Tempest

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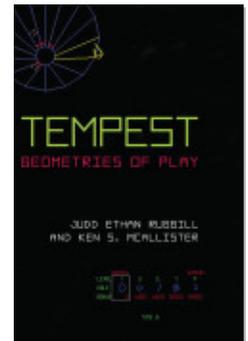➡ For additional information about this book
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Introduction

The year 1980 was a landmark one for video games. As Scott Cohen notes in his now classic history of Atari, the company's "[r]evenues for 1980 doubled to about $415 million, and operating income quintupled to $77 million, one-third of [parent company and media giant] Warner's total 1980 operating income. In six months Warner stock shot up 35 percent. Atari was the fastest growing company in the history of America" (1984, 73). While Atari was certainly the largest industry player at the time and expanding at an unparalleled rate, it did not hold a monopoly on the video game medium. In fact, comparatively, the game industry in 1980 was remarkably open to new entrants and innovations. Activision, for example, "sold $65.9 million in software [that same year], for a profit of $12.9 million" (Cohen 1984, 83), and there were many extant and emerging competitors to Atari's Video Computer System (VCS), including the Odyssey² (Magnavox), Intellivison (Mattel), and Channel F (Fairchild).[1] At the same time, coin-operated, console, and handheld play were all lively and synergistic. Not only were the arcade and home markets both bustling, but console developers were also actively and successfully drawing from arcade source material (e.g., Atari's VCS adaptation of Taito/Midway's *Space Invaders*). In addition, 1980 was a particularly fertile time for game design. Developers released a superabundance of titles that rank among the most iconic and influential of all time: *Battlezone*, *Berzerk*, *Crazy Climber*, *Defender*, *Missile Command*, *Pac-Man*, *Zork: The Great Underground Empire*, and others. Indeed, while video game history is full of important moments, 1980 may well be the year the medium came of age as a commercial, artistic, and cultural force.

That *Tempest* should have emerged in the wake of this especial élan

is only fitting. It is a landmark game in every sense of the term, from its abstract and futuristic imagery and gameplay to its impact on more than three decades of subsequent game design and development. It is a game that today, more than thirty years after its release, even non-players recognize as somehow unique and important.

And yet, *Tempest* largely remains as enigmatic an artifact as when it was first released. Little has been done to unpack its significance or trace its form and functioning. Part of the reticence to undertake this work can be traced to the state of the field: like its object of focus, video game studies is still nascent and mercurial. It has not yet been wholly annealed by time or tradition, and as a result, much path-breaking is still to be done. By the same token, *Tempest* is also a special case. It does not have a slew of successors that build out its iconography and thus constantly point back to the archetype (cf., *Donkey Kong*'s [1981] Jumpman refashioned as Mario in *Mario Bros.* [1983] and numerous subsequent titles in the Nintendo catalog), nor does it extend a design concept or narrative that is specifically connected to a larger cultural phenomenon that can serve as a focalizer (cf., *Call of Duty: World at War* [2008] and its redeployment of real-world events, geographies, and ideologies). *Tempest* does not attempt verisimilitude (cf., *Zoo Tycoon* [2001]), specific analogy (cf., *BurgerTime* [1982]), or emanate from a product tie-in (cf., *Advanced Dungeons & Dragons* [1982]). The game is surprisingly idiosyncratic in its deployments and evocations, but it has also been concealed from scholars' view by the noise and clutter of game studies' exciting but uneven development.[2]

In this book, we enumerate and analyze *Tempest*'s landmark qualities, exploring the game's aesthetics, development context, and connections to and impact on video game history and culture. Specifically, we:

- Describe the game in detail, unpacking its latent and manifest audio-visual iconography and the ideological meanings this iconography evokes;
- Consider the game generically, that is, in terms of the general styles and logics it initiated, reinscribed, and expanded upon;
- Delve into its design and production history to reveal the creative and industrial processes that shaped the game's development, release, and reception;
- Analyze it as part of a franchise as well as a singular artifact.

Our purpose, ultimately, is to explicate the game and its broader cultural significance.

To facilitate this goal, we have organized *Tempest: Geometries of Play* telescopically, moving from textual analysis to contextual analysis over the course of five chapters. We begin with a close reading and conclude with a cultural one, enhancing the specific observations of each chapter with the broader ones that follow. As in *Tempest* itself, knowing what is coming is key to getting the most out of the experience. We offer, therefore, the following chapter summaries as a kind of strategy guide to the book and its multiple perspectives on one of video game history's foundational titles.

Chapter 1: Reading *Tempest*

Among *Tempest*'s notable qualities is its striking visual design, which is simultaneously abstract, futuristic, and classical. Understandably, part of this design can be traced to the technological limitations of the day: the game's austere, geometric look is as much a function of the machine's Wells-Gardner Color X-Y Monitor and vector graphics as it is an exemplar of *Tempest* creator Dave Theurer's artistic vision and design sensibility. That said, Theurer is clearly exploring the expressive potential of the video game medium differently in *Tempest* than in *Missile Command* (1980), his immediately preceding title (also a landmark game). Whereas *Missile Command* is representational and concerned with off-screen space—the targeting reticle, cities, and surface-to-air missiles look the part (more or less), and the attacking bombs fall from a source beyond the edges of the screen—*Tempest* is more abstract and probes the surface and depth of the screen itself. Its shapes are alien and mathematical, and its design and nonplayer character (NPC) movement emphasize both the possibility of escape (the ubiquitous vanishing point of the "tubes" or levels) and the simultaneous inescapability of the screen (the action is strictly confined to the playfield except for the brief transition between tubes, during which the player's avatar is rocketed down the field toward the vanishing point).[3] The iconography is not so much realistic as expressionistic, a pushing at and playing with the sense-making possibilities of the video game medium and the visual and aural traditions it borrows from theater, film, and television.

In chapter 1, we introduce *Tempest* and offer detailed descriptions of its iconography and play logics, examining the ways in which they reify and experiment with player experience and expectation. For instance, *Tempest* famously toyed with the by-then well-established linearity of arcade gameplay by allowing players to choose their own starting level and skip levels deemed already mastered. With this dynamic in mind—that is, the experience of *Tempest* as arcade game and as something new in the arcade

itself—we closely examine *Tempest* and its play as a way to understand what in fact Theurer created. The game's geometric playfields certainly presaged the three-dimensionality popular today to be sure, but *Tempest* also advanced rail and first-person shooter design (something we take up in chapter 2). In addition, *Tempest* helped concretize for video game designers and publishers the possibility that abstraction could be commercially successful, and thus helped expand the parameters of video games as a creative culture industry. From this perspective, games released decades after *Tempest*, including such notable titles as *Killer7* (2005), *Rez* (2002), and *Katamari Damacy* (2004), are traceable descendants of Atari's 1981 classic; we consider this avenue more fully in chapter 4. Ultimately, chapter 1 focuses on unpacking the formal qualities that enabled a perceptual shift away from the fetishization of representative game aesthetics to a style that was not only more abstract but also—to go by the game's tenure as a staple in any self-respecting arcade in the early 1980s—more fun than its conventional cousins. In the process, we offer a deep description and subsequent interpretation of *Tempest*'s imagery, sounds, play space, and design ideologies.

Chapter 2: A Genealogy of *Tempest*

Complementing *Tempest*'s striking visual design is the way this design and the play it enables draw on, foreshadow, and blur a range of games. For example, many titles prior to *Tempest* occupied semiotic domains that could not have been more clear, despite the era's primitive graphics: *Space Wars* (1977) included two space ships—one the wedge-shaped and rocket-propelled form that later became the iconic vehicle of *Asteroids* (1979), and the other a dead ringer for the U.S.S. Enterprise of television series *Star Trek* fame—an artillery shell, and a star; *Lunar Lander* (1979) sported mountain and cave scenes as well as an easily identifiable representation of the Apollo Lunar Module that had captured the world's attention with its edge-of-the-seat missions from 1969 through 1972; and *Armor Attack* (1980) depicted a war zone populated by jeeps, tanks, and helicopters. Slotting a quarter into any of these games initiated a play experience that resided well within a clearly defined cultural script: shoot the enemy and/or survive the landscape. *Tempest*, on the other hand, offered no such visual cues to clarify for players the genre at hand, despite the fact that it, too, depended on shooter and survival scripts. Consequently, *Tempest* does not nest well within traditional generic categories. Yes, players have to shoot enemies and survive a variety of deadly environmental threats, but the

perspective—the framing of the player's actions within the game's diege-
sis—is ambiguous: is the player controlling a ship's weaponized outrigger
(making the game a first-person shooter), or is the player controlling the
weapon itself (making the game a third-person shooter)? As if to amplify
this ambiguity, the *Tempest* machine's front control panel simply calls the
avatar the "shooter."

Range of motion also configures style designations, and again, *Tem-
pest* resists easy categorization: the shooter is fixed to the near edge of a
three-dimensional geometric form—called a "tube" in the manufacturer's
documentation—within which each battle is waged; by modern conven-
tions, this design suggests a rail shooter. At the end of each battle, how-
ever, that previously confined weapon is suddenly released from its rail
and barrels toward the vanishing point, even while remaining in the play-
er's control and still susceptible to the tube's extant natural dangers (e.g.,
spikes). Chapter 2 explores these and other stylistic paradoxes, as well as
the game's then-unusual elements (e.g., Skill-Step play system, the hyper-
ludic weapon, three-dimensional gameplay, a distinctive physical inter-
face), arguing that *Tempest* ultimately produced a hybrid genre all its own,
one that informs game design right up to the present. In so doing, we
argue, the game also set the stage for an explosion of play-style variation
that has become a minor but defining characteristic of the contemporary
game industry.

Chapter 3: Contexts

Like all creative work, video games are both products of and responses to
their environments. While a given game may diverge from or perhaps even
critique its context, it also distills it, crystallizing the material, cultural, and
ideological events that play host and backdrop to the processes of game
design, production, and play. To understand a game, therefore, one must
understand its context, or rather, its contexts, as there are many and they
are often intertwined (e.g., global, national, industrial, play, and so forth).
Nowhere is this more important than in the study of landmark games, for
it is these games' aesthetic, technological, and interactive contributions and
the contexts they reflect that reverberate most prominently through the
history and meanings of the video game medium and its cultures.

As far as *Tempest*'s contexts are concerned, they were defined by innova-
tion and turbulence. For example, in the late 1970s and early 1980s, new de-
velopments in personal and industrial computing (e.g., the IBM PC) along

with never-before-seen pictures of the solar system snapped by exploratory spacecraft (e.g., *Voyager 1*) sparked excitement in the national imagination and promised to turn science fiction into science fact, the present into the future. At the same time, the deepening freeze of the Cold War (e.g., the US boycott of the Moscow Olympics), an intensification and proliferation of armed conflict around the world (e.g., the Sino-Vietnamese War, the Ugandan Civil War), and a spate of natural and human-made disasters (e.g., the eruption of Mount St. Helens, the Three Mile Island nuclear reactor meltdown) intimated that such a future-made-present might not be quite so rosy. This paradox of hope and fear was magnified by scores of films, television programs, and video games (e.g., *The Road Warrior* [1981], *Battlestar Galactica* [1978–1979], *Missile Command*), which alternately hailed and assailed the possibilities and problematics of computer-mediated, nuclear, and galactic life. It was an ideal (and even ineluctable) incubator for a vector-generated, space-themed shooter based on a designer's dream of invading aliens and made on the heels of a game about a nuclear attack.

Chapter 3 documents these and other social, cultural, and industrial developments that formed the contexts within which *Tempest* was developed, released, and played, and that contributed to the game's iconicity. It also explores the game in terms of designer Dave Theurer's oeuvre, focusing on the overarching interactive as well as aesthetic sensibilities *Tempest* shares with Theurer's other Atari titles.

Chapter 4: Life after *Tempest*

Despite its commercial success and iconicity in game and popular culture, *Tempest* has had a relatively modest post-release life, spawning only a handful of remakes since 1981. Certainly some of this paucity is attributable to the original game's minimalist design; there is not a lot of visual, narrative, or ludic material for developers to build upon easily. But the same might be said for *Tetris*, which by contrast has produced dozens of iterations, sequels, and spin-offs. There is also the issue of *Tempest*'s distinctive physical interface—a heavy machined steel and aluminum bearing/flywheel spinner knob assembly packed with a specially formulated damping grease ("Nyogel 779")—which does not translate particularly well to the standardized and now somewhat prosaic control layouts of home game consoles, handheld devices, and personal computers. Indeed, the game is as much about the haptic and kinaesthetic possibilities of the controller and its seemingly endless spin as it is about spartan and abstract imagery. At the same time,

the game industry has long produced all manner of specialized ancillary controllers for home use (e.g., the Nintendo Power Glove) and even marketed games with their own unique devices (e.g., *Steel Battalion*'s [2002] controller, which has nearly fifty buttons and switches, two joysticks, and three foot pedals). That a *Tempest* iteration has not been prominent among them is surprising given the game's iconic status.

Chapter 4 considers *Tempest* post-release, analyzing the game's subsequent—and curiously few—iterations. We tease out why the game seems very much tied to an historical moment as opposed to transcending that moment the way *Super Mario Bros.* (1985), *Metal Gear* (1987), and other commercially successful games have done so in the form of additional branded titles. We also examine the specific ways in which *Tempest*'s later variations adhere to and diverge from the original's conceptual blueprint, concentrating on the addition of levels, power-ups, multi-player modes, and graphic updates. Ultimately, we contend that the game's relatively anemic post-release life is not so much due to a lack of a "there" there—that is, a genuine shortage of adaptable, recyclable material—or a difficult-to-translate way of interacting with this material, but rather to a strange surplus of meaning and possibility, one that—in tandem with several corporate misfortunes at Atari—has militated against attempts at reuse and redeployment.

Chapter 5: Conclusion

Chapter 5 serves as both a summative and explicative conclusion to the book, recalling as well as expanding the analyses of the preceding chapters as a way to delimit *Tempest*'s overall cultural significance. For example, we revisit the game's unusual inclusion of the user-selected start difficulty (a variant of which is today de rigueur in games of all types), arguing that the feature embodies in detail the dialogical nature of video gaming. Being able to directly alter a game's formal and ludic qualities emphasizes the fact that players inevitably shape the gamic artifact just as their play is shaped by it, and that this dialogue is not necessarily a function of a given technological innovation but rather has long been possible with (and is perhaps even intrinsic to) the video game medium. Importantly, this dialogism is distinct from (though certainly ineluctably connected to) the "readerly" qualities found in any medium. It is, instead, an effect of human-computer interaction, and in particular, the type of human-computer interaction associated with video games: the ability of machines to become active and

largely reciprocal human playmates. Foregrounding this phenomenon so explicitly and so early in the commercial history of the video game is truly one of *Tempest*'s landmark features, a feature that even today influences how games are designed, played, and studied.

In addition to explicating this and other interactive qualities in terms of their cultural import, we also recall *Tempest*'s visual design as an aesthetic and cultural watershed. The game's admixture of abstractionism, futurism, and classicism, for instance, probed the boundaries of the industrial/commercial artistry of the time, suggesting to developer and player alike a sense of commodity beyond common fetishism. With *Tempest*, the game medium was revealed as art in the most canonical sense, that is, not just as an expression of a given sensibility but a worker of magic and miracles, of dialectic and transformation. It is this very quality that today is helping drive the development and proliferation of serious, learning, and avant-garde games.

Finally, we contextualize *Tempest* in terms of its materiality. The game not only figured prominently in the oft-called "golden era" of video games (1977–1984) but also helped brand Atari as a company that produced exceptional and innovative games (a reputation that continues today despite the company's countless missteps and near-death experiences over the years). As a result, *Tempest* is an important guide to understanding the industrial and cultural history of the video game, a history shaped as much by Atari as by any other company.

Together, these five chapters are meant as a conceptual and practical road map of how *Tempest* means, from its technical specifications to its industrial permutations to its cultural significations. Readers will note that in the course of the book, we deploy a fairly stable lexicon to describe these many aspects of *Tempest*. This lexical work was by no means intuitive. Throughout the project, our sources—frequently such things as manufacturers' technical manuals, trade industry promotional materials, and authoritative but fairly obscure historical treatments—seemed specifically designed to thwart any such homogenization, routinely calling the same avatar, legal concept, or mechanical part by a multitude of different names. Undaunted (mostly), we have to the greatest extent possible selected, defined, refined, and otherwise clarified the key terms herein so that through a modicum of streamlining and simplification this book is able to facilitate greater understanding of the subject at hand. At the same time, it is worth pointing out that there are various lexica associated with *Tempest*'s aesthetics

and technologies, lexica that have developed among numerous interested stakeholders—from arcade owners and retro gamers to service technicians and professional geometers. In general, we defer to the authority of the game's various operation and service manuals in our analyses. These manuals were produced by Atari as specific reference and instructional guides for machine owners. The manuals bear the company's imprimatur (as well as the game's official warranty and copyright information) and contain detailed and exact figures, schematics, and nomenclature of game hardware and software. They are, in our opinion, the definitive source for descriptors for a book such as this. For a list of the manuals, guides, schematics, memory maps, and so on that we consulted, see the "Atari" listing in the Works Cited. Where the official corporate documentation proved insufficient for a particular line of analysis—for example, in our discussion of the actual geometric shapes that comprise *Tempest*'s playfield, player avatar, and NPCs—we reference and rationalize these sources appropriately.

One final note: as co-directors of the Learning Games Initiative and its extensive and circulating collection of video games and related materials and paraphernalia, we took this project on with the mindset of archivists committed to the principle of "preservation through use."[4] This approach to archival work prioritizes hands-on experience with artifacts rather than vigilant physical protection and a look-but-don't-touch public interface. This is because the primary mechanism by which video games mean is through use, not only in the play itself that they command but also through the particular kind of play each game enables, constrains, arrests, perpetuates, celebrates, and capitalizes on. It is rare, however, that game scholars have the opportunity to catalog the range and contexts of these experiences—this despite the fact that historically such exercises must surely be among the most important undertakings scholars can do. This book, then, is an attempt to document for posterity how *Tempest* means now and meant in the past. In this sense, *Geometries of Play* extends the principle of "preservation through use" by recording the multiplicities involved in that use, in effect amplifying and propagating the preservative power of use and of the rich but fragile memories such use generates. This is also one of the central motives behind the Landmark Video Game series itself: document the outcomes of preservation through use practices.

As archivists, we mean for this book to cast new and enduring light on an ancient (by the standards of consumer electronics at least) milestone in the history of computer-based games and in the history of play itself. As

game scholars, we mean for *Geometries of Play* to provide others interested in *Tempest* or in its multitude of contiguous cultural contexts an amalgam of starting places and reference points to enrich their work and to extend the field of game studies in both specific and general ways. Finally, as gamers who spent hours and small fortunes peering down at the vivid electrical grids and menacing galvanic opponents of *Tempest*, we mean to honor one of the game industry's landmark creations.