Dessen and Thomson's corpus which contains 22,000), but has its own set of limitations (including textual gaps) due to the nature of the EEBO-TCP project.

For one thing, the relationship between page and stage documents was more complicated than heretofore has been understood. In *Documents of Performance in Early Modern England* (2009), Tiffany Stern demonstrates the way that plays were "patched" together by many writers.[116] This fragmentation is one symptom of the importance of specialization in the early modern theatrical world:

> Each patch, however, had a separate home, a separate circulation and, as often as not, a separate writer: the song lyrics going to composers or originating there; the parts going to actors' separate homes if not copied there; the scrolls being inscribed and perhaps written in the theatre by a scroll-scribe; the stage directions being extracted by the prompter or his helper, again in the theatre, again in a process that involved authorship in addition to copying; the bill and Argument making their way to printers having been designed by author or playhouse. (3)

This patchiness includes the distinct auspices, producers, and enactors of a great variety of games, skills, and activities on stage. Composed textually of acts or scenes, plays were also composed ludically of the particular skills that individual players were expected to execute. That they provided a venue for skillful acting, singing, dancing, fencing, and clowning reminds us that early modern theater was a form of entertainment that showcased all manner of skills by all manner of players.

This helps to explain why Evelyn Tribble describes early modern "theatre as a form of entertainment with as many affinities to sport as to literature" (174). For her part, Erika T. Lin calls early modern drama a "porous" form of entertainment:

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[116] "As well as being called 'play-makers' and 'poets', playwrights of the early modern period were frequently known as 'play-patchers' because of the common perception that a play was pieced together out of a collection of odds and ends: it was not a single whole entity" (Stern 1).

> Continuities between theatrical performance and seasonal customs in early modern England indicate more than simply the existence of overlapping and contemporaneous cultural practices; they suggest that generic distinctions between theatre and festivity are, for this period, very difficult to sustain. For Shakespeare's playgoers, the boundaries of performance were extremely porous, encompassing a range of spectacular entertainments integrated in complex ways into social life. (20)

Early modern drama was not, as we are now prone to think, a distinct aesthetic mode. "Intermingled with longer scripted scenarios were music, dance, and comic sketches—all deemed 'plays' that might be presented at a 'Fencing-house.' Far from an ontologically distinct aesthetic mode, drama overlapped significantly with other recreations" (15). London's playhouses brought all of these recreations together in a single space, mingling a large variety of professionals and skills. Not just playwrights, but a host of professionals collaborated over time to integrate the ensuing performances, eventually giving rise to the single, purchasable, staged entertainment that was a "play."

But initially, and as a fledgling form of commerce, the early modern English theater industry had a stake in connecting dramatic plays to, *and* differentiating them from, from other types of games. In an essay in *Early Modern Theatricality* (2013) entitled "Games," Gina Bloom argues that the "tensions between theatres and the venues (such as taverns and parlours) where games like backgammon and cards were played were crucial to the project of bridging everyday leisure activities with commercial theatre." The "theatre benefited by establishing links to games," she

writes, but "it had economic and ideological reasons for distinguishing itself from competing ludic forms" (196). Bloom argues that, given the negative public sentiment against games (especially gambling), it was important for theater owners to "underscore the formal *differences* among games and between games and theatre" (196). By distancing drama from other types of playing, theater owners sought to inoculate their industry from the familiar criticism that gaming was an unproductive and disruptive pastime. To take up early modern drama-as-game, then, is to acknowledge the conflicted and rhetorically-situated nature of contemporary views of drama. Navigating the politics of early modern stage performance required a type of rhetorical ambivalence toward drama's ludic roots.

For early modern audiences, it also meant establishing new practices. In the old models of performance, either the aristocracy bankrolled a performance for their guests or audience members were pressured for donations.[117] The new early modern spectator had to accustom herself to a pay-to-view model—cash was paid up front and performances were untethered from the seasonal or liturgical rhythms that often had informed them.[118] The theater had to please patrons who might desire to hear the story of Priam, a jig, or a bawdy tale—or all three in succession. The solution, it would seem, was to give them everything the stage could hold—a carnival apart.

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[117] In *Mankind*, for example, the players demand a payment before the appearance of Titivillus.

[118] Jean-Christophe Agnew has called the theater the "proxy form" of the period's nascent market economy:

> The professional theater of the English Renaissance became in effect a "physiognomic metaphor" for the mobile and polymorphous features of the market. But it did not merely represent those features; at its most venturesome, it thematized representation and misrepresentation as the pivotal problems of its drama. For the first time, perhaps, theater made what Anne Righter has called the "idea of the play" its cardinal concern and, by thus confronting conditions of its own performance, it invoked the same problematic of exchange—the same questions of authenticity, accountability, and intentionality—at issue in the "idea of [the] market." (11)

Of course, a staged carnival had to be managed to keep it from devolving into chaos. The integration of so many play acts was far from seamless or immediate, but the establishment of permanent theaters and companies helped speed the process of synthesis. Playwrights, for their part, moved toward unifying narratives.[119] Still, the two hours traffic of the stage required traffic controllers—masters of ceremony who could orient audiences.

Today, roleplaying games sometimes rely on gamemasters, players who stand outside a game's mimetic world while also overseeing and crafting the fictions that make up the game's world. The early modern theater had an equivalent class of play craftsmen—prologues, musicians, and choruses to name a few—whose roles often escape critical scrutiny because their skills were not easily describable and largely situational. The role of these non-character players was essential yet also largely undocumented.[120]

The gaps in our knowledge about early modern playing result unsurprisingly from our limited understanding of the division of labor necessary to stage successful plays.[121] A good play text, like a game being playtested, is open to additions, substitutions, and changes. Early modern stage directions are often permissive-by-design, delegating authority to the players. We can see this in the use of words like "or" that signal possibilities rather than directions. In *The Insatiate Countess* (1613),

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[119] Lorna Hutson's *The Invention of Suspicion: Law and Mimesis in Shakespeare and Renaissance Drama* (2008) presents another, decidedly extra-theatrical, explanation for early modern drama's allegiance to mimetic narrative. She argues that the "rhetorical techniques for evaluating probabilities and likelihoods in legal narratives were perceived by dramatists in the London of the late 1580s and 1590s to be indispensable for their purposes in bringing a new liveliness and power to the fictions they were writing for the increasingly successful and popular commercial theatres" (3).

[120] "Non-character players" should not be confused with the familiar gaming term "non-player character" (video game characters controlled by artificial intelligence instead of human actors).

[121] For more on the distribution of the cognitive work of playing, see Tribble's *Cognition in the Globe* (2011).

"Rogero dances a Lavolta, or a Galliard..." (2.1.154); in *James IV* (1598) we read "Enter Bohan and the fairy king after the first act, to them a round of fairies, or some pretty dance" (634). *The Second Maiden's Tragedy* (1611) calls for "Recorders or other solemn music" (2454-5) and *More Dissemblers Besides Women* (c. 1615), "a strange wild fashioned dance to the hoboys or cornets" (E5r).[122] Stage directions take into account the everyday uncertainties of the stage, often calling for an indiscriminate number of performers: *Titus Andronicus* (c.1590) calls for "as many as can be" (1.1.69) and *What You Will* (1601), "as many pages with torches as you can" (H1V). Props, stage animals, and general stage directions are left open as well.[123] Even spoken lines were left to improvisation.[124]

As flexible entertainments, plays relied on seasoned performers to orient audiences—expert showmen who could get disruptive audiences to buy-in again when things went awry. I have already mentioned offstage playcrafters such as prologues, musicians, and choruses, but the period's most prevalent, and consequential, personalities were clowns and fools. To modern audiences, for whom plays revolve around the central axis of plot, the early modern period's ubiquitous clowns and fools—those seemingly marginal characters relegated to comedic bits—can seem superfluous. Their extra- and meta-narrative performances can feel tacked-on, distractions from the necessary questions of the play. Yet as a play like *A Midsummer Night's Dream* reveals, this apartness from the play world could also

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[122] See Dessen and Thomson's *s.v.* "or" for more examples.

[123] See *Orlando Furioso*'s (1594) "He plays and sings any odd toy" (1213), *Locrine*'s (1595) "let there come forth a lion running after a bear or any other beast" (4-6), and *James IV*'s (1598) "a service, musical songs of marriages, or a masque, or what pretty triumph you list" (2051-3).

[124] See *Trial of Chivalry*'s (1601), "speaks anything, and exit" (E4r), *2 Edward IV*'s (1599), "Jockey is led to whipping over the stage, speaking some words, but of no importance" (180), and *Greene's Tu Quoque* (1611), "Here they two talk and rail what they list" (I1r).

help to intentionally orient—or disorient—audiences to the play at hand. Their relative freedom from the necessary questions of the play gave them a special license to disrupt the world of the stage from both within and without, to speak for—and speak back to—a critical audience. Clowns and fools stood at the intersection of the old drama and the new, between playing games and enacting stories—between methexis and mimesis.

The remnants of medieval games within Shakespearean drama are most visible when we take account of its seams, those metatheatrical moments where one type of play activity is stitched to another. Few plays are more remarkable in this regard than Shakespeare's *A Midsummer Night's Dream*, given its patchwork of four preposterous plots.[125] Indeed, the stories of *A Midsummer Night's Dream* can seem altogether superfluous, as Stephen Greenblatt remarks:

> The play, then, is a dream about watching a play about dreams. Fittingly, the comedy devotes much of its last act to a parody of a theatrical performance, as if its most enduring concern were not the fate of the lovers but the possibility of performing plays. The entire last act of *A Midsummer Night's Dream* is unnecessary in terms of the plot: by Oberon's intervention and Theseus's fiat, the plot complications have all been resolved at the end of Act 4. (809)

Of course, the fifth act contains one of Shakespeare's lengthiest metatheatrical satires of—and love letters to—the theater, the mechanicals' production of "Pyramus and Thisbe." The scene is akin to a modern "sketch," a short skill demonstration for

[125] Briefly, these are: the love "rectangle" of Hermia, Helena, Lysander, and Demetrius; Oberon's revenge on Titania; the mechanicals' secret play rehearsals; and the mechanicals' play itself (the love story of Pyramus and Thisbe). To this, we might also add the plot of Theseus and Hyppolyta.

comedians. Why include a scene that could easily have been excised from the plot?[126] (Indeed, why does *Love's Labor's Lost* include the performance of *The Nine Worthies*?) From *Hamlet* to the *Taming of the Shrew*, Shakespeare's plays consistently foreground their theatrical constructions, forcing open the grip of immersive mimesis.

One answer is that *A Midsummer Night's Dream* is much more than a gathering of plots. In carnivalesque fashion, it joins together a variety of games into a single staged event. Here's Greenblatt again:

> When it enters the charmed, moonlit space of *A Midsummer Night's Dream*, "the rite of May," along with the other rituals and representations Shakespeare stitched together in creating his play, is transformed; to use Peter Quince's term for the metamorphosed Bottom, the rites and rituals are "translated." Folk customs, the revels of power, the classical tradition as taught in schools, all are displaced from their points of origin, their enabling institutions and assumptions, and brought into a new space, the space of the Shakespearean stage. (809)

Shakespeare stretches *A Midsummer Night's Dream*'s plot to its limits, cramming all manner of games into a single staged entertainment. Play is the raison d'être.

The patches of *A Midsummer Night's Dream* are woven from the fabric of the carnivalesque.[127] The play celebrates open-endedness, objective uncertainty, and

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[126] Francis Kirkman *did* excise it for "Bottom the Weaver," an interregnum-era droll in *The Wits, or Sport Upon Sport* (1662).

[127] I'm certainly not the first to connect the play with the carnivalesque. See David Wiles's "The Carnivalesque in 'A Midsummer Night's Dream'" in Ronald Knowles's collection *Shakespeare and Carnival After Bakhtin* (1998). Knowles's introduction contains a short list of the carnival scholarship

methectic possibilities—the type of material ambiguity at the heart of Latour's concept of irreduction.[128] The result is, in many cases, closer to a mood than a narrative. Indeed, Michael Bristol describes carnival, not as a particular occasion, but as a "mode-of-being"

> characterized by its negativity and inbetween-ness. It is the liminal occasion par excellence, something that happens betwixt-and-between the regularly scheduled events of ordinary life. The combined sense of ambiguity and exteriority points to a further meaning for Carnival, not as a specific feast, a general type of celebration, or even a class of social occasions, but rather as a mode-of-being-in-the-world or mode-of-being-together-with-others. (236)

Still, even such misrule requires a (mis)ruler. It is not mere happenstance that the Feast of Fools was led by the Lord of Misrule. And pertinent here is that it was these carnival misrulers whose whims sponsored the prevailing topsy-turvydom, who were the masters of the stage games.

In the case of *A Midsummer Night's Dream*, there are two distinct sets of misrulers: the fairies and the so-called "rude mechanicals."[129] (Q1 and F1 tellingly refer to the mechanicals as "clownes.") If the fairies are masters of methectic transformation, the clownes are comically bumbling amateurs, shadetree mechanics in the worst sense. The humor of fairy play often lies in its unexpected

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on other Shakespeare plays. See also Peter Burke's chapter "The World of Carnival" in *Popular Culture in Early Modern Europe* (1978).

[128] According to Latour's concept of irreduction an object can never be reduced to a single perspective or set of perspectives. Objects are essentially irreducible, always interpretable from a new frame of reference.

[129] The phrase "rude mechanicals," spoken by Puck in 3.2, suggests that these amateurs are better-suited to the mechanical work of tradesman than to the sorts of self-presentation cultivated by actors and courtiers. The members of medieval trade guilds performed the cycle plays, the type of amateur performances from which Shakespeare's theater sought to differentiate itself.

transformations—the "translation" of, say, Bottom's head into an ass. Even though such a transformation is preposterous, we—as audience members—are willing to accept as fictional truth that fairies are capable of such magic. The humor of clown play, by contrast, lies in the hubris of their transformational skills—say, Snout's confident portrayal of Wall. As a bumbling amateur, Snout undermines his role as a wall—frequently reminding audiences that he is in fact *not* a wall. The difference between these misrulers and mis-misrulers hinges on whether we are invited to laugh with them or at them.

We laugh with the fairies because they control the stage. Like Lords of Misrule or Vices, they take an active role in defining—and redefining—the rules of the game through *presentation*. Puck's pranks, like those of *Mankind's* Titivillus, rely on deceptive objects—the transformation of one object into another that makes a human actor doubt perception. Thus, Puck introduces himself as the very essence of misperception:

> I am that merry wanderer of the night.
> I jest to Oberon, and make him smile
> When I a fat and bean-fed horse beguile,
> Neighing in likeness of a filly foal;
> And sometimes lurk I in a gossip's bowl
> In very likeness of a roasted crab,
> And when she drinks, against her lips I bob,
> And on her withered dewlap pour the ale.
> The wisest aunt telling the saddest tale

Sometime for three-foot stool mistaketh me;

Then slip I from her bum. (2.1.43-53)

In the span of ten lines, he is a night wanderer, a filly foal, a roasted crab, and a three-foot stool. He can transform from the human to the animal to the insentient.[130] It would seem that his only essential quality is the creative deception. Of course, in these particular cases we must take Puck at his word. These are *representations* through *re*-telling, creative deceptions yet not quite deceptive creations since the formal act of *presentation* does not occur on stage. Even so, we understand that he is the play's quintessential crafter-in-performance, a master of *presentation* free to declare the very nature of what is or is not "fictionally true."[131]

We can see this ontological authority play out in the final scene. How were night scenes played during daylight hours? Tapers might be used to signify darkness. The hour could also be worked into a bit of dialogue, such as in the opening scene of *Hamlet*, where Barnardo observes that "tis now struck twelve" in his fictional world. But something quite different happens when Puck speaks directly to the audience and conjures the night through *presentation*:

Now the hungry lion roars,

And the wolf behowls the moon,

Whilst the heavy ploughman snores,

All with weary task foredone.

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[130] In 3.2, Puck pretends to be Lysander to fool Demetrius (and then Demetrius to fool Lysander).

[131] For "fictional truth" see Kendall Walton's *Mimesis as Make Believe: On the Foundations of the Representational Arts* (1990). Basically, he distinguishes between two forms of make believe: content-oriented and prop-oriented. Content-oriented make-believe is akin to mimetic play, generating a significant fictional world. In Walton's theory, these fictional worlds generate their own type of truths. Indeed, Walton's definition of "fiction" is that which is "true within a fictional world," and his theory of content-oriented play is intimately-concerned with the possibilities of fictional truths.

Now the wasted brands do glow

Whilst the screech-owl, screeching loud,

Puts the wretch that lies in woe

In remembrance of a shroud.

Now it is the time of night

That the graves, all gaping wide,

Everyone lets forth his sprite

In the churchway paths to glide;

And we fairies that do run

By the triple Hecate's team

From the presence of the sun,

Following the darkness like a dream,

Now are frolic. (5.2.1-17)

The repetition of the word "now"—a conventional Shakespeare deictic—functions like a temporal incantation, imposing the night upon spectators through performative utterance. Puck is given special license to lay the scene. Barnardo, bound to the fictional world of the opening scene of *Hamlet*, merely observes the scene's witching hour. Puck—on the other hand—*presents* the fictional world, throwing us—in an almost Heideggerian sense—into it. Shakespeare authorizes the space of the play's fiction, but it is Puck who gives it presence. This is the ultimate performative power of the fairies. The playwright crafts a play's plot or general plan, but the fairies are the masters of its ceremony, free to create its fictional truths *in situ* and *vivo*. The difference is akin to a written wedding script and the performative pronouncement

spoken by a minister ("I now pronounce you man and wife"). The latter is of a higher ontological order, a *bringing into being*.

Puck recalls for us the early modern view of drama as "presenting," as a form of play that *brings into being* particular identities. To a certain extent, all characters are bodied forth—via posture, position, relation, language, expression, etc.—on stage; yet the fairies here have a greater ontological authority over *presentation*. They are free to introduce new fictions into the play even as they also inhabit the role of narrative characters. The fairies' ontological status is thus different from that of other characters. The other characters remain captive within the mimetic and representative world of the game. The fairies are, in some respects, closer to what I have called non-character players, such as prologues. The fairies are unique, however, in that they are not excluded from acting and presenting within the play's fictional world. The fairies can remain in-character—or "in-game"—from one ludic world to the next because of their ontological status exists over and above a play's fictional world.[132] Helen Cooper has shown that his form of *presentation* derives from medieval playing:

> It never worried anyone that the person on stage might simply be a member of the acting company, as a Prologue; or an actor acting an actor, arguing over the play to follow; or God, or a personification of Avarice or Death; or that God might speak in sequence first to the audience and then to Noah; or that a Vice or Richard III might interact as readily with the audience as with the other characters. (73)

[132] An excellent example is Gower in *Pericles* who fills in the necessary details of the play, yet exists over and beyond its main action.

Shakespeare's late medieval audiences remained comfortable viewing drama-as-game, switching effortlessly from *presentation* to *representation* in ways that now seem almost post-modern:

> As the moral interlude developed over the course of the sixteenth century, such personifications increasingly turn into people, not Pride in the abstract but a person given to pride, but Shakespeare is still happy to bring Rumour and Time on stage as presenters. All these required audience complicity with their stage representation, a readiness to make-believe, and that was assisted by the extensive continuity of method from medieval to early-modern staging. (81)

This kind of ontological fluidity can be disorienting for audiences today, in part because they have been conditioned to think of metatheatricality as a result of postmodernity. Yet the fairies freely occupy the first, second, and third person, slipping routinely from the omniscient to the subjective. This ontological and narratological shiftiness is also on display in the final speech of *A Midsummer Night's Dream*, when Puck breaks the fourth wall, shifting his address from the fictional world of the play to the audience directly:

> If you pardon, we will mend.
> And as I am an honest Puck,
> If we have unearnèd luck,
> Now to 'scape the serpent's tongue,
> We will make amends ere long,
> Else the Puck a liar call.

So, good night unto you all.

Give me your hands, if we be friends,

And Robin shall restore amends. (5.2.8-16)

In this final farewell, the actor seems to occupy three roles at once: actor, Fairy, and Epilogue. The Norton edition renders this final speech in bold as "Epilogue" (a description not found in Q1 or F1). This emendation marks off a ludic frame, separating the play's "fictional" world from the "real" world of the audience who give their "hands" in applause. But what are we to make of the Puck who cannot be assigned to one world or the other? Does the actor who delivers this "epilogue" deliver it *as an Epilogue* or as Puck or both?[133] Apparently, Puck is cognizant of the playworld's fictionality. By means of personnage, Puck imprints on the actor and the actor imprints on Puck. His "we" suggests that he is even aware of his role as an actor within the Chamberlain's Men. Such meta-awareness is a vestige of the medieval play-as-game, with its self-reflexive detachment from mimetic storytelling. Moreover, it reminds us that the fairies undermine the distinction between actor and character, embodying the medieval concept of personnage.

The fairies are able to *present* the play's fictions from the position of the audience. Witness their ability to become invisible observers (in the vein of Titivillus). When Demetrius and Helena enter the forest, Oberon decides to observe them by becoming invisible: "But who comes here? I am invisible, / And I will overhear their conference" (2.1.186-7). Unlike Puck's declaration of night, no lengthy incantation is necessary here. Oberon simply declares himself invisible. The audience

[133] In early modern drama, the words "Epilogue" and "Prologue" describe a character who delivers the introduction or conclusion (not just the speech itself).

is expected to accept this fictional truth—the effect for the fictional characters is indisputable. When Oberon says, "I am invisible" he is not merely delivering an inner monologue of his thoughts—like say Hamlet or Claudius. He is authoring his own ludic ontology. Puck demonstrates a similar type of authority in the face of the mechanicals' play rehearsal. Like the servants of *Fulgens and Lucres*, he weighs whether or not to join in their world:

> What hempen homespuns have we swagg'ring here
>
> So near the cradle of the Fairy Queen?
>
> What, a play toward? I'll be an auditor—
>
> An actor, too, if I see cause. (3.1.65-8)

Puck is at a special remove—free to be "auditor" or "actor" for his own peculiar ends.

The ontological fluidity of *A Midsummer Night's Dream*'s fairies can be traced directly to the medieval Vice. The legacy of the Vice had a significant impact on Shakespearean theater. In the first chapter, I showed how the Vices in *Mankind* commanded the attention of audiences, coercing them to sin within the playworld. The Vice works his seductive magic on characters and audiences alike, moving with ease across the boundaries of ludic worlds. He is a ringmaster, a scene-setter, and a reality disruptor—Weimann and Bruster call the Vice a "transgressive master of ceremonies":

> ...an agent of theatricality who easily crossed the boundary between plot and complot, emplotment and manipulation. Constantly drawing and crossing the line between representation and showmanship, this entertainer must have

> displayed his consummate grasp of the arts of performance as a great game, blending even in the symbolism of his role a mixture of appropriation and dispossession, of selfish ambition and good fellowship turning sour. Small wonder when the bifold order in this potent agent of liminality lived on, to be remembered and uniquely inscribed in Shakespeare's plays... (48)

The Vice plays a meta-ludic role, alternating between what Weimann and Bruster felicitously call "representation" and "showmanship." "Showmanship," in particular, gets at an ontological aspect of play that methexis is prone to overlook. Like Jean Alter's concept of a "performant function," it picks up on playing as a type of embodied practice (or skill), as much a *doing* as a *being*.[134] But, "showmanship" also has a decidedly commercial feel, which makes it amenable to materialist critique.

Skillful performance is at the heart of any entertainment, but "showmanship" points to the *selling* of illusion. The showman is part performer and part salesman. She pitches the activity of playing to the audience, encouraging them to "buy into" the game even as she reminds the audience that they are attending a commercial performance. But this is not to say that the skillful player always aims to create a believable fiction. She uses showmanship to seduce the skeptic—or in the worst

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[134] My own perspective on mimesis/methexis is influenced by Jean Alter's excellent *A Sociosemiotic Theory of Theatre* (1990). Alter describes theater as having a "referential" and "performant" function:

> When it refers to an imaginary story, theatre is involved in a process of communication; it fulfills a *referential function*, carried out with signs that aim at imparting information. From the perspective of a semiotic theory, this referential function, or referentiality, clearly constitutes the central feature of theatre. But theatre is also a public event, a spectacle or a show, attempting to please or amaze the audience by a display of exceptional stage achievements, that is special *performances*. In that sense, like sporting events or the circus, theatre serves what I shall call the *performant function*: it satisfies our natural desire to achieve or witness something extraordinary. Such *performances* are not communicated with signs; they are experienced directly; they fall outside the operations of semiosis. However, because the performant function coexists with the referential function, and interacts with it, it cannot be disregarded by a semiotic theory of theatre. Indeed, taken together, references and performances define the dual appeal of all theatre. (32)

cases, the spoilsport—to *play*. A skilled magician does not make her audience "believe" in magic; she can, however, draw spectators into the worlds of magical possibility. Coleridge called this the "suspension of disbelief" because it requires the viewer temporarily to let go of deeply held convictions about reality. It is worth noting, however, that realism is not a prerequisite for such a suspension of disbelief. In matters of seduction, the will to play, not mere trickery or deceit, are what count.[135] Paradoxically, seducing the skeptic requires, at times, a willingness to *foreground* mimesis-as-illusion, to put the lie to fiction. The skeptic, or less charitably the "critic," may reject play that is too familiar, too predictable, or simply poorly executed. She becomes hardened against the familiar, has a self-enlightened disposition of self-importance, a vanity whose greatest vulnerability is self-validation. This sense of superiority is both an asset and a liability, both a badge of pride and a source of disappointment to the extent that the skeptic comprehends the act before it is enacted. It is the showman's job both to acknowledge the critic's sophistication *and* to allure that same critic by means of *metaplay*—tacit words, winks, and nods that seduce even as they flatter.

On the Shakespearean stage, one such nod occurs when an actor breaks character, momentarily exchanging his role for that of the critic. This practice critically aligns him with the audience, a metatheatrical practice Weimann and Bruster call "personation":

> the "secretly open" exposure of the actor behind the dramatic role and its persona. Personation privileges the *making of* the mask, the *skill* and the *show*

[135] Graham Harman calls this type of seduction "allure," when he writes of the way objects convince us to observe, use, and play with them.

> of playing the role of another. As a presentational practice, it falls back on the dramaturgy of "A juggling trick - to be secretly open."[136] (Weimann and Bruster 5)

Personation exposes the actor, draws him out from under the cover of mimesis. We see this when *A Midsummer Night's Dream* foregrounds the fairies and clowns as actor-critics.

If the fairies are the play's pre-eminent personators, deftly balancing mimesis and methexis, the clowns personate too. Yet, at the level of the play, at least, they are merely overweening amateurs, aspiring pretenders in the worst sense. Nowhere is this more clear than in the metaplay of *Pyramus and Thisbe*, which Greenblatt calls a parody of "amateur theatrical entertainments, which are ridiculed for their plodding ineptitude, their naïveté, their failure to sustain a convincing illusion" (*Will in the*

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[136] The meaning of the word "juggling" in the medieval and early modern period is every bit as complicated as words like "play" and "ludus," which I discuss in chapter one. Briefly, "juggling" was more likely to refer to magic tricks than object throwing. Here is Phillip Butterworth, whose *Magic on the Early English Stage* (2010), has much to say on this topic:

> The most consistently used words to describe the production of magic throughout this period [1100-1600] are *juggler* (for the exponent) and *juggling* (for the activity). The term *juggling*, however, has been referred to as 'the lexicographer's nightmare', for this meaning and its creator, the *juggler*, are perhaps the least understood and most misunderstood words used to describe the creation of acts of magic. In the twenty-first century, the term *juggler* is applied to that kind of entertainer who throws up objects from one hand to another in a continuous rhythmical sequence without dropping them to the floor… [early modern] jugglers both performed sleight of hand and juggled objects. Evidence concerning the activities of medieval jugglers in England that identifies the nature of juggling overwhelmingly, if not exclusively, refers to conjuring or illusion as it is understood today. (3)

Here is Thersites, in *Troilus and Cressida*:

> Diomedes: Fo, fo! Come, tell a pin. You are forsworn.
> Cressida: In faith, I cannot. What would you have me do?
> Thersites: [aside] A juggling trick: to be secretly open. (5.2..22-4)

"Juggle" and "trick" share connotations of sex (e.g. "bed trick," "turning tricks," "*meretrix*") and magic. The notion of being "secretly open" suggests that Cressida's sexuality is open or available but only to a limited audience—one she believes to be only Diomedes yet which turns out to include everyone in the theater. Here, like in many of his plays, Shakespeare stacks multiple layers of voyeurs. The audience watches Thersites who watches Troilus and Ulysses who in turn watch the secret tryst of Diomedes and Cressida. The secret is open to all within earshot. A full reading of Thersites's line then extends beyond the play itself to the audience which are wise to Cressida's secret betrayal. It is significant then that Thersites does not enter with Troilus and Ulysses. He transcends the mimetic divide speaking from outside the scene directly to the audience.

World 50). The fairies are secretly open; the clowns couldn't keep a secret to save their lives. The unsophistication of their skills is laid bare in the play of *Pyramus and Thisbe*; their *showmanship* lies open to mockery by even the most lightweight of critics.

The clowns' performance might warrant pity if not for the fact that we, as audience members, recall that professional actors are playing amateur ones, expert showmen are parodying country hucksters. How better to draw a sharp distinction between the Lord Chamberlain's Men and the cycle play amateur?[137] Of course, this aesthetic one-upmanship might both appeal to and dismay the theater audience, who probably feel ambivalent, simultaneously amused and disgusted by the cheeky commentary of the nobles.

Even at the height of their hubris, the mechanicals retain an endearingly naive concern for the sensibilities of their audience. This is perhaps best epitomized by their irrational fear of terrifying the most delicate members of the audience—especially any women present, who they fear may be frightened by the presence of lions and violence. To assure them of their safety, Bottom proposes the addition of a prologue:

> I have a device to make all well. Write me a prologue, and let the prologue seem to say we will do no harm with our swords, and that Pyramus is not killed indeed; and for the more better assurance, tell them that I, Pyramus, am not Pyramus, but Bottom the weaver. This will put them out of fear. (3.1.15-20)

[137] See Bernard Spivack and Ann Righter on the way Shakespeare's play intentionally diverge from medieval drama.

Bottom is incomparably pompous but his heart is in the right place. He is a showman who doesn't recognize the weakness of his own acting.[138] For Bottom, the only type of player who could break the audience free from his illusionary rapture is a prologue—someone who stands outside the fictional frame altogether.

The Lion's part presents a similar problem. Bottom worries that Snug's Lion might be a little too convincing so he comes up with a suitable solution:

> Nay, you must name his name, and half his face must be seen through the lion's neck, and he himself must speak through, saying thus or to the same defect: 'ladies,' or 'fair ladies, I would wish you' or 'I would request you,' or 'I would entreat you not to fear, not to tremble. My life for yours. If you think I come hither as a lion, it were pity of my life. No, I am no such thing. I am a man, as other men are'—and there, indeed, let him name his name, and tell them plainly he is Snug the joiner. (3.1.32-40)

Skillful personation relies on an inside reference, a knowing glance or a wink. It subtly breaks the illusion of playing while upholding the spirit of the game. The humor of the clowns is the way they over-personate, openly breaking with all pretense of illusion and scuttling any possibility of mimetic realism. They present only to undermine *presentation*. The play of *Pyramus and Thisbe* is not "secretly open;" it is exploded like an ontograph.

The mechanicals can keep no secrets. In his part as Prologue, Quince constructs (and deconstructs) the scene through a lengthy list that brings into being each of the mechanical's parts:

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[138] Theodore Leinwand ("'I believe we must leave the killing out': Deference and Accommodation in *A Midsummer Night's Dream*") argues, among other things, that the aspirations of the mechanicals ("to be made men") are not all that different from those of the Lord Chamberlain's Men.

Gentles, perchance you wonder at this show,

But wonder on, till truth make all things plain.

This man is Pyramus, if you would know;

This beauteous lady Thisbe is, certain.

This man with lime and roughcast doth present

Wall, that vile wall which did these lovers sunder;

And through Wall's chink, poor souls, they are content

To whisper; at the which let no man wonder.

This man, with lantern, dog, and bush of thorn,

Presenteth Moonshine. For if you will know,

By moonshine did these lovers think no scorn

To meet at Ninus' tomb, there, there to woo.

This grizzly beast, which 'Lion' hight by name... (5.1.131-8)

Like a dumb show, Quince's speech is a *presentation* of the play's major roles—"Presenteth Moonshine"—and actions. At the same time, it functions as a series of performative utterances, a string of "this" declarations that creates the play's characters. Each declaration brings another character into being. Like Puck's repetition of "now," they are an attempt at performative language. The difference, of course, is that Quince's declarations are patently ludicrous, a Latour litany that convenes a cast of the absurd. The nobles—and the theater audience—cannot help but remain skeptical.

The way that Puck and Bottom set scenes stimulates very different levels of skepticism. Whereas Puck deftly conjures the night with descriptive language (and

perhaps a little fairy magic), Bottom's version of creating night is comically over-the-top. Puck is a master of *poïesis*; Bottom, at his best, appears facetious:

> O grim-looked night, O night with hue so black,
>
> O night which ever art when day is not;
>
> O night, O night, alack, alack, alack,
>
> I fear my Thisbe's promise is forgot.
>
> And thou, O wall, O sweet O lovely wall,
>
> That stand'st between her father's ground and mine,
>
> Thou wall, O wall, O sweet and lovely wall (5.1.168-74)

Bottom's melodramatic O's—reminiscent of Hieronimo's part in *The Spanish Tragedy*—are matched with obviously banal descriptors: "night with hue so black," "which ever art when day is not," "sweet and lovely wall." Whereas Puck conjures the night with a vivid cast of creatures (lions, wolves, ploughmen, screech-owls, sprites, and fairies), Bottom fumbles for even the most basic of descriptors: night is merely "black" and what "day is not." To borrow a modern maxim, "It's so bad it's good."

Yet it requires skill to imitate bad acting. "Pyramus and Thisbe" is an entertaining failure because it strokes the audience's ego, inviting everyone to play the part of the critic. The humor of "Pyramus and Thisbe" hinges on its amateurity, its unintended conversion of mimetic realism into the carnivalesque. That the play is self-critical is less a sign of its sophistication than its naiveté. No wonder that Egeus expresses his skepticism before it even begins:[139]

[139] The Norton Shakespeare follows F1 giving these lines to Egeus. (Q1 attributes them to Philostrate.) See Barbara Hodgdon's "Gaining a Father: The Role of Egeus in the Quarto and Folio."

A play there is, my lord, some ten words long,

Which is as 'brief' as I have known a play;

But by ten words, my lord, it is too long,

Which makes it 'tedious'; for in all the play

There is not one word apt, one player fitted. (5.1.61-65)

The "words" and "players" are ill-fitted, sustaining their material fictions one moment and dismantling them the next.[140] Indeed, fitness is a recurring theme in the play. During the initial casting, Quince stresses that everything has been done to assure the best fit, "Here is the scroll of every man's name which is thought fit through all Athens to play in our interlude" (1.2.4-5) and "I hope here is a play fitted" (1.2.54). Quince, dependent on a crowd of amateurs, struggles to "fit the person to the job." Meanwhile, Bottom, insisting that he is fitted to play every character, hopes to play the roles of Pyramus, Thisbe, and the Lion all at once. Bottom's overconfidence contrasts humorously with his co-workers' anxiety about pulling off even the most basic roles. Flute, for example, complains that his beard will keep him from playing a woman (1.2.39). Snug worries that the Lion's non-speaking part will be too much for him to remember (1.2.55). How does one cast a bunch of simpletons? The answer, it would seem, is to match the simpleness of their minds to the simpleness of their parts. If the actors are too thick to imitate humanity, perhaps they can handle the non-human (Lion) or the inanimate (Moonlight and Wall).

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[140] It is worth noting that medieval and early modern people often understood words as material entities. As Sara Beckwith points out, Titivillus was said to carry the words of clerics in a heavy sack ("Language Goes on Holiday" 118). See Judith H. Anderson's *Words That Matter: Linguistic Perception in Renaissance English* and Gina Bloom's *Voice in Motion: Staging Gender, Shaping Sound in Early Modern England*.

Even still, the mechanicals manage to bungle their transformation. That the very concept is beyond Quince is evident in his malapropism, mistaking "translated" for "transformed." If the skill of the fairies is their ability to sell us on the unbelievable, the mechanicals entertain us by making the possible into the preposterous. "Pyramus and Thisbe" is, in almost equal measures, an intentionally and unintentionally anti-realist interlude; it is purpose-built to be torn down, constructed only to be deconstructed. In Greenblatt's words:

> When in *A Midsummer Night's Dream* the thirty-year-old Shakespeare, drawing deeply upon his own experiences, thought about his profession, he split the theater between a magical, virtually nonhuman element, which he associated with the power of the imagination to lift itself away from the constraints of reality, and an all-too-human element, which he associated with the artisans' trades that actually made the material structures—buildings, platforms, costumes, musical instruments, and the like—structures that gave the imagination a local habitation and a name. He understood, and he wanted the audience to understand, that the theater had to have both, both the visionary flight and the solid, ordinary earthiness. (*Will in the World* 53)

Shakespeare uses "Pyramus and Thisbe" to draw these two poles apart. The mechanicals focus the audience's attention on the materials of stagecraft, bringing the media of playing to the foreground. Exposing the materiality of the stage does more than deflate the fictional world of the play. It also draws a distinction between Shakespeare's drama and the "old" drama of the divinity. The old cycle drama used the skills of the craft guilds to tell the biblical story in the service of the Lord, but the

new drama could bear no idols. It celebrated the talents, skills, and crafts of men for their own sake. In the absence of a religious drama, early moderns had to draw a new distinction between the earthly and the lofty. Bottom gives early modern acting a bottom to stand on, a firmament (and a fundament) for the material of the stage. William Morris, the famous leader of the 19th-century Arts and Crafts movement, once said, “You can't have art without resistance in the materials." The mechanicals reveal the simple materials of the Shakespearean stage, making audiences acutely sensitive to the art and skill of play.

The Shakespeare Game: Processing and Remediating Shakespeare in the 21st Century

> "What kind of media phenomenon is 'Shakespeare'? If there is one consensus in the burgeoning scholarship on Shakespeare and media, it is that Shakespeare is a ubiquitous media phenomenon, at least in English." (Sterne 319)

> "Shakespeare might turn in his grave at the bare idea of it, but *Macbeth* is the very stuff of microcomputer adventure"—Manual for *Macbeth: The Computer Adventure* (1986)

If we subscribe to Morris's belief that "You can't have art without resistance in the materials," then the creation of art depends on the artist's ability to use her materials skillfully in the face of their particular resistances and affordances. Shakespeare produced a form of art—we recognize this fact by designating his *oeuvre* as a central focus of both literature and performing arts. But must his work—or that of the performing arts more generally—be confined to a particular medium?

Given that Shakespeare's plays have been "translated" into all sorts of media, it would be difficult to make the case that they require any particular materials for their performance. Indeed, I would argue that Shakespeare's media indifference is the very source of the art of his plays. The performance of Shakespeare's plays constitutes an art precisely because each material put to the purpose resists in a unique fashion, and because every Shakespeare performance is unique to the people, time, place, and material circumstances of its making. Shakespeare productions participate in the game of re-making Shakespeare in every fashion of media.

And yet, even this four-hundred-year-old process has not exhausted Shakespeare's plays, if only because they are not *just* art. They are, paradoxically,

even richer: for the Shakespeare media landscape encompasses a whole sea of *not art*. What we refer to as "Shakespeare" is in may respects closer to an ecosystem, a "social text" of signifiers.[141] You can visit some of the creatures of this ecosystem in the Folger Shakespeare Library gift shop in Washington D.C., where you will see on display Shakespeare t-shirts, ties, dinner mints, coffee mugs, action figures, necklaces, and even marmalade. And yet even this gift shop gathering represents a small niche of the larger Shakespeare media empire, an empire that is, unsurprisingly and increasingly, attracting the attention of scholars—witness that hallmark of legitimacy in the humanities, the Cambridge Companion (*The Cambridge Companion to Shakespeare and Popular Culture*, 2007).[142]

Shakespeare is now more complexly mediated than ever, extending far beyond the familiar juxtaposition of "stage" and "page." If the short title catalog included the 20th century, then we would be compelled to include Shakespeare in radio, film, television, websites, and "the very stuff of microcomputer adventure" (*Macbeth: The Computer Adventure*). "Shakespeare media studies," which spans across textual studies, film studies, and digital studies, ask us to consider how new media adapt and change his work. I take up this matter in what is to follow, but I also consider the way that Shakespeare's works are adapted to new media for the very purpose of demonstrating and validating those media.

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[141] The concept of a Shakespearean "social text" has a particularly rich history in textual studies. Beginning with the work of D.F. McKenzie and Jerome McGann, textual editors have questioned the legitimacy of creating a definitive edition that captures "authorial intention."

[142] See, among other titles, *Shakespeare and the Moving Image* (1994), *Shakespeare and Appropriation* (1999), and *Borrowers and Lenders: The Journal of Shakespeare and Appropriation* (2005-present).

Media archaeologist Jonathan Sterne has coined the phrase "Shakespeare processing" to describe this phenomenon across a variety of formerly new media:

> In one way or another, photography, lithography, halftones, phonograph records, telephone concerts, films, radio plays, stereo vision devices, television, microfilm, hypertext, and video games all lay claim to Shakespeare, especially in their more experimental, emergent or divergent forms, or at moments of phase change. In these moments, media often present their technicity to audiences through an act of Shakespeare processing, as I will call it. (321)

Shakespeare processing is the use of Shakespeare as a familiar cultural touchstone to demonstrate the potential and limitations of new media. In other words, Shakespeare is a—if not *the*—cultural benchmark for assessing the significance of emergent media. His works are deployed as a test mule for their expressive potential, the tech industry's cultural performance test. If you want to demonstrate what a particular medium does to its content, toss some Shakespeare in the hopper.

> When technical media emerge or go through a change of phase, quite often—though not always—one of their early tests is as Shakespeare-processing machines. In other words, people use Shakespearealia to prove that media can mediate at the moments of their emergence or transition. (322)

"Shakespearealia" is Sterne's portmanteau of "Shakespeare" and "realia." He uses the term to describe "materials that are used to test, legitimize, or celebrate particular modes of circulation," with the important caveat that "Shakespearealia do not necessarily refer back to a larger mass of work from which a fragment is detached or

remediated; they are more likely to refer to the mediatic processes through which they pass" (321-2). The end result is a Shakespeare artifact that lends cultural significance to an artifact's technicity, helping "users to imagine new media forms as themselves great human achievements" (340).

According to this scenario, Shakespeare is an authoritative cultural yardstick of the technical realm that includes other playful artisans, inventors, and tinkerers. His works function so well as a media test because they are adaptable to any use or occasion. The medium, of course, makes a difference in both the way we play and interpret Shakespeare—as media theorist Marshall McLuhan famously said "the medium is the message." Unsurprisingly, digital Shakespeares are creating new questions.[143] And doing so even as they are changing the *public* face of Shakespeare. Lauren Shohet, Barbara Hodgdon, and Laurie Osborne have examined the ways YouTube has changed our relationship with Shakespeare.[144] Osborne, in particular, connects YouTube with Shakespearean film studies, positing that what follows "Shakespeare on film" is "Shakespeare on screens," where "the technologies that

[143] See, for example, the digitally-focused issue of *Shakespeare Quarterly* 61.3 (2010). For book-length anthologies, see Carson and Kirwan *Shakespeare and the Digital World* (2014), and Laura Estill, Diane Jackacki, and Michael Ullyot's *Early Modern Studies after the Digital Turn* (2016). The list of early modern digital humanities projects is constantly growing. Some of the more prominent projects include the Internet Shakespeare Editions (http://internetshakespeare.uvic.ca/), Digital Renaissance Editions (http://digitalrenaissance.uvic.ca/), the Map of Early Modern London (https://mapoflondon.uvic.ca/), the TCP-EEBO project (http://www.textcreationpartnership.org/tcp-eebo/), the Early Modern London Theaters Database (http://www.emlot.kcl.ac.uk/), the Records of Early English Drama Patrons and Performances (https://reed.library.utoronto.ca/), the Database of Early English Playbooks (http://deep.sas.upenn.edu/), Shakespeare's Staging (http://shakespeare.berkeley.edu/), Lexicons of Early Modern English (http://leme.library.utoronto.ca/), the Digital Scriptorium (http://www.digital-scriptorium.org/), the English Broadside Ballad Archive (http://ebba.english.ucsb.edu/), the Lost Plays Database (https://www.lostplays.org/), Shakespeare Documented (http://www.shakespearedocumented.org/), and Visualizing English Print (http://graphics.cs.wisc.edu/WP/vep/).

[144] See Shohet "YouTube, Use, and the Idea of the Archive" (2010), Hodgdon "(You)Tube Travel: The 9:59 to Dover Beach, Stopping at Fair Verona and Elsinore" (2010), and *Borrowers and Lenders: The Journal of Shakespeare and Appropriation* 10.1 (2016).

enable these encounters, enrich them, and render them all-too-swiftly obsolete will continually influence Shakespearean film in the twenty-first century" (49).[145] The very phrase "Shakespeare on film" is already anachronistic given that film is now more likely to be found in an archive than a cinema. Shakespeare has already left film behind for Blu-Ray discs and streaming video services. In sum, the Bard is being—and always has been—"remediated."[146]

Of course, as Osborne herself points out, "Shakespeare on screens" goes beyond moving images. For more than three decades since *Macbeth: The Computer Adventure* (1986), the Bard has been mediated in video games, a significant yet often overlooked development in Shakespeare's media history.[147] To some extent, these games exist outside what Martin Orkin calls the "Shakespeare metropolis," the

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[145] See Osborne's "iShakespeare: Digital Art/Games, Intermediality, and the Future of Shakespearean Film" (2010).

[146] For the ways new media "remediate" older forms, see Jay David Bolter's and Richard Grusin's *Remediation: Understanding New Media* (1998). Also, see Henry Jenkin's *Convergence Culture* (2008) for the ways in which stories are increasingly told across multiple platforms through "transmedia" storytelling.

[147] There has been a large increase in Shakespeare games due to the explosive growth of the games industry. In the mobile market (not including computers or consoles), 750 new games launched every day in 2014 (Graft). Many of the earliest Shakespeare video games were interactive fiction—sometimes called "adventure games"—including *Macbeth: The Computer Adventure*, *Castle Elsinore* (Temple 1983, MS-DOS) and *Hamlet- The Text Adventure* (Robin Johnson 2003, browser/javascript). These Shakespeare interactive fiction games were later eclipsed in the 1990s by point-and-click games. For examples of these, see *Hamlet: A Murder Mystery* (Pantheon/Castle Rock Entertainment 1997, Windows), *The Seven Noble Kinsmen: A Shakespeare Murder Mystery* (Little Cloud 2005, browser), *Hamlet, or the last game without MMORPG features, shaders and product placement* (mif2000 2010, Windows/Android/iOS), Most Romantic Tales Romeo (Baby Eish 2009, Windows), *The Chronicles of Shakespeare: Romeo and Juliet* (Daedalic Entertainment 2011, Windows), *The Chronicles of Shakespeare: A Midsummer Night's Dream* (Daedalic Entertainment 2012, Windows), and *Elsinore* (Golden Glitch 2016, Windows/Mac/PC).

Shakespeare was also translated into role-playing games (RPGs), such as *Ruins of Cawdor* (Sierra Online 1995, MS-DOS) and *Arden: The World of Shakespeare* (2007), an MMO created by Edward Castronova and based on *Neverwinter Nights* (BioWare 2002, PC/Mac/Linux). Lastly, the action RPG *Mass Effect 2* (Bioware 2010) makes a passing reference to a production of Hamlet, a humorous Easter egg that hinges on the disparity between overly dramatic portrayals of *Hamlet* and the seemingly emotionless species known as Elcor.

For more academic writing on Shakespeare video games, see Michael Best's "Electronic Shakespeare: Which Way Goes the Game?" and Gina Bloom's "Videogame Shakespeare: Enskilling Audiences through Theater-Making Games."

professional communities authorized to produce, study, or teach Shakespeare.[148] For even Shakespeare games that have garnered some degree of commercial or institutional authority typically invite amateurs to cultivate a relationship of "playing with" Shakespeare. This represents an opportunity to support, but also to resist established views about Shakespeare and his significance in the 21st century.

Shakespeare games, then, represent an unusual nexus: they are commercially-designed games for creating non-commercial Shakespeare performances at home. These performances can be entirely anonymous—as in the case of an online digital avatar—or performed in front of a trusted group of friends—perhaps with libations for encouragement. These home Shakespeare productions differ notably from school or community productions for public consumption (and ultimately judgment). Shakespeare games lower the stakes of playing, encouraging players to approach Shakespeare on their own terms, and so to a greater or lesser degree they mitigate the influence of the Shakespeare metropolis. Like home and library-based Shakespeare reading groups, Shakespeare games can take place at the smallest community scale as living room Shakespeares.

Living room Shakespeare games can seem distant from theatrical play until we remember that plays themselves derive from games and use games to orient the craft of acting. As we have seen, a goodly portion of any Shakespeare production is predicated on games that are embedded in the activity of acting. Tom Bishop describes metatheatrical games embedded in Shakespeare's plays, pointing in

[148] Both Osborne and Orkin expand Shakespeare studies to consider local communities, demonstrating how amateur Shakespeare productions do significant cultural work. They are among a growing body of scholars examining amateur Shakespeare that includes Katherine Steele Brokaw, Niels Herold, Andrew James Hartley, and Craig Dionne.

particular to Malvolio's letter-reading scene (2.5) in *Twelfth Night*.[149] Sir Toby, Sir Andrew, Maria, and Fabian, are clearly in control from a fictional perspective. They craft and drop the letter—an early modern prop that nearly always portends a significant reaction. And they join with the audience to watch the trick unfold from a distance, taking in Malvolio's gullible response. Yet, from the perspective of playing, it is actually Malvolio who wields the most stage authority in a game that takes place alongside the scene's fictional content:

> For the task of his spies — not to be seen — gives their victim an almost absolute authority to destroy their theatrical effectiveness precisely by the threat of his seeing them: they must submit to the necessity of remaining invisible, an imperative which reduces them to automata desperately improvising ways to stay hidden even while the script and the comic bent of the scene require them to risk breaking cover. A good lively realization of the scene demands this perilous balance between exposure and concealment, repeating in a different key that of Malvolio himself, while, as it were, inverting it. And over this aspect of the scene the eye of the actor Malvolio can exercise an almost Olympian "austere regard of control" (2.5.66), as he puts it. All he has to do is threaten to look and his tormentors must scramble, panic-stricken, for whatever cover they can find or feign. The scene played to its maximum potential dares the exquisite knife-edge of this contest of powers to humiliate and expose. It works best when it risks most, and convinces the

[149] See "Shakespeare's Theater Games" (2010) where he points to theatrical games in every genre including histories (*1 Henry IV* and *Richard III*), comedies (*Much Ado, The Taming of the Shrew, Love's Labour's Lost*, and *The Tempest*), and tragedies (*Hamlet* and *King Lear*).

audience to accept and enjoy the game of that risk. ("Shakespeare's Theater Games" 74)

Malvolio may be the one being gulled, but he also controls the action of the scene. He has the potential to control the other players by threatening to disrupt the play's mimetic fiction. The tension of the scene lies in the possibility of Malvolio "going rogue," breaking script and taking the play off in an unintended direction.

Bishop describes the types of metagames within Shakespeare's plays, but it is also worth considering that play productions themselves are responsive to a larger ludic competition at the level of competing companies and productions. Still larger is the game of re-interpreting a 400-year-old text in artistically and/or commercially viable ways. A good production can illuminate those parts of Shakespeare that appeal to something like a universal human experience, while also appealing to the precariousness of current affairs, whether local or global.

With some imagination, Shakespeare's plays are amenable to any kind of stuff because play has no inherent medium. Phenomenologically-speaking, play is, first and foremost, about relating with objects through playfulness. In the first chapter, I argued that medievals viewed games as activities rather than distinct commercial objects or sets of objects. Shakespeare's plays were informed by this notion of drama-as-game, or drama-as-activity for the sake of playing *with stuff*. Like chess—that exists in wood, marble, and pixels—Shakespeare is a game whose remediation spans centuries, whose longer media history cannot be contained by stage, page, or pixels. The long history of staged Shakespeare exists comfortably alongside "screened"

Shakespeare. Play traverses time, place, and media. The art is in the craft of the making.

Each generation has crafted new Shakespeares, using current techniques and media to alter the horizon of expectations.[150] Indeed, Shakespeare's works survive precisely because they are so amenable to games of translation and transformation. This is the viewpoint espoused by Sarah Ellis, the Digital Producer for the 2013 Royal Shakespeare Company (RSC) production of *A Midsummer Night's Dream*: "We are always looking at interpreting and innovating Shakespeare and have done that for the past 50 years. And without innovating Shakespeare's text, we won't be able to keep Shakespeare alive today." The RSC has been keeping Shakespeare's *A Midsummer Night's Dream* alive since 1962; the 2013 production, dubbed *A Midsummer Night's Dreaming*, was their 40th production of the play.

A Midsummer Night's Dreaming was presented in two very different realms. A traditional actor-led production staged the play outdoors over several nights. Unlike traditional productions, however, audiences were encouraged use their cell phones to capture and share the event in progress on social media. The RSC partnered with Google to host the event, an opportunity for the tech company to demonstrate the

[150] The concept of a "horizon of expectations" comes from reception theory, namely Hans Robert Jauss's *Toward an Aesthetic of Reception* (1982). For Jauss, a work's distance from the horizon of expectations orients readers' reactions. If a work exhibits no significant changes from the expectations of the reader, the work is predictable. Jauss calls these generic works "culinary" or "entertainment art." In this category, we might include modern-day Hollywood blockbusters, AAA video games, and pop music. According to Jauss, we enjoy activities that push the boundaries of our expectations. The histories of literature and games are populated with those works that redefined genres, the archetypes that establish new artistic possibilities. The works that are left out of those histories are either too generic—not worthy of note—or too avant garde—so alien that they have no discernable relation to what came before.

Google+ social network that had launched in 2011. The result was equal parts outdoor theater and social media tech demo.

Fig. 21 Click to view a promotional video for A Midsummer Night's Dreaming (2013), a production through a partnership between the Royal Shakespeare Company and Google Creative Lab.

Click to view a behind-the-scenes video of A Midsummer Night's Dreaming.

The production's use of the Google+ platform went beyond merely hosting content. The RSC production also engaged digital spectators by creating an online play community. In addition to Shakespeare's familiar characters, actor-writers portrayed an all-new cast of interlocutors. Shakespeare in-jokes, memes, and seemingly unrelated humor spilled together into a digital playspace alongside the traditional production.[151] Puck picked a fight with Billy Shakespeare, the bear from *The Winter's Tale* showed up, and audiences got to deliver their own one-liners. All-new dramatic subplots unfolded as old and new characters interacted—both with each other and the general public. Humorous spinoffs took a cast of digital avatars in new and unforeseen directions.

Below is a transcription of all the character lines from the RSC production, including audience interactions from across the globe. Click on any character to see how they interacted with audiences, improvising new plots, jokes, and heckles.

Fig. 22 **Original Characters from A Midsummer Night's Dream on Google+**	**New Characters in the RSC Production on Google+**	**Other Google+ Accounts**
• **Bottom** • **Cobweb** • **Demetrius** • **Egeus** • **Flute** • **Helena** • **Hermia** • **Hippolyta** • **Lysander** • **Oberon** • **Peaseblossom** • **Philostrate** • **Quince** • **Robin Goodfellow**	• **Abbess Volumna** • **Antiope - Hippolyta's Maid** • **Baron Beagle** • **Beagle The Bellows Maker** • **Bear** • **Bernard Hermes (Dr.) - Apothecary** • **Billy Shakespeare** • **Bottom's Mum** • **Brayden Hucknall - Philostrates' Assistant** • **Changeling**	• **Athenian Mercury** • **Cordwainer's Arms** • **Fairy World** • **Knight's Herald** • **Mechanicalistics** • **Nunnery**

[151] A playspace is a location, possibly virtual, set aside for the purpose of play. In *Homo Ludens*, Huizinga describes a "magic circle" as a "temporary world within the ordinary world, dedicated to the performance of an act apart." More recently, Edward Castronova has defined the magic circle as a porous "membrane" that encapsulates virtual worlds.

• **Snout** • **Snug** • **Starveling** • **Theseus** • **Titania**	• **Cordwainer** • **Cowslip - A fairy** • **Dorian's Organ** • **Duke's Oak** • **Mrs. Egeus** • **Evil Weaver** • **Flower Bed** • **Forester** • **Hercules** • **Justin Snout** • **Mark Parsons - Pub Landlord** • **Mrs. Snug** • **Ophelia - Lysander's Little Sister** • **Peter Bundle** • **Phoebe - The Moon** • **Tarleton Dozen - The Baker**	

Fans posted play footage, behind-the-scenes photographs, and live reactions to the plays using a common hashtag: #dream40. Between shows, a variety of materials trickled out in the form of fictitious articles, videos, comics, and memes. The result was a digital carnival, more like a game than a traditional production. Spectators were encouraged to pull out their mobile phones to record, remix, and speak back to the event. At the center was Robin Goodfellow—the early modern trickster turned internet troll—patching together the onstage and online fictions.

Puck was the natural interlocutor for such a mashup of mimesis and methexis, gliding effortlessly across the "real," virtual, and fictional. Witness his interaction with spectator Ben Spiller (Artistic Director of the 1623 Theatre Company), who intervened to ask why Puck wanted to kidnap the changeling. Instead of rehashing the play's plot, Ben and Puck exchange inside references to Puck's magical transformational abilities. Puck's digital persona is just as self-interested and self-indulgent as one would expect.

Robin Goodfellow

Changeling Boy Update: We got a good gang together but we couldn't kidnap the changeling boy because Titania had him all cuddled up with her, crowned with flowers, making him all her joy, etc. You got lucky, kid. Next time…
Ben Spiller

Why do you want to kidnap him? Seems a bit harsh. Will you be turning him into the likeness of a beanfed horse so that you can beguile him as a filly-foal?
Jun 17, 2013

Robin Goodfellow

+Ben Spiller I hadn't got that far in my plan. Basically I wanted to get him away from "certain people" so those "certain people" might stop squabbling over him and remember how magnificent "certain other people" are who have always been there for them.
I would probably have turned him into a three-legged stool. Permanently.
Jun 18, 2013

Ben Spiller

Or, how's about giving him a gossip's bowl with you disguised as a crab apple inside it? Then, when he takes a sip from the bowl, you could bob against his lips and make him spill the contents all over himself. Just a suggestion.
Jun 18, 2013

Robin Goodfellow

A great fairy never repeats his tricks...
Jun 18, 2013

Ben Spiller

Oh, have you done that one before? Have to admit that, as I was typing, it had a strange familiarity about it. Are you playing mind tricks on me, Puckster? Laughing at my harm, are you?
Jun 18, 2013

Robin Goodfellow

Of course I have! It's one of the few true things +Billy Shakespeare said about me.
Jun 18, 2013

Robin Goodfellow

Though you know I **could** control your mind. Any time I wanted. Be warned.
Jun 18, 2013

Leah Aguigam

Cute
Jun 18, 2013

Robin Goodfellow

Yes I am.

Jun 18, 2013

Ben Spiller

Ha ha! An ego to rival Titania's! ;)

To be clear, the Google+ backchannel is not going to win any awards for acting or writing. But it is an interesting test case for considering Shakespeare on screens in the digital age. The production begs new questions about Shakespeare as a historical, social, and digital practice. How are the historical roles of tricksters—say Titivillus to early modern clowns to internet trolls—comparable? Can we draw a historical parallel between the identity-making and self-presentation of early modern courtiers and social media personal branding? How does the production create a contextual collapse of the boundaries between the magical/earthy, digital/real, and personal social.[152]

At the same time, *A Midsummer Night's Dreaming* is a perfect example of Sterne's "Shakespeare processing," since it is an example of an emerging medium being tested with Shakespeare. The production blurs the line between art and technical demonstration. It is an example of "Shakespearealia," a way to "link media to other logics of intelligibility in order to make the operations of the media themselves intelligible" (329). Not just actors but also media perform Shakespeare according to the own logical structures, gaps, and abilities.

Google+ is a social network tool that organizes contacts through the concept of a "circle." Thus, *A Midsummer Night's Dreaming* must also be organized by circles: Court, Fairies, Lovers, Mechanicals. Similarly, the logic of Google+

[152] Context collapse is a term coined by Danah Boyd to describe when a person is caught trying to portray two conflicting identities, say personal and professional, in the same digital space and time.

depends on digital identity-making through the use of a profile. Thus, the characters of *A Midsummer Night's Dreaming* also have profiles that include a name, tagline, location, gender, hypertext links, people in common, work & education, places, and photos. This metadata asks viewers to reorient themselves—both to Shakespeare and to the digital platform of Google+. The effect on Shakespeare's characters is at once amusingly edifying—Puck studied Mischief in school only later to serve as a Senior Policy Advisor in Culture, Media, and Sport—and flattening, reducing identities to general categories of business and personal interest. Translating Shakespeare into Google+ demonstrates the features and limitations of the platform for expression, opening up certain information channels for creative play while silently overlooking others.

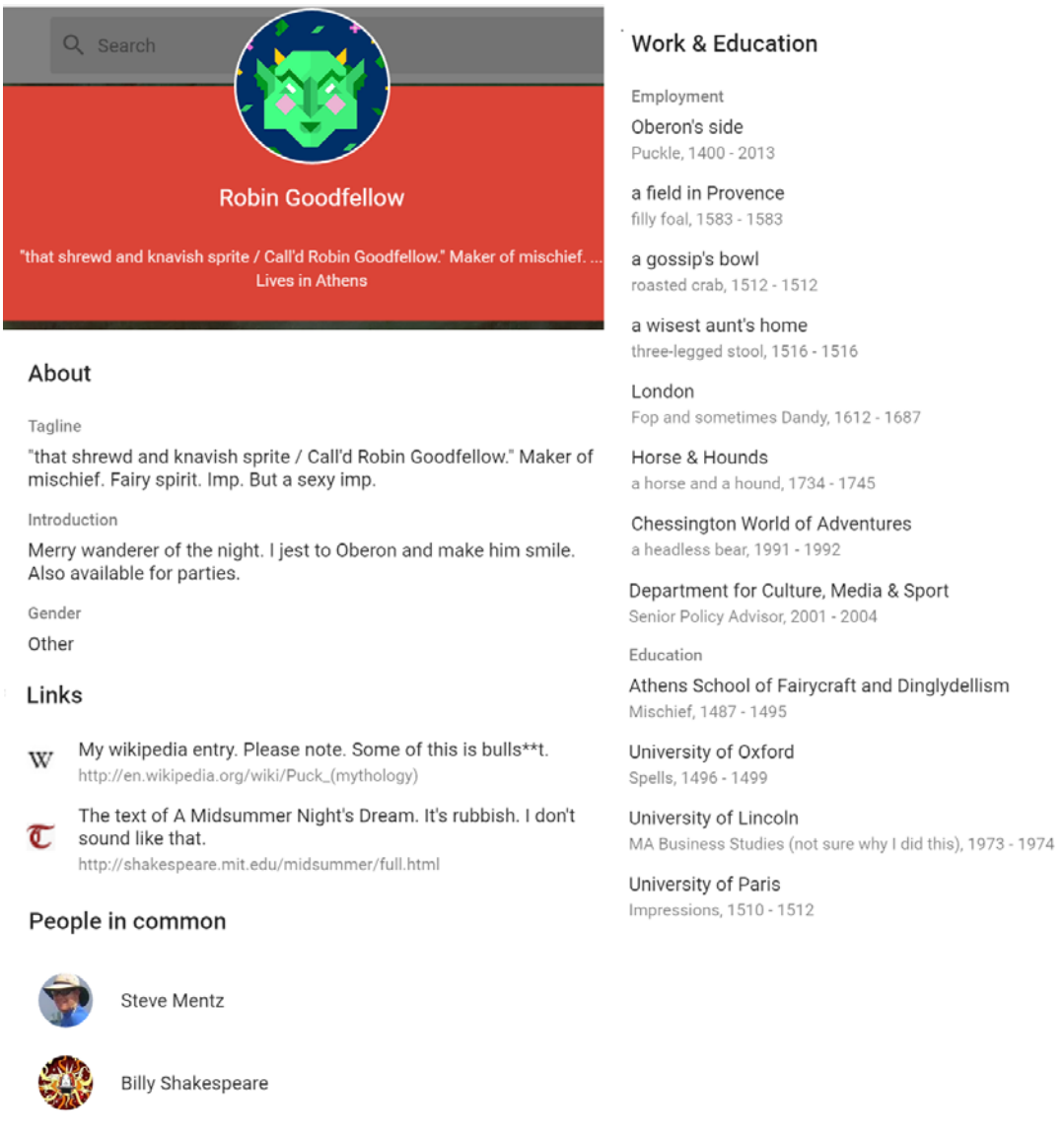

Fig. 23 The Google+ profile of Puck for *A Midsummer Night's Dreaming*.

Shakespeare processing often takes the form of a miniature Shakespeare adaptation, a short demonstration of creative play that projects Shakespeare's ideas and characters onto a new material. This type of appropriation is made possible by what gaming theorist Miguel Sicart calls *playfulness*:

> Playfulness is the carnivalesque domain of the appropriation, the triumph of the subjective laughter, of the disruptive irony over rules and commands.

> Playfulness means taking over a world to see it through the lens of play, to make it shake and laugh and crack because we play with it. (24)

A Midsummer Night's Dreaming takes over the world of Google+, transforming the conventions of digital and social media into Shakespearean play. Shakespeare processing is a form of media playfulness, a willingness to treat new media in the medieval fashion of the carnivaleque. This playfulness, or more suggestively playingness, is akin to Middle English locutions such as "be game" or "in game" that mean roughly "in playfulness" or "in the playful world." Indeed, the medieval phrase "in game" has become common again in the digital age, a convenient shorthand for the play state Kendall Walton refers to as "fictional truth."

While Sterne briefly discusses Shakespeare video games, the particular history of *digital* Shakespeare processing has yet to be written. A significant touchstone for such a history must be media scholar Janet Murray's *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (1998). During the internet boom years of the 1990s, Murray recognized that video games were becoming a significant medium for storytelling. Alongside early internet buzzwords like "cyberspace" and "cybersex," Murray coined the term "cyberdrama" to describe the drama of the future. Inspired by Shakespeare and Spock, she argued that cyberdramas would be based on the pleasures of agency, immersion, and transformation. In her vision, the hacker would become the playwright of the future:

> I find myself anticipating a new kind of storyteller, one who is half hacker, half bard. The spirit of the hacker is one of the great creative wellsprings of our time, causing inanimate circuits to sing with ever more individualized and

> quirky voices; the spirit of the bard is eternal and irreplaceable, telling us what we are doing here and what we mean to one another. (9)

Murray's "cyberdrama" tacitly parallels the rise of early modern drama in the 17th century to the rise of the videogame in the 21st.

Before Murray suggested video games as the future of Shakespeare, Brenda Laurel described computers as the medium of the performing arts future in *Computers as Theatre* (1991). At the high watermark of 1990s virtual reality hype, Laurel wrote

> With virtual-reality systems, the future is quite literally within our grasp. The dimension of enactment has undergone a rapid, qualitative transformation in the last decade...Like every qualitatively new human capability before it, the ability to represent new worlds in which humans can learn, explore, and act will blow a hole in all our old imaginings and expectations. Through that hole we can glimpse a world of which both cause and effect are a quantum leap in human evolution. (197)

Just two years later, when *Computers as Theatre* was reprinted, Laurel added a new chapter: "Post-Virtual Reality: After the Hype is Over." The virtual reality bubble had burst—and the dot com bubble was soon to follow. Laurel recanted, calling virtual reality a "fad" and lamenting that "the VR meme started to flame out" by 1992.

But Laurel was more forward-thinking than she gave herself credit for. VR technology was never successful in the 1990s. If even as recently 2010, it was widely accepted that virtual reality was over, a curious technology footnote that never quite panned out, virtual (and augmented) reality are increasingly becoming viable gaming technologies. Major corporations are investing in virtual reality (VR) hardware

products such as Sony's Playstation VR, Google's Daydream View, HTC's Vive, and Samsung's Gear. In 2014, Facebook acquired Oculus VR, the makers of the Oculus Rift VR headset for $2 billion. Twenty-five years after Laurel's VR theater dream, we have To Be with Hamlet, a massively multiplayer, virtual reality production of *Hamlet*.

Fig. 24 Click to view A video diary announcement for the To Be With Hamlet project.

Click to view A video that shows the layers of the production: live-actors, computational modeling, and digital avatars

The actors of *To Be with Hamlet* wear special indicators so their movements can be tracked and then translated onto the movements of virtual avatars. Audiences are free to roam around the virtual scene using VR headsets, viewing the scene from any angle. The virtual freedom of the audience is simultaneously matched by a virtual blindness on the part of the actors, who cannot wear VR headsets that may interfere with the camera sensors. Indeed, much of the allure of virtual reality technology lies in its disjointedness, the methectic gap between the real and the virtual.

Where Zachary Koval, the actor who plays Hamlet, sees a drab footstool, the audience is presented with a stone. On stage, Hamlet and Hamlet Senior—played by Roger Casey—look eye-to-eye, but in the virtual world Hamlet Senior's ghost appears some hundred feet tall, standing in the hazy, coastal waters of Castle Elsinore. The virtual world gives us a sense of worldly scale far beyond the picture-window of a stage. As we look to the "real" and "virtual," the demonstration reveals what is gained and lost in media translation. For access to this fantastic digital realm, the audience must sacrifice Roger Casey's deeply pained expressions—and the explosive anger of his words that manifests as spittle across the dark soundstage of the capture theater. Like *A Midsummer Night's Dreaming*, the production has both an emotionally flattening and a visually heightening effect, drawing audiences to the new medium's possibilities for scale as it also muddles expressive affect. Shakespeare processing demonstrates the expressive capacities and limitations of a particular medium. Each medium offers a particular way to be with Hamlet.

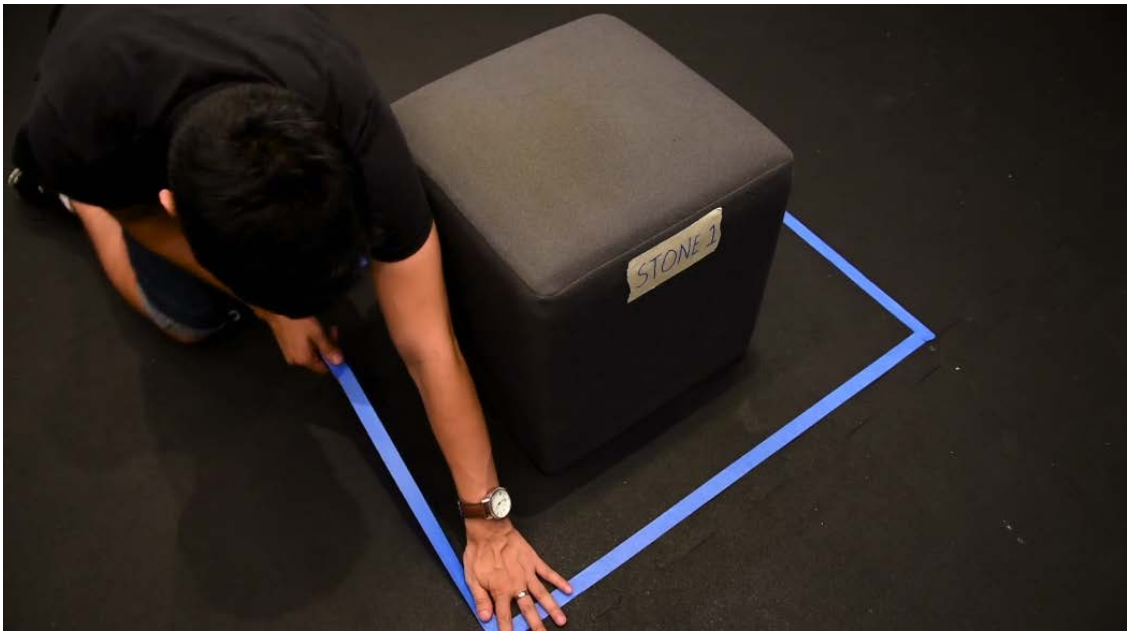

Fig. 25 A footstool is marked off as a stone for the virtual set of *To Be with Hamlet.*

Productions like *A Midsummer Night's Dreaming* and *To Be With Hamlet* use professional actors to translate Shakespeare into digital spaces, but there is also a growing body of Shakespeare games attempting to do the same. Digital theater-making is now available to ordinary mechanicals who want to ply their talents on the holodeck. *Play the Knave* (2015, Xbox 360 Kinect) is a cross between karaoke and machinima that enables players to enact Shakespeare scenes, choosing from over a dozen plays.[153] A television screen prompts up to four players at a time while a camera captures their voices and movements. These movements are then translated onto a digital avatar performing on a simulated digital theater stage that may be historical—Queens' College Cambridge Temporary Stage (c. 1547) or The Rose (c.

[153] Machinima is a portmanteau of machine and cinema. In machinima, players create virtual films using video game engines to generate the scenes. See Johnson and Pettit's *Machinima: The Art and Practice of Virtual Film Making* (2012).

1600)—or contemporary—The Stratford Festival Stage and The Container Globe.[154] The captured virtual scenes are then available for players to share, modify, or erase.

Play the Knave is the first motion-capture Shakespeare game, another example of Shakespearealia. A voter on the game's Steam Greenlight page called it "a tech demo for the kinect" followed by an emoji smacking its forehead.[155] There are compelling reasons to see this as more than just tech demo though. The game's creators argue:

> When users of *Play the Knave* perform a scene from, say, *A Midsummer Night's Dream*, that scene exists within the particular game session but also, and particularly as the scene is shared with wider audiences, becomes part of the dramatic "work" that is *A Midsummer Night's Dream*. If, as M. J. Kidnie has argued, Shakespeare's works are not static objects but become defined through the process of adaptation and especially through debates about whether a particular text or production is faithful as an adaptation, then a game like *Play the Knave*, as it facilitates the work of adaptation on a broad scale, becomes part of the process through which Shakespearean drama is understood and recognized. (Bloom 122)

[154] For a detailed description of the Queens' College Cambridge Temporary Stage see Alan Nelson's *Early Cambridge Theatres: College, University, and Town Stages, 1454-1720*. Cambridge: Cambridge University Press, 1994. See also the Simulated Environment for Theatre (SET) Project (http://humviz.org/set/) and Roberts-Smith et al. "Cambridge Revisited? Simulation, Methodology, and Phenomenology in the Study of Theatre History." For more information on the Container Globe, a transportable Globe concept built out of shipping containers in Detroit, see their website (http://www.thecontainerglobe.com/).

[155] Steam Greenlight is a website designed to gauge commercial interest in independent video games. The project page for *Play the Knave* was submitted on March 2, 2017.

These productions reflect a changing notion of what playing Shakespeare can be in the 21st century.[156] If everyone had the tools to play, record, and share Shakespeare scenes, what new kinds of playing might we encounter?

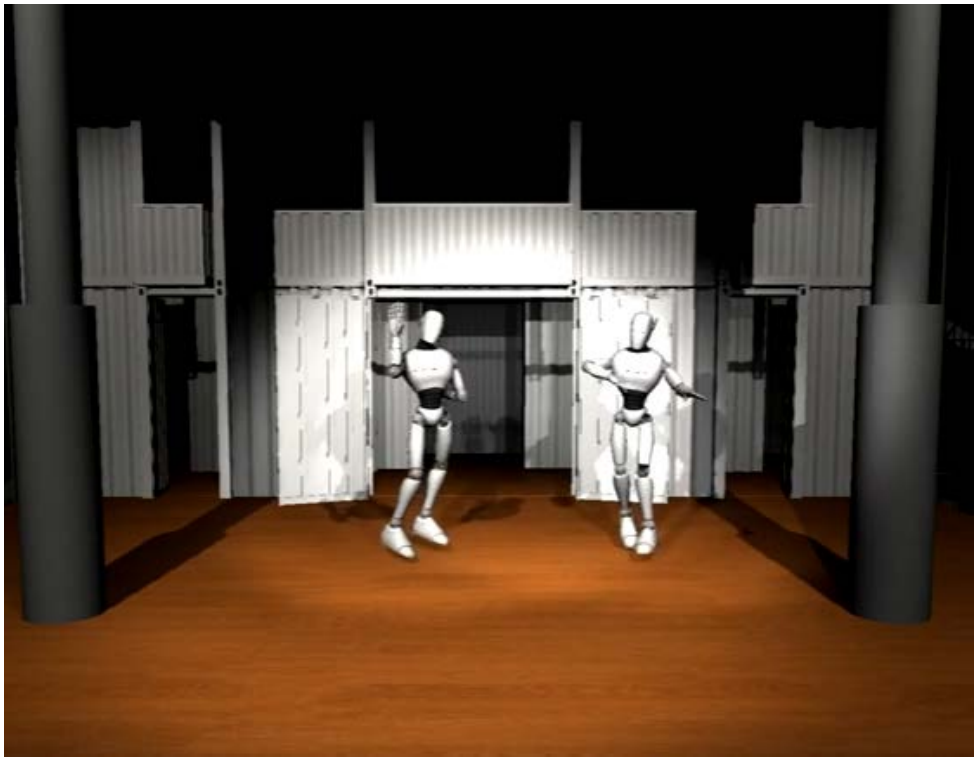

Fig. 26 Click to view A *Play the Knave* robot production of *Coriolanus* Act 1, Scene 8. The players turn a serious scene comical by interpreting the lines through robot voices and actions. Is this Shakespeare or merely Shakespearealia that tells us more about the medium?

One answer is a robot *Coriolanus*, where the confrontation between Marcius and Aufidius is comically re-imagined through science fiction robots. But is this Shakespeare or just inane play? When does Shakespearealia merely appropriate the bard? Just like the comments on Google+ for *A Midsummer Night's Dreaming*, the amateur acting of Robot Coriolanus is not going to win any awards. If this is poorly

[156] As of June 2016, *Playing the Knave* is strictly an installation game, but there are plans to release an initial home version along with additional theater games that connect movement with Shakespeare's language. Some other possibilities might include the ability to include your own script and remote performances where one person could play a character then upload the performance for another person to finish the scene by playing another part.

done Shakespeare, why does it matter? Beyond the simple fact that *Play the Knave* helps constitute a larger Shakespeare assemblage (along with all tchotchkes of the Folger gift shop), the game is important because it demonstrates an evolving relationship between Shakespeare, media, and play. The most significant aspect of *Play the Knave* is not the technology but rather the way it encourages an understanding of Shakespeare-as-play, an activity open to the Shakespeare metropolis and rude mechanicals alike:

> *Play the Knave* emerges out of and constitutes a more reciprocal relationship between gaming and theater, underscoring the transferability of skills between these presumably different engagements. Theater inspires the game's design, but gaming technology makes it possible to create the game in the first place. Moreover, as I have maintained, a session of *Play the Knave* is simultaneously both game play and theatrical work. In Shakespeare's era, the relationship between theater and gaming was reciprocal and mutually reinforcing in just this way, though in the hundreds of years since, we seem to have forgotten that. (Bloom 123)

Play the Knave is significant, then, because it encourages the type of playfulness that Sicart describes—it generates opportunities to treat Shakespearean acting as a social game (rather than a professional skill or classroom exercise).

This is living room Shakespeare, significantly (yet not entirely) decoupled from academic and commercial interests. Indeed, the challenge of this kind of amateur Shakespeare can be convincing players that Shakespeare can be a personal

pursuit. Gina Bloom, one of the creators of *Play the Knave*, describes her own experience with this challenge:

> The rise of professional theater and well-trained actors is certainly something to celebrate, but it has also had its downsides. Unlike many of the performing arts—singing, dancing, even playing a musical instrument—acting is now generally seen as something that is best and only left to the professionals or at least to organized groups dedicated to the task of putting on a play. This is especially true in the case of Shakespeare. To be sure, as Michael Dobson has shown, there is a long and still vibrant tradition of amateur Shakespeare performance, but Shakespearean theater is rarely something adults do for fun in their living rooms. (11)

The professionalization of drama has drawn a sharp line between actor and audience, leading to a "widespread public perception that acting cannot be done without training" (11). Just as karaoke opens the door to those of us who sing in the car and the shower, *Play the Knave* invites players to view Shakespeare as a social and expressive form of play open to everyone.[157] This is unprecedented in the larger history of Shakespeare games.

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[157] Bloom's impetus for creating *Play the Knave* was not *just* playfulness. She describes it as a tool for enskilling players, teaching them the embodied, phenomenological skill of playing Shakespeare:

> Despite their promise, theater-making games struggle to enskill successfully their users in the experience of theater, and I argue that this is because of an incompatibility between the bodily mechanics of theater-making the games represent and their own game-play mechanics, which call for largely untheatrical gestures such as pushing buttons, flipping cards, moving counters, and so forth.

Bloom draws the term "enskill" from Evelyn Tribble and John Sutton. See "Cognitive Ecology as a Framework for Shakespearean Studies" in *Shakespeare Studies* 39. According to Tribble, the term comes from the work of anthropologist Tim Ingold.

Fig. 27 Click to view two Macbeth players in Chicago.

The tension between play and serious study has always been a challenge for developers—with the academic side usually winning out. The "fun" of most Shakespeare games comes in the form of scholarly competition. The majority of commercial Shakespeare games are designed for the education market—or at least have an educational bent.[158] These games tend to be conservative, rewarding players for their knowledge of Shakespeare facts. Bloom calls these "scholar-making" games since they "center on trivia, turning the player into a student of Shakespeare and his

[158] Creating any type of comprehensive list of educational Shakespeare games would be an exhausting task. A few more recent games that might be included are *Macbeth Interactive* (A Shakespeare's World 2005), *'Speare* (Fischlin 2007, Flash), *Macbeth Interactive Motion Comic* (Classical Comics 2010, Windows/Mac), *Romeo and Juliet Interactive Motion Comic* (Classical Comics 2010, Windows/Mac), *Romeo and Juliet Quote Game* (Blue Guerrilla 2013, Windows), *Macbeth Quote Game* (Blue Guerrilla 2013, Windows), and *MacMatch: The Macbeth Review Matching Game* (Blue Guerrilla 2015, Windows). There have been, I suspect, dozens more educational Shakespeare games released in the last decade, many of them no longer made, available for purchase, or useable on modern computers.

theater" (215). A good example is Avalon Hill's 1966 board game entitled simply *Shakespeare*. The game instructions contain four variants: Basic, Advanced, Tournament, and Solitaire. The Basic and Advanced versions are what David Parlett calls "race" games, similar to Parcheesi, requiring no specific knowledge of Shakespeare or his plays.[159] The result is something like Shakespeare *Monopoly*, a familiar game that coopts Shakespeare as a recognizable brand. The game's educational aspirations are only fully expressed in its Tournament and Solitaire versions which add a deeper element of skill by offering bonuses for correctly identifying Shakespeare quotes, identifying a play's genre, and naming characters.

Shakespeare (1966) distills the bard into a series of knowledge checks similar to a quiz or test. Whether or not this type of game can be considered fun, it is certainly not playful in Sicart's sense of the word. (The notable exception, of course, is the trivia game whose playfulness lies in its dependency on turning trivial knowledge into a useful asset.) Playfulness relies on opportunities for methexis and mimesis, yet scholar games reward only a single authoritative account of Shakespeare—even if that account is dubious.[160] Games like *Shakespeare* (1966)

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[159] Parlett's categories include race games, space games, chase games, displace games. See his *Oxford History of Board Games* (1999).

[160] The answer book for *Shakespeare* (1966) calls *Troilus and Cressida* a tragedy, for example. The answer book does acknowledge some ambiguity in line numberings saying: "These are but a few of the quotations from the wonderful works of Shakespeare. Line numbers may vary slightly in various editions, but should be close to locations cited here." The question remains then, why not link the lines to characters that speak them? The character that speaks a line is more likely to be consistent from one witness to the next. My intuition is that the designers sought to link the words primarily to Shakespeare. Of course, this raises its own problems. Consider the misogynistic undertones of quote 50 from *Titus Andronicus*: "She is a woman, therefore may be woo'd; / She is a woman, therefore may be won." (2.1.82). The quote does not offer a flattering perspective of Shakespeare, but what the booklet does not reveal is that these lines are spoken by Demetrius, who is not exactly a venerable character. Moreover, it seems likely that the lines were not written by Shakespeare at all but by George Peele. See T. M. Parrott as early as 1919 ('Shakespeare's Revision of *Titus Andronicus*', *MLR* 14 (1919): 16–37) and recently supported by Brian Vickers ("Titus Andronicus with George Peele" in *A Historical Study of Five Collaborative Plays*).

reward a very narrow, academic interpretation of the Bard's works. This, however, has not kept them from carving out a modest commercial niche in classrooms, occasionally being funded by educational grants.[161]

More playful Shakespeare board games do exist.[162] *Shakespeare: The Bard Game* (Heffer and Siggins 2004, board game) requires players to "put on as many plays as time allows." The game depends on a variety of skills including resource management (players collect and expend resources—scripts, actors, props, and patrons—in order to "stage a play" at a specific venue), knowledge checks (players are asked easy, medium, or difficult Shakespeare questions in exchange for shillings), and theatrical performance (players may recite lines from a play or put on a performance, essentially busking for shillings).

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[161] Even with funds in hands, humanities scholars must employ technical staff to build the game and also find creative ways to popularize it with players. For more on the challenges of creating Shakespeare Games, see Jennifer Roberts-Smith, Shawn DeSouza-Coelho, and Toby Malone's "*Staging Shakespeare* in Social Games: Towards a Theory of Theatrical Game Design" (2016). For an example of a grant-funded Shakespeare game, see Daniel Fischlin's *'Speare* (2007). One particularly challenged project was Edward Castronova's *Arden: The World of Shakespeare* (2007, PC), a project funded by the John D. and Catherine T. MacArthur foundation. The game which was based on *Richard III*, allowed players to take "the side of the Lancastrians or the Yorkists in the historical context of Shakespeare's play" (8 *A Test of the Law*). While it featured a Shakespeare theme, *Arden* was actually spearheaded by economics-turned-media professor Edward Castronova, best-known for his work on virtual economies. The game was built on the Aurora toolkit, based on the massively multiplayer online role-playing game (MMORPG) *Neverwinter Nights* (2002 PC/Mac/Linux), a platform more suited to studying virtual economics than drama. The *Arden* project started off with the promise of being a virtual Shakespeare world with educational aspirations; the result was something closer to a virtual economy laboratory. Castronova discovered firsthand that video game development, especially on the scale of an MMORPG, requires an immense amount of labor to create and sustain. *Arden* faced many problems but the most damning was simple: No one wanted to play it. In an article in *Wired* playfully entitled "Trying to Design a Truly Entertaining Game Can Defeat Even a Certified Genius," Castronova admitted the game had one central problem:"It's no fun" (Baker).

[162] For more Shakespeare board games, see *The Play's the Thing* (Talicor 1993, board game) and *Shakespeare* (Ystari 2015, board game), and *Kill Shakespeare* (IDW 2015, board game) (based on the comic book of the same name).

Outside of scholar-making games, Bloom defines two additional categories of Shakespeare games. In a "drama-making game," the player "does not impersonate the character in the guise of an actor, but rather becomes the character usually to change its outcome in a dramatic plot" (215). Basically this category includes all games that are not educational nor focused on having players theatrically act out Shakespeare. These are predictably named "theater-making games."

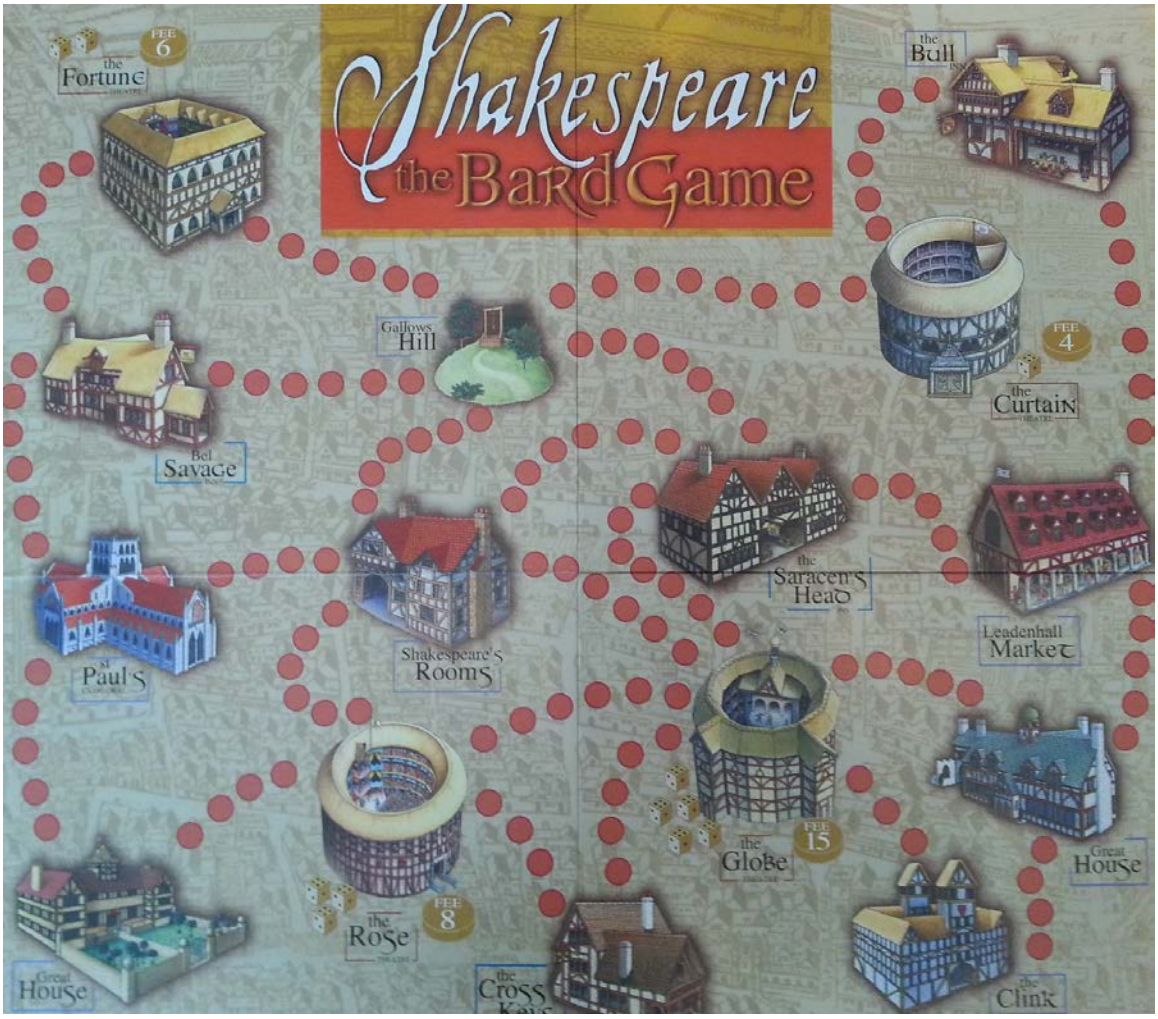


Fig. 28 The board of *Shakespeare: The Bard Game* showing four early modern theaters and the fee to perform at each: The Curtain (4), The Fortune (6), The Rose (8), and The Globe (15). (Recent excavations suggest The Curtain may have actually been rectangular.)

Fig. 29 The early modern actors of *Shakespeare: The Bard Game*. Each actor is assigned a different weight that influences the overall acclaim of a staged play.

The play script tiles of *Shakespeare: The Bard Game*. Each play has a performance value (top number) and production requirements (from left to right): props, actors, patrons. Performance values suggest that some plays are more significant than others. (Note that Richard III is accidentally included twice.)

The game's procedural rhetoric is arguably worthy of a journal article in itself.[163] For example, why are particular actors, theaters, or plays given greater or lesser significance? More notable, however, is the way *Shakespeare: The Bard Game* allows players to achieve victory through a variety of skills, some strategic, academic, or theatrical. The game accommodates a variety of Shakespeare communities—both metropolitan and extramural—by inviting players to address Shakespeare as professionals and amateurs, actors and players, scholars and enthusiasts.

All of these games reveal a Shakespeare media landscape that is increasingly oriented toward embodied performance and playfulness over scholarly or high-culture engagement. Digital media like YouTube has demonstrated an increasing trend toward "amateur" media production and we can see this play out with regards to Shakespeare as well. Scholars have also taken an increasing interest in Shakespeare as amateur activity. Michael Dobson, Steven Purcell, and Katherine Steele Brokaw have all argued that Shakespeare does important cultural and community work.[164] Brokaw argues that:

> Amateur productions of Shakespeare do cultural and anthropological work as community events; we need to look at them as far more than presentations of playtexts. Attention to the entire event of and around the performance helps us better examine the ways Shakespeare and the acts of theatrical production make promiscuous meanings for the rural and the poor, children, differently-abled people, and really anyone outside the "Shakespeare metropolis…" (5)

[163] For more on the procedural rhetoric of games, see Ian Bogost's *Persuasive Games* as well as the first chapter of this dissertation.

[164] See Michael Dobson (*Shakespeare and Amateur Performance* 2011), Steven Purcell ("Shakespeare in Amateur Production" 2017), and Katherine Steele Brokaw ("Approaching Amateur Shakespeare" 2017).

Brokaw's argument about marginal productions is also a poignant entry point for Shakespeare media studies.

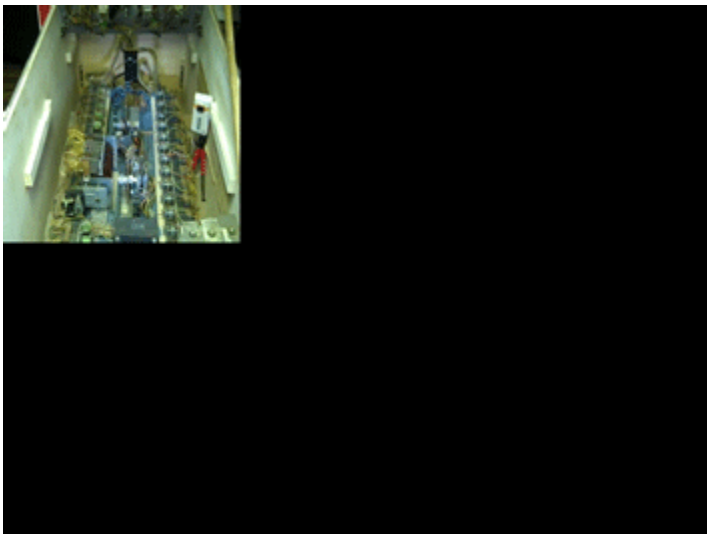
> These marginal companies that are less burdened by pressures of authority and economics can teach us much about how the ideas produced in the Shakespearean metropolis do and don't matter in the wider world, and about how Shakespeare makes localized meanings. One can trace an epistemic two-way street of academic ideas about Shakespeare and culture that wind their way to de-centralized audiences, and an even less traveled road of often overlooked performance events that produce indigenous knowledges that *should* be (but rarely are) of interest to scholars of Shakespeare. (7)

As the Shakespeare media landscape becomes more diverse, we need to be sensitive to the way that the Bard is circulating in these new communities through digital media and games. Apparently, Shakespeare media are much more diverse than current scholarship has accounted for. Shakespeare is already the stuff of micro-computer adventure. Janet Murray's cyberdrama has already arrived—even if it has not taken the form of the Star Trek holodeck she envisioned. What we need now is a better understanding of the way digital Shakespeares are being created, circulated, and consumed. What community work do these games do and for whom? What are their politics? Where do they stand on a spectrum on one side of which is commerce and the other amateurism? How much does technology validate Shakespeare, Shakespeare technology? And what are the numbers and demographics? That is, how many people engage with cyberdrama as opposed to more "old-fashioned"

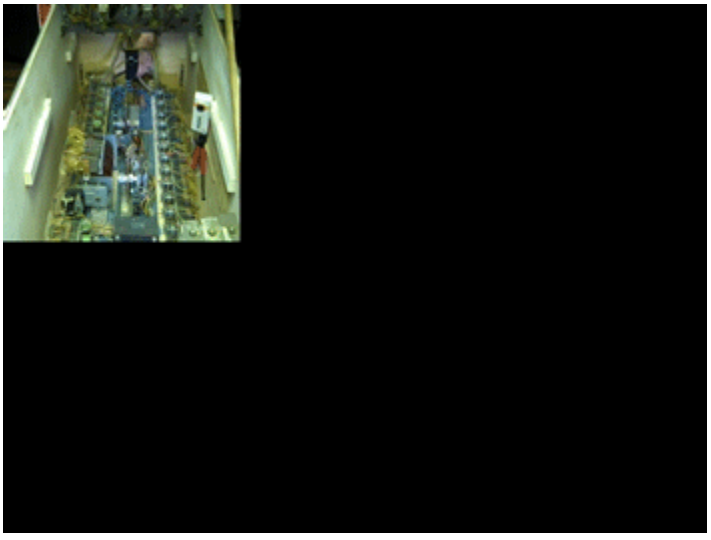
technologies (starting with the proscenium or thrust stage) and who are these people (young or older, hard-pressed or well-off, English speaking or not)?

The work I have taken up in this dissertation has advocated for a more capacious historical understanding of game; and I have argued that the fields of theater and game studies have much to offer one another. With mimesis and methexis, I offer an initial theoretical framework to consider play across digital and analog media. These terms also offer us a window into the significant concepts of playfulness, metatheater, skill, and professionalization. This is the beginning of what I hope can grow to become a larger and richer discourse of *play studies*. The complexity of human play demands that we consider it from a larger perspective—across communities, media, space, and time.

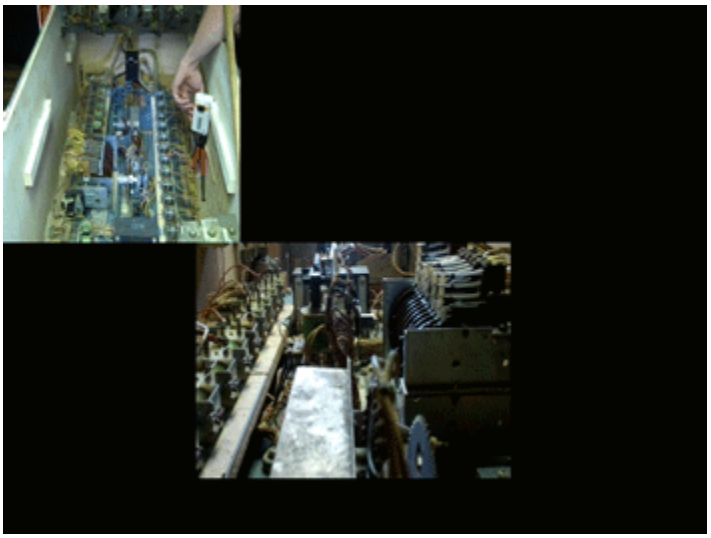
Appendix: Key Moments in the Ontograph of *Space Time*



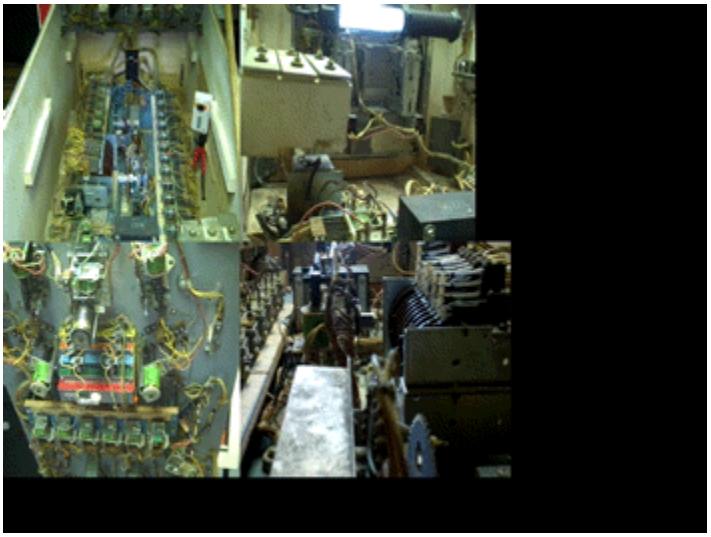
0:00 Camera 1 opens on the inside of the cabinet. Visible on the far right is the prop stick which holds the playfield up. Below that is Camera 2, which is focused on the coin door from within the cabinet. To the left and below Camera 2 is a long line of relays which extends from the front of the cabinet to the rear.



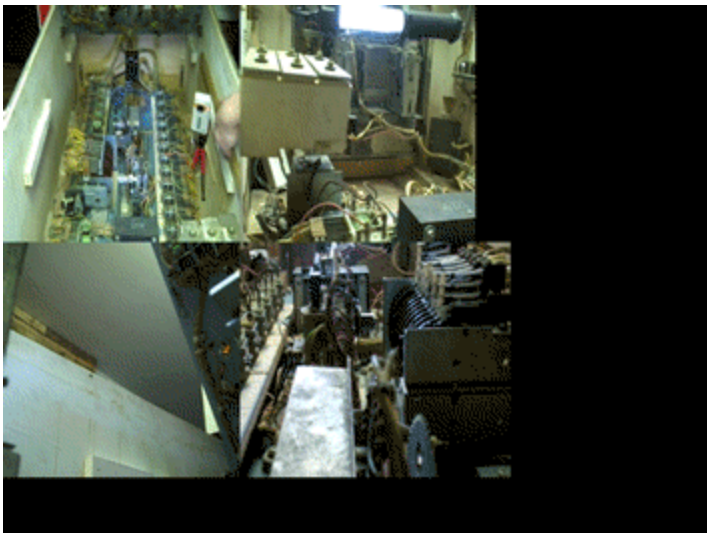
0:21 Camera 5 opens, showing the view from the back of the cabinet to the front. The long row of relays is visible on the left. Directly in front of the camera is a stepper motor which controls the lights for the time tunnel. To the right is the score motor, responsible for multi-step calculations. At the top of the frame, closer to the front of the cabinet is the transformer.



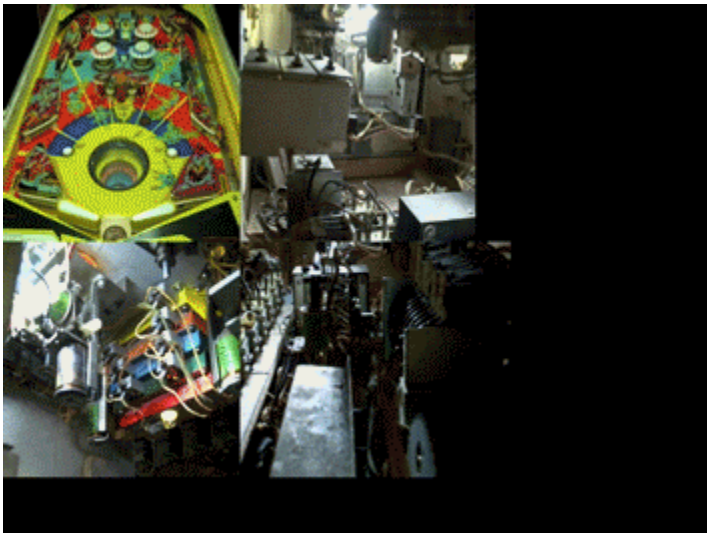
0:42 Camera 2 opens, showing a light at the top of the frame which will illuminate the cabinet after the playfield has been closed. Below the light, the coin mechanisms are visible. To the right, the primary tilt mechanism is partially visible. To the left is the set of chimes which are activated when points are scored.



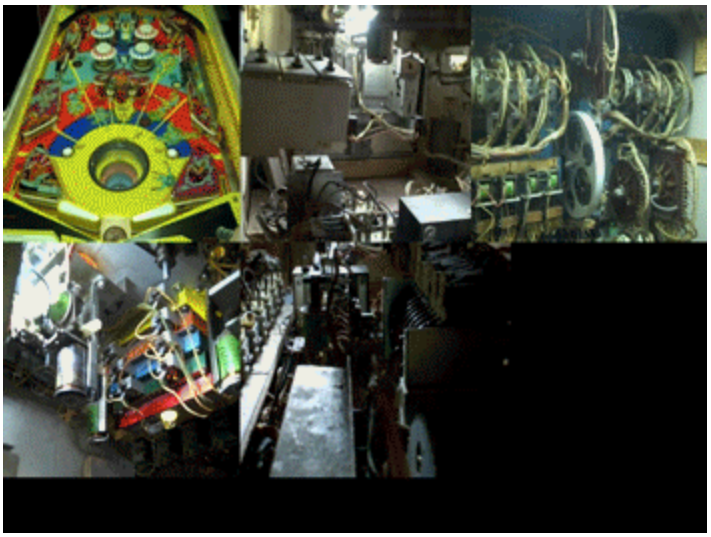
1:02 Camera 4 opens, briefly showing the bottom of the playfield including the time tunnel, a bank of relays, and the pop bumpers. The position of the camera's final placement is visible in Cameras 1, 2 and 4.



1:26 Camera 1: The prop stick is let down and the playfield is lowered into view. Camera 4: The bottom of the playfield comes into view. The multi-colored assembly in the middle is the time tunnel. Behind this assembly is the up-post assembly which blocks the center drain between the flippers. The right flipper assembly is partially visible at the very top of the frame.



1:46 Camera 3 opens, revealing the game's mechanical scoring and credit reels. The view shows the top two sets of score reels, four per player. The large white reel in the center tracks the number of credits. To the right of the credit reel are two stepper units.

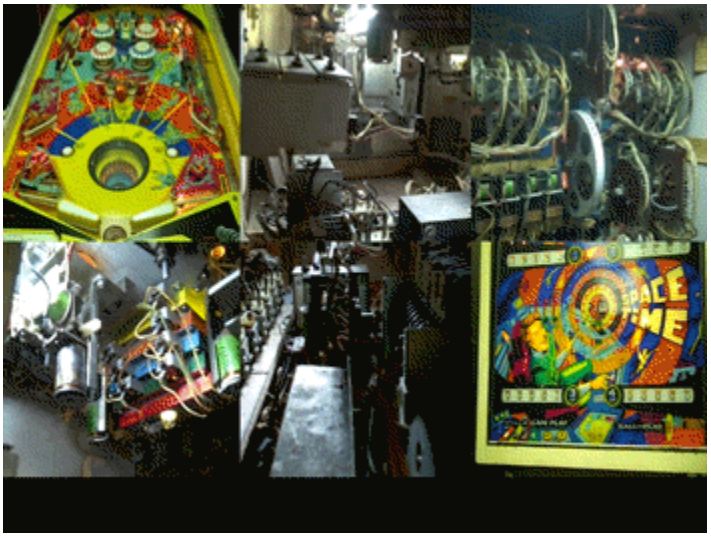


2:05 Camera 6 opens, revealing the game's backglass. There are four player score windows. In the center is a small window revealing the current number of credits.

Powering *Space Time*, Coining, and Starting a Game

2:12 Camera 1: A ball is placed in the machine.
2:20 The power switch is turned on.
2:26 The left flipper button is depressed, illuminating the general illumination lights.

2:34 Camera 2: The coin, visible as a black blur, drops through the coin mech into the cabinet Camera 5: The score motor determines two credits should be rewarded for the quarter coin. Camera 3: The credit reel spins adding two credits.



2:37 The start button is pushed a single time. Camera 1: The time tunnel lights begin to strobe, representing different bonuses from 1-5000 points. Camera 3: The lights over the player 1 score reels are illuminated. The credit wheel deducts a single credit. The four score reels for player 1 are zeroed. Camera 4: The time tunnel starts strobing. Camera 5: The score motor turns over as the player 1 score reels are zeroed.

A large gear on a stepper begins to turn in the lower righthand corner; it is responsible for the strobing effect of the time tunnel. Camera 6: The player 1 score reels zero, a credit is subtracted in the center window, and a variety of lights begin to flash. A light illuminates the number 1 in the left hand corner which signifies it is Player 1's turn. A second light illuminates another 1 in the central bottom of the backglass, indicating the player is on ball 1.

Ball 1

2:40 A ball is kicked into the shooter lane.

2:43 Camera 1: The ball passes over a rollover switch, stopping the time tunnel bonus. Camera 4: The bottom light of time tunnel remains illuminated, indicating a potential maximum bonus of 5000 points.

2:49 Camera 1: The ball comes to rest in a kickout hole, scoring a bonus. A gate is also opened at the top of the playfield. Camera 2: The game chimes rattle as a coil fires a metal cylinder into them. Camera 4: The time tunnel lights begin to strobe again. Camera 5: The score motor calculates 500 bonus points. Camera 6: Points are added to player 1's score.

2:53 Camera 1: The right flipper swings upward to bat the ball. Camera 4: The movement of the right flipper is visible at the top of the frame.
2:55 Camera 1: The center target is hit and the up-post blocks the center drain between the flippers. Camera 4: The up-post mechanism lights and the post extends.

3:03 Camera 1: The ball ricochets off a pop bumper through the gate which opened at 2:49. The ball passes over several roll over switches triggering a series of bonuses. Camera 2: The chimes rattle as each bonus is added to the player's score. Camera 3: The movement of the score reels is visible as the ball ricochets off the pop bumpers. Camera 4: The outside chime is visible in the righthand portion of the frame, vibrating as the ball hits each pop bumper and scores additional points. Camera 5: The score motor calculates the series of bonuses triggered by the roll over switches. Camera 6: The bonuses are tallied on player 1's score reel.

3:13 Camera 1: The ball drops into a kickout hole in the upper left corner of the playfield. A gate is also opened in the center right of the playfield. Camera 2: The game chimes rattle as a coil fires a metal cylinder into them. Camera 4: The time tunnel lights begin to strobe again. Camera 5: The score motor calculates 500 bonus points and the time tunnel stepper begins to turn in the foreground. Camera 6: Points are added to player 1's score.

3:32 Camera 1: The ball ricochets of the left slingshot and drains out the right outlane, passing over a rollover target. Camera 6: A bonus is added onto player 1's score.

3:36 Camera 1: The ball drains. The up-post goes dark and drops down. Camera 4: The light from the up-post goes out. Camera 6: The ball count advances to 2.

Ball 2

3:39 Camera 1: As the ball advances up the shooter lane, it passes over a rollover switch, stopping the time tunnel bonus. Camera 4: The lights on the time tunnel pause at the blue level (3000 pts).

3:42 Camera 1: The ball passes through the top center lane, passing atop a roll over switch and scoring a time tunnel bonus. Camera 5: The score motor calculates the bonus Camera 6: The thousands reel of Player 1's score increments three times in quick succession.
3:54 Camera 1: The ball rolls through the center lane, scoring another time tunnel bonus.

4:07 Camera 1: The ball collides with a stand-up target. Camera 2: A chime rattles. Camera 4: The time tunnel light begins to strobe again. Camera 5: The gear of the time tunnel stepper spins.

4:18 Camera 1: Both flippers go up and the ball drains down the center. Camera 4: The right flipper mechanism twists in the top of the frame. Camera 5: The score motor spins. Camera 6: The ball advances to 3.

Ball 3

4:24 Camera 1: As the ball advances up the shooter lane, it passes over a rollover switch, stopping the time tunnel bonus. Camera 4: The lights on the time tunnel pause at the orange level (2000 pts).

4:27 Camera 1: The ball passes through the top center lane, scoring a time tunnel bonus. Camera 3: The credit reel spins, rewarding the player's score with a free game. Camera 5: The score motor calculates the bonus. Camera 6: The 1000s score reel for player 1 increments twice.
4:38 Camera 1: The ball drains. Camera 5: The score motor spins. Camera 6: The ball counter advances to 4.

Ball 4

4:42 Camera 1: As the ball advances up the shooter lane, it passes over a rollover switch, stopping the time tunnel bonus. Camera 4: The lights on the time tunnel pause at the orange level (2000 pts).
4:45 Camera 1: The ball drops into the upper left playfield kick-out hole. The lower gate opens. Camera 5: Time tunnel stepper starts again.

5:02 Camera 1: The ball enters the left kick-back lane. Camera 4: The time tunnel pauses at the blue level (3000 pts). Camera 5: The score motor calculates the time tunnel bonus. Camera 6: 3000 points are added to player 1's score.

5:12 Camera 1: The ball collides with the center stand-up target, triggering the up post. Camera 4: The up-post light illuminates.

5:37 Camera 1: The ball drains down the center.

Ball 5

5:43 Camera 1: The ball advances up the shooter lane, stopping the time tunnel bonus. Camera 4: The bonus stops at the yellow level (1000 pts). Camera 5: The time tunnel stepper gear stops.

5:48 Camera 1: The ball falls into the upper right kick-out hole, lighting a playfield insert and opening the upper gate. Camera 4: The time tunnel strobe begins again. Camera 5: The time tunnel gear begins moving.

5:51 Camera 1: The ball passes through the upper gate, scoring a series of bonuses. Camera 4: The time tunnel stops on the orange level (2000 pts). Camera 6: The bonuses are added to player 1's score.

5:59 Camera 1: The ball falls into the upper right kick-out hole a second time.

6:03 Camera 1: The ball enters the upper right kick-out hole a third time.

6:08 Camera 1: The ball enters the left kickback lane, scoring a time tunnel bonus. Camera 1: The time tunnel stops on yellow (1000 pts). Camera 5: The score motor calculates the bonus Camera 6: Player 1's score is incremented by 2000 pts (an apparent discrepancy).

6:16 Camera 1: The center stand up target is struck. Camera 4: The up post rises.

6:18 Camera 1: The ball crosses a white rollover switch on the playfield. Camera 4: The up post sinks.

6: 22 Camera 1: The center stand up target is struck a second time.

6:23 Camera 1: The ball drains in the right outlane.

6:32 Camera 6: The ball counter advances to “Game Over.” The Player 1 light goes out.

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