



Benjamin Nicoll

# Minor Platforms in Videogame History

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# Introduction: Failed, forgotten, or overlooked? Methods for historicizing minor platforms

## Abstract

This chapter defines key terms such as ‘minor’ and ‘platform’ and situates the book in relation to existing research on media archaeology, platform studies, and videogame history. It develops three core arguments with regard to the value of minor platforms for videogame and platform historiography: *minor platforms inhabit moments of rupture*, or periods of discontinuity and transitional instability in videogame history; *minor platforms are useful as epistemic tools*, insofar as their recalcitrance compels us to question what we think we know about videogame history and the ontological stability of our object of study; and *minor platforms articulate alternative structures of feeling*—that is, they can provide a window onto suppressed, unrealized, or oppositional cultural and affective patterns in videogame history.

**Keywords:** videogame history, failure, platform studies, minor, media archaeology

Over three days in April 2014, a team of self-described ‘punk archaeologists’ (Caraher et al., 2014)—researchers, historians, and filmmakers—excavated a videogame trash dump in Alamogordo, New Mexico. The site of their dig was videogame history’s most infamous e-waste deposit: the ‘Atari landfill’. This is a site where Atari had, in the midst of its financial collapse in September of 1983, buried thousands of unsold videogame cartridges, consoles, and computers. The three-day excavation yielded 1300 of approximately 700,000 buried videogames, barely scratching the surface of the 30-foot deep landfill. Many of the unearthed videogames remained surprisingly intact, despite sustaining damage as a result of their burial and excavation. The event subsequently made waves in the videogame community and even attracted

widespread coverage in the mainstream press. A Canadian entertainment company facilitated the excavation and filmed the proceedings for a documentary.<sup>1</sup> Alamogordo's city council even decided to take part in the event by auctioning many of the unearthed videogames on eBay. Suffice it to say, this was not a typical archaeological dig.

Perhaps the most unconventional aspect of the excavation was that it promised no surprise findings—nothing that would inspire a radical rethinking of the existing knowledge regarding the landfill and its deposits. Indeed, the excavated materials largely confirmed what was already known—that Atari, facing bankruptcy in 1983 because of internal mismanagement and a faltering North American videogame industry, buried thousands of its unsold products in a New Mexico desert. So, what did videogame historians, players, and scholars stand to gain from this excavation? In an article published in *The Atlantic* (Caraher et al., 2014), the punk archaeologists explain that the purpose of the dig was not to reveal what the landfill concealed, but rather to reveal something about the spectacle of the dig itself. For them, the purpose of the excavation was to show that videogames take on different cultural meanings when placed in different spatial and temporal contexts. An excavated Atari videogame is different to one sold on eBay, for example, because it carries a particular set of cultural 'imaginaries' and mythic connotations. In essence, the excavation was a way of doing videogame *historiography* before videogame *history*—that is, a way of thinking through various historical approaches, methods, and ideas, as opposed to a straightforward process of unearthing previously undiscovered facts or objects.

The Atari excavation is certainly unconventional as far as typical archaeological digs go, but it does raise a number of pertinent (and unresolved) questions that are emblematic of the core concerns of this book. It raises questions regarding the value of treating videogame history as a form of praxis—a way of thinking and doing—rather than an excuse to simply 'dig up' the suppressed past. It throws into sharp relief the residual or nostalgic qualities ascribed to commercially obsolesced videogames. It points to a current fascination with—and struggle to critically grasp—aspects of videogame history that might be considered failed or suppressed. It captures a contradictory desire to simultaneously salvage and fetishize obsolesced media commodities.

1 The documentary, *Atari: Game Over* (Penn, 2014), uses the Atari excavation as a reference point for narrating the North American videogame industry crash of 1983.

This book sets out to address some of these questions by looking at ‘minor’ videogame histories.<sup>2</sup> It deploys the term minor not to imply insignificance, but rather to describe a set of objects, subjects, and spaces that are, for various reasons, ancillary to conventional narratives of videogame history. I contend that, by analysing these minor objects, subjects, and spaces, we can gain unparalleled insight into moments of *difference* and *discontinuity* in videogame history. An overarching aim is to develop critical concepts and frameworks that can give us better analytical purchase on these ostensibly minor histories. I selectively develop these objectives and arguments through five case studies: the Vectrex, the Zemmex, the Neo Geo Advanced Entertainment System, the Sega Saturn, and Twine. These are all examples of what I term ‘minor platforms’.

Platforms, videogame or otherwise, are the subject of much debate and discussion in current media studies scholarship, in part because they defy easy categorization. To borrow Lawrence Grossberg’s expression (1995; 2010), platforms are ‘radically contextual’ insofar as the uses to which they are put (and, by extension, the different ways we can understand them) shift fluidly across cultural, political, and economic contexts. A key argument of this book is that we need to take this radical contextuality into account when analysing platforms. It is possible, however, to start with a basic (though simplistic and apolitical)<sup>3</sup> definition of what platforms are and what they do. First, platforms are hardware or software infrastructures that facilitate creative expression within an imposed set of constraints (such as, for example, videogame development or amateur content creation). To this extent, platforms are also intermediaries that bring together different human and non-human actors for various cultural and commercial purposes. Companies such as Google and Facebook have built extraordinarily dominant business empires out of this basic platform logic, leading to what has been variously identified as ‘platform capitalism’ (Srnicek, 2016), ‘platform governance’ (Gillespie, 2017b), ‘the platform society’ (van Dijck, de Waal, and Poell, 2018), and ‘the platformization of cultural production’ (Nieborg and Poell,

2 I am not the first person to use the expression ‘minor history’. Branden Joseph (2008) uses the same expression to describe his critical biography of the filmmaker and composer Tony Conrad. I develop the term in a similar way to Joseph by drawing on thinkers such as Deleuze and Guattari, as well as by developing the notion of the minor as ‘parasitical’.

3 Tarleton Gillespie (2017a) observes that many of the terms used to describe today’s digital platforms—terms such as infrastructures, intermediaries, openness, and, indeed, the platform metaphor itself—are decidedly value-neutral, and obscure the fact that platforms are political entities that regularly flout their ethical, social, and economic responsibilities (see also Tkacz, 2014).

2018). But this is not a book about those sorts of platforms and platform effects, at least not directly. Rather, it is a book about platforms that exist or have existed on the margins of history. It is about platforms that utilize the ‘platform logic’ for experimental, disorienting, and deterritorializing (as opposed to monopolizing) purposes. It is about platforms that try to do things differently and, in turn, that can help us *think differently* about videogames and their histories—past, present, and future. It is a book, therefore, about minor platforms.

Rather than treating the case studies as historical oddities or ‘lessons to be learned’ about success and failure, throughout the book I make three quite specific arguments about the value of minor platforms for videogame and platform historiography. The first key argument is that *minor platforms inhabit moments of rupture*, or periods of discontinuity and transitional instability in videogame history. These ruptures and transitional instabilities offer archaeological insight into the way videogames are or have been understood as a cultural form, and how this understanding has changed across time and space. The second key argument is that *minor platforms are useful as epistemic<sup>4</sup> tools*, insofar as their recalcitrance compels us to question what we think we know about videogame history and the ontological stability of our object of study. Minor platforms challenge dominant conceptions of what qualifies as an object or subject of videogame history and, in doing so, they provide a means by which to theorize the medium anew. Finally, I argue that *minor platforms articulate alternative structures of feeling*—that is, they can provide a window onto suppressed, unrealized, or oppositional cultural and affective patterns in videogame history. In developing these arguments, it is necessary to deploy an alternative set of analytical and archival approaches, as many of the available methodologies in this area are ill-equipped to deal with the challenges involved in researching minor platforms.

The case studies each offer unique insight into moments of uncertainty, contestation, and experimentation in videogame history. My first case, the Vectrex, concerns a period in the early 1980s when videogame developers were experimenting with different visual systems for constructing graphics,

4 I use the term *epistemic* here in connection with Michel Foucault’s use of the term *episteme*, which, in Timothy Laurie’s (2012: 1) words, ‘can be a powerful critical concept for historicising and politicising the institutional basis of “ways of knowing”—that is, by locating knowledge-formation within its practical milieu of actions, habits, *dispositifs*, and so on’. The term *episteme* is to be differentiated from *epistemology*, which, ‘in the Kantian philosophical tradition [...] is understood as a method of knowing and imputes to its subject an order and consistent faculty for reason and concept-building distinct from pleasures and inclinations’ (Laurie, 2012: 1).

particularly the use of vector and raster-based cathode ray tube (CRT) projection techniques. At the time, videogame developers and hardware manufacturers were in the process of positioning the medium between existing technical systems (such as television and the computer monitor) and long-standing histories of human perception (such as linear perspective and the grid), and the Vectrex is uniquely placed to reflect this transitional period. My second case, the Zemmex, concerns the formation of an informal economy of pirated videogames in South Korea in the 1980s, and the decolonization process involved in the country's 'cloning' of Japanese and North American technologies. In the next case, I analyse the Neo Geo Advanced Entertainment System's 'imaginary' qualities—its way of 'framing' videogame culture and identifying a place within it—as a symbol of the medium's unstable transition from the arcade to the home in the early 1990s. At stake in this transition was a discursive shift in the way people defined the contexts, identities, and values of videogame culture, particularly in relation to expectations around the 'home console' experience. The case of the Sega Saturn concerns the way that fans, beginning in the mid-1990s, started to negotiate the afterlives of commercially obsolesced platforms on fan-created websites. My discussion here raises questions regarding the 'residual' qualities of minor videogames and platforms, as well as the 'dialectic of obsolescence' at the heart of the media archaeological impulse to simultaneously fetishize and salvage memory and materiality. The final case is Twine, a platform that enables me to identify a period of transitional instability in the present. Twine is connected to the so-called 'democratization' of videogame development (which has allegedly been in effect since the early 2010s), and the related collapse of certain subject positions and social values that have come to define videogame culture over the historical periods I analyse.

I have selected these cases because, to borrow Lisa Gitelman's (2006: 12) terms, they 'describe—even, yes, narrate—moments where the future narratability of contemporary events was called into question by widely shared apprehensions of technological and social change'. Although there are many other minor platforms that could be analysed along these lines—platforms such as, for example, Nintendo's Virtual Boy and Sega's Dreamcast, both of which have attracted academic curiosity for their status as historical outliers (Boyer, 2009; Montfort and Consalvo, 2012)—I have chosen to focus on the above cases because they exemplify my core arguments about transition and uncertainty in videogame history. To this extent, this book is by no means an exhaustive history of minor platforms. My aim is not to present a chronological history of minor platforms or construct an encyclopaedic

record of ‘failed’ videogames. Unless I am problematizing them, I avoid conventional metaphors of periodization such as ‘console wars’ or ‘hardware generations’—metaphors that falsely present videogame history as a forward-marching timeline spurred by capitalist competition and self-contained technological developments.<sup>5</sup> Instead, I treat the cases as epistemic tools for ‘opening up’ various critical historical debates, and for highlighting points of difference and discontinuity in videogame history. Rather than bringing a totalizing methodology to bear upon the cases, my analysis is guided by the platforms themselves—their archives, their materialities, and their historical and cultural contexts.

### Media archaeology and the historically minor

A central theme of this book is that moments of rupture and discontinuity in videogame history are marked not only by technological change but also what Michel Foucault calls separate ‘epistemes’, or historically and culturally incompatible ways of knowing. Here, I am drawing influence from ‘media archaeology’, an ‘undisciplined discipline’ (Sobchack, 2011: 323) where Foucault’s archaeological and genealogical methods have been highly influential (albeit contested). Although media archaeology is far from a unified methodology—Thomas Elsaesser (2016: 354) even claims that it is better understood as a ‘symptom’ (an idea further discussed in Chapter Four)—it can be loosely defined as a Foucauldian search for epistemic ruptures, discontinuities, and gaps in media history, as opposed to linear sequences of progress. Elsaesser (2016: 32–33), for example, develops Foucault’s notion of epistemic ruptures in relation to film history. He looks at the distinct cultural logics and discursive formations that ground cinematic technologies in historically disparate ways of knowing (or ways of seeing). Similarly, Siegfried Zielinski (2006a) develops the term ‘anarchaeology’ to describe a form of historiography that abandons notions of origin, causality, and teleology in favour of a discontinuous conception of media history. Media archaeologists typically deploy a combination of discursive archives (books, letters, sketches, and other written documents of this nature) and technical archives (machines themselves) as a way of intervening in dominant conceptions of media history and temporality. Media archaeology therefore provides some useful theoretical and methodological coordinates for thinking through the

5 See Dominic Arsenault (2017: 12) and Carl Therrien and Martin Picard (2016) for relevant critiques of the metaphor of ‘hardware generations’ in videogame culture.



key questions of the book. That is, what can be gained by going against the dominant narratives of videogame history? What does a history of minor platforms reveal that standardized accounts of technological development do not? And what kinds of archives can be deployed for analysing minor media histories?

I am not the first to apply media archaeological concepts to an analysis of videogame history. Videogame historians have drawn on media archaeology to raise questions regarding the medium's 'deep time' lineages (see, for example, Huhtamo, 2005; Parikka and Suominen, 2006; Pias, 2011; Parisi, 2013) as well as its unruly voices and bodies (Nooney, 2013). Yet, although the media archaeological moment has led to a richer and more comprehensive engagement with videogame history, it has also contributed to a tendency to fetishize rather than critically account for failure and marginality. Media archaeologists often invoke terms such as 'suppressed', 'neglected', 'forgotten', 'dead ends', and even 'losers' (see Huhtamo and Parikka, 2011: 3) to describe their objects and subjects of study, but rarely do they reflect critically on why they are doing so, or whether it is even fair to characterize the historically minor in this way. Media archaeology, and videogame history more generally, lacks a coherent conceptual apparatus for explaining why ostensibly marginalized, forgotten, or overlooked objects and subjects are critical to our conception of the medium today.

Laine Nooney (2013: n.p.) provides an important take on these issues by problematizing videogame history's focus on technical objects rather than bodies, spaces, and memories. She observes that the current archaeological approaches are largely concerned with widening the historical remit such that more and more objects can be caught up in the scope of analysis. Yet, when this revisionist logic is applied to archaeologies of gender—when, for example, women are 'added on' to videogame history—it often amounts to a tokenistic gesture that sidesteps a genuine confrontation with the politics of marginality. As Nooney observes, given that media archaeology is purportedly interested in recuperating lost and suppressed narratives of media history, it is surprisingly ill-equipped to deal with historically marginalized identities, subject positions, and structures of feeling (cf. Anable, 2018a: 5–6). It tends to gloss over the historical and social infrastructures that ensured these subjects were written out of history in the first place. What is lacking, and what this book aims to develop, are critical frameworks for understanding the political and cultural meanings of marginality in videogame history.

To this end, I develop the notion of the 'historically minor' as a heuristic device (rather than a stable category) to gain a more nuanced perspective on

what normally passes as failed, forgotten, or marginal in videogame history. Most conceptions of history have major and minor moments, just as major and minor voices can be said to inhabit any cultural formation. The minor is often defined in terms of its subordination to the major, in that major voices and social structures often hold power over their minor counterparts. Yet, as Walter Benjamin notes in his 'Theses on the Philosophy of History', the hierarchical (and binary) distinction between major and minor can always be broken down and retroactively reconfigured. 'A chronicler who recites events without distinguishing between major and minor ones', he writes, 'acts in accordance with the following truth: nothing that has ever happened should be regarded as lost for history' (Benjamin, 1969a [1940]: 254 [III]). Benjamin (1999: 458 [N1,6]) further develops this position in *The Arcades Project* when he argues that 'there are no periods of decline'. Once recuperated in the present, minor histories may destabilize the supposed hegemony of the historically major. However, Benjamin is not saying that we should dissolve the distinction between major and minor entirely. The reason for this is that minor events may contain a disruptive potential *by virtue of* their marginal status. In this view, minor histories, cultures, and objects are not solely defined negatively—that is, in terms of their inability to obtain a majority status or reach a mass audience. Indeed, minor histories can deliberately resist mainstream assimilation. Minor histories can, as Branden Joseph (2008: 51) notes, 'parasitically'<sup>6</sup> feed off—yet not completely assimilate to—major discourses and movements. The historically minor thus contains what Benjamin (1999: 392 [K2,3]) calls an 'explosive potential' that, when 'ignited', can refresh our awareness of the present and undermine our collective sense of history.

In political and popular rhetoric, the term minority is often used to refer to various subgroups living in a society. Timothy Laurie and Rimi Khan (2017: 2) identify a common strain of 'political violence' underlying attempts by majoritarian social forces to reduce 'systemic structures of social oppression and exploitation' to the empty signifier of 'minority issues'. It is possible, however, to mobilize and theorize the concept of the minor without reinscribing the political violence underlying these '*processes of*

6 Building on Joseph, I am using the term 'parasite' here in connection with Michel Serres's (1982) *The Parasite*. In Serres's definition, the parasite is a figure (that could be human or non-human) that compromises communication between entities by creating 'noise' or 'static' in the communication channel. However, as Serres notes, noise and static are integral to a functioning communication system. Without noise, there is no communication. In this sense, minor platforms can parasitically disrupt, intervene in, or draw productive energy from major discourses and movements, without fully assimilating to said discourses and movements.

*minoritization*' (Laurie and Khan, 2017: 2, italics in original). Gilles Deleuze and Félix Guattari (1986) offer one such theorization in their study of Franz Kafka, where they identify three facets of what they call 'a minor literature'. First, Deleuze and Guattari argue that Kafka's minor literature resists the geopolitical logics of territory. Although Kafka wrote in German, his literature is, they argue, inflected with the idiosyncrasies of Prague German. Prague German is a 'deterritorialized language' that was spoken mainly by Czech families living in Prague at around the turn of the 20th century (Deleuze and Guattari, 1986: 17). According to Deleuze and Guattari, Kafka deploys Prague German as a means of drawing attention to its unruliness within a clearly demarcated, major linguistic structure. Second, minor literature is political. It resists master narratives of, for example, 'major' literary figures that single-handedly reinvent the path of literature within any given geopolitical context. Third, by cutting across territorial borders, minor literature belongs to the multiplicity. It takes on what Deleuze and Guattari (1986: 17) call a 'collective value'. Although my use of the term minor is not explicitly building on the definition offered by Deleuze and Guattari, there are a number of similarities. Minor platforms reveal historical ruptures that deterritorialize videogame history's well-trodden master narratives. They articulate minor patterns of use and affect within major structures of feeling. The notion that the minor can take on a collective or even emancipatory value is especially pertinent when considered in relation to Twine, a platform examined in Chapter Five of this book. Twine is a platform that boasts no 'genius' figurehead or 'master' videogame developer, but ostensibly belongs to a multiplicity of authors and players. It uses a minor, somewhat neglected language of videogame design—the text adventure genre—to intervene in a major structure of feeling. It is therefore a minor platform that very much exists within—yet parasitically undermines—a major monoculture.

This is why I opt for the term minor over the imprecise and problematic term 'failure'. Media historians have long noted that binary narratives of success and failure are technologically deterministic (not to mention heteronormative, as will be discussed). We tend to assume that a technology's success or failure can be objectively attributed to its underlying hardware and its capacity to meet traditional notions of consumer demand. Yet, as scholars such as Graeme Gooday (1998: 270) argue, notions of technological success and failure are better understood as social constructions. When a technology is labelled a failure, it is usually because it does not cohere with the prevailing norms, judgements, and expectations of a given social formation—or what Koen Vermeir (2006: 350) calls the agreed-upon 'core

functions' of a technology—rather than because of an ineffective marketing strategy or lack of consumer demand. Moreover, the social values and expectations bestowed upon technologies are historically and culturally contingent. A technology once considered successful may be looked upon retrospectively as a failure because it does not align with current scientific schemas or belief systems. In turn, a technology once considered a failure may be deemed 'ahead of its time' when re-contextualized within current trajectories of progress and innovation. As Kenneth Lipartito (2003: 76) writes, '[a]fter any number of circumstances and failure might have been a success'.

To paraphrase Dominic Arsenault (2017: 3), the question here should not be 'what is a failed platform?' but rather 'for whom does the platform fail?'. In his platform study of the Super Nintendo Entertainment System (SNES), Arsenault begins with a seemingly untenable claim: the SNES—one of the most celebrated videogame platforms in the West, enshrined in many-a-gamer's 'best of all time' list—was a failure. Arsenault corroborates this claim by analysing the SNES from the vantage point of Nintendo's business history. With the SNES, Nintendo squandered an incredibly advantageous (though arguably unsustainable) market position (which it had cultivated through the Nintendo Entertainment System) and ushered in a conservative business model that contributed to the company's economic downturn in the late 1990s and early 2000s. In his discussion, Arsenault (2017: 4) draws attention to the lack of clearly defined metrics for evaluating technological failure, especially from a business perspective:

Perhaps we could count the number of games produced for a platform because, after all, gamers buy consoles to play games. Or maybe we should count the total number of software sales because games that don't sell are only unwanted clutter and expenses for their publisher. However, platform owners may not care that third-party developers' games do not sell if their own games are selling and the profit margins are high; maybe the only metric we should measure is the platform owner's hardware and software revenue? [...] And on and on it goes.

As Arsenault illustrates here, a scientific definition of failure will always elude us because success and failure are social categorizations—categorizations that, moreover, are informed by specific disciplinary assumptions. It is far more important, then, to ask 'for whom do technologies fail?'—that is, how is the designation of 'failure' agreed upon in a social register and subsequently assigned to certain objects and subjects in media history?

Technologies deemed to be failures are usually only valued for their capacity to teach us lessons about improvement and progress, after which they are forgotten. But failed or minor technologies can have value outside of their utility to consumerist narratives of progress. As Lipartito (2003: 53) writes,

Failed technologies, far from being dead ends or even mere cautionary tales, may persist well beyond their material life. They may reinforce rather than undermine technological paths, even when those paths are questionable or undesirable. Failures [...] can echo like footfalls down corridors not taken, leading us to the present.

The problem with most ‘from-to’ approaches to media history is that they tend to leverage binary notions of success and failure without adequately addressing the social values that inform these categorizations. ‘The deeper [one investigates] technologies previously consigned to the historical scrap heap’, writes Ben Marsden (1988: 411), ‘the less convincing the categorization “failure” becomes; the more skilfully the historian recovers and re-structures the social life of failed artefacts, the more vibrant they become’. An analysis of minor platforms reveals that videogame history is anything but a linear path wherein winners overcome losers in their aimless pursuit of progress. Rather, it reveals that videogame history is fraught with irreconcilable tensions, contradictions, and ruptures. As Paolo Ruffino (2018: 93) argues, the present should not be viewed as a ‘stable and safe destination point’ for these heterogeneous histories. Rather, the present is an ‘unstable position’ (Ruffino, 2018: 102) from which to view what Benjamin (1969a [1940]: 257 [IX]) calls the piled-up ‘wreckage’ of the past, which threatens to collapse onto the present at any moment.

In videogame history, ruptures can be thought of as moments when taken-for-granted ways of making, playing, and defining videogames are suddenly thrown into question. Ruptures signify social transformations and disruptions to the means of production, but they are not ‘discovered’ in history like artefacts of an archaeological dig. Jonathan Crary (1992: 7) observes that ‘there are no such things as continuities and discontinuities in history, only in historical explanation [...] where one locates ruptures or denies them are all political choices that determine the construction of the present’. In this sense, ruptures in videogame history are often directly linked with what Raymond Williams (1977: 163) calls ‘crises of technique’—that is, ‘a sense of crisis in the relation of art to society, or in the very purposes of art which had been previously agreed on or taken for granted’. Videogame

scholars, critics, and players often identify ruptures in moments when videogames faced economic, social, or identity crises, perceived or actual. Even a cursory glance at the academic and popular literature on videogame history confirms Williams's observation. Moments such as, for example, the 1983 crash in the North American videogame industry (Wolf, 2012), the emergence of kinaesthetic control schemes and 'casual' videogames in the 2000s (Juul, 2010), and more recently, the 'democratization' of videogame development tools (kopas, 2015), have each compelled scholars and critics to rethink existing conceptions of what videogames are. They are moments that prompt us to ask not only 'what are videogames?' but also '*why* or *when* are videogames?' and 'what can we claim to *know* about videogame history?'. That is, where did videogames come from, what are their 'conditions of existence' in a Foucauldian sense (Parikka, 2012: 6; Elsaesser, 2016: 98), and how are they reshaping culture, space, and ways of knowing along the way?

Jesper Juul (2016: n.p.) gets at something similar when he argues that historical developments in videogame design force us to 'reconsider the *ontology* of the object of study'. When new videogame design patterns and genres emerge, he argues, we are compelled to go back through history and search for precedents, thus expanding the medium's historical remit. As he writes, '[v]ideo game history continually asks us to reconsider what it is we are studying, when we study video games' (Juul, 2016). However, where Juul (2016) argues from the perspective of an 'evolving ontology' of design patterns that force us to 'acknowledge facets of games we had previously overlooked', this book argues something like the inverse. Although Juul's approach is certainly valuable, it follows something of an evolutionary logic routinely problematized by media historians. Zielinski (2006a: 3), for example, characterizes the evolutionary approach to media history in the following way: '[e]verything has already been around, only in less elaborate form: one needs only to look'. The problem with this line of thought, as Zielinski observes, lies in its assertion that anything seemingly new or novel must possess a clear and identifiable connection with a more 'primitive' aspect of the past. Rather than re-examining the past through the 'evolving ontology' of the present, I argue that we can re-conceptualize the present—what we think we know about videogame history and theory in our current episteme—by going back to the suppressed ruptures of the past. This is the basic idea informing Zielinski's (2006a: 3) 'anarchaeological' approach to historical description, which he summarizes in the following way: 'do not seek the old in the new, but find something new in the old'.

Minor platforms are useful in this regard because they enable us to better understand the discontinuities that inhabit ruptures. As Foucault

(2002 [1969]: 9) observes in *The Archaeology of Knowledge*, conventional histories often treat discontinuities as historical inconsistencies that need to be smoothed over or rearranged to produce a semblance of progressive continuity. Yet Foucault argues that by intentionally honing in on these discontinuities—as well as the epistemic or discursive disjunctures they imply—we can see history for what it really is: a process defined not by linear progress but instead by contradictions and tensions. As he writes, discontinuity ‘is both an instrument and an object of research’—it is, in other words, an element of historical analysis *and* a quality that can be identified in historical artefacts (Foucault, 2002 [1969]: 10).

Minor platforms are discontinuous in that they express the social and technological instabilities of their cultural periods. In reflecting on the discontinuous nature of minor platforms, I have been particularly influenced by Jesuit philosopher Athanasius Kircher’s oft-cited illustration of a magic lantern from the 1671 edition of his book *Ars Magna Lucis et Umbrae* (*The Great Art of Light and Shadow*) (Figure 1). Here, Kircher depicts the magic lantern as a storytelling device. A glass slide containing eight separate scenes—one of which is projected onto the wall—is depicted in front of the lens. However, as scholars have observed, Kircher’s illustration depicts the light source, lens, and slide in the wrong order (Musser, 1994: 21; Gansing, 2013: 264). For the projection to be correctly focused and oriented, the glass slide should be positioned in front of the lens rather than behind it, and the slides should be inverted rather than upright. Charles Musser (1994: 21) attributes this error to Kircher’s lack of ‘firsthand experience’ with the technology. However, I am more persuaded by Kristoffer Gansing’s (2013: 264) interpretation of this ‘mistake’ as a reflection of Kircher’s general understanding of the world as what Zielinski (2006b: 32) calls a ‘dissonant multiplicity, fraught with contradictions and tensions’. It is well documented that Kircher sought to capture the multiplicities of the artefacts and natural phenomena he studied. His view of the world was dialectical and anti-positivist, which is to say that he viewed objects and phenomena as inherently contradictory and always processual. Vermeir (2006: 341) notes that ‘Kircher’s oeuvre seems to resemble an illusionist theatre in which nothing is what it seems, and his play with illusion and reality, with secrecy and openness, confuses the modern reader’. His seemingly ‘incorrect’ illustration accurately captures the discontinuous and transitional nature of the magic lantern. It depicts a projection technology in transition from its early room-sized arrangement (as in the camera obscura) to its black-box form known as the magic lantern (see Crary, 1992: 30–31; Gansing, 2013: 264). In a similar

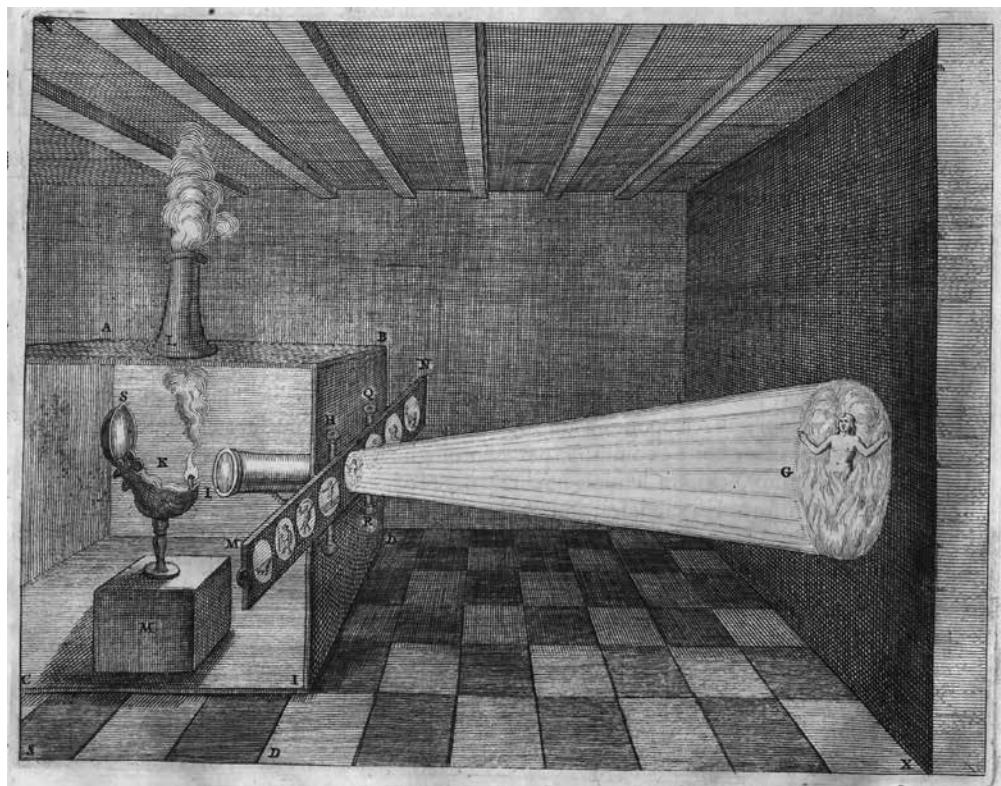


Figure 1. Athanasius Kircher's magic lantern illustration. From Georgibus de Epibus, *Romani Collegi Societatis Jesu Celeberrimum* (Amsterdam 1678: 39). Retrieved from: <goo.gl/LvgQDz> (accessed 9 April 2018).

vein to Kircher's magic lantern illustration, this book recognizes that videogame history is not linear and predictable but rather processual and transitional. It uses minor platforms as epistemic tools for identifying difference, discontinuity, and alternative structures of feeling in videogame history.

### Videogame history, the archive, and minor platforms

Rather than treating videogame history as a taken-for-granted narrative or as mere background information, some scholars are beginning to call for more sustained, critical, and culturally specific historical analyses of the medium. One of the more important observations to come out of this emerging body of research is that videogames are not (and perhaps never were) a 'new'



medium. Their antecedents can be extended back through histories of painting and sculpture (Kirkpatrick, 2011), cinema (Manovich, 2001), early amusement devices (Huhtamo, 2005), and non-digital games and sports (Salen and Zimmerman, 2003). Videogames have existed as a recognizable technological form since at least the mid-twentieth century, when they were tied to military-academic-industrial experimentation with artificial intelligence and technologies for cybernetic control. Nick Dyer-Witheford and Greig de Peuter (2009: 10) and others (Crogan, 2011; Keogh, 2015) argue that early videogames such as *Tennis for Two* (Higginbotham, 1958) and *Spacewar!* (Russel, 1962) emerged from something of a countercultural—albeit gendered—realm of male hackers who sought to ‘deterritorialize’ videogames from the grip of military cybernetics and nuclear physics, thus ‘setting the stage for their “reterritorialization” by capital in pure commodity form’. The story tends to go that, after experimenting with videogames in university environments, student hackers then went on to form their own businesses in the 1970s, and an industry was subsequently born, crashed, and rebirthed by Japanese companies such as Nintendo and Sega in the mid to late 1980s.

This timeline can, however, be criticized for being too evolutionary in nature;<sup>7</sup> too reliant on what Gitelman (2006: 61) terms a ‘production/consumption dichotomy’ that, as I will discuss in Chapter Five, situates social and cultural change squarely within dominant narratives of (male) inventors and entrepreneurs as opposed to more variegated patterns of use, reception, and feeling. Put simply, videogame history is not just a history of one successful technology replacing the next. It is also a history of objects, bodies, and communities that never quite made it; that struggled to make their voices heard; that aggravated against the conventions of the day; and that never enjoyed the commercial success or recognition of their major counterparts.

Moreover, there are a number of oversights and inaccuracies associated with the aforementioned timeline that, until recently, have gone unquestioned. An often-recurring thread in popular narratives of videogame history is that the industry experienced a global crash in 1983. This crash was supposedly catalysed by Atari’s failure to contain the exigencies of a rapidly inflating videogame market in North America, which led to

7 The ‘evolutionary’ view of videogame history is at least partly symptomatic of the commercial imperatives of the videogame industry. Here, technological development is framed as a sequence of generational advancements in graphics and hardware, spurred by moments of ‘technological warfare’ (see Therrien and Picard, 2016).

an over-saturation of low-quality software (see Dyer-Witheford and de Peuter, 2009: 13-14; Montfort and Bogost, 2009a: 133-134; Kirkpatrick, 2013: 57). Henry Lowood and Raiford Guins (2016: xv) write that the industry crash is often deployed as a ‘temporal marker for establishing a “pre” and “post” periodization’ of videogame history. However, researchers such as Alison Gazzard (2013) and Graeme Kirkpatrick (2015) cite the emergence of a thriving microcomputer scene in the United Kingdom at around this time as evidence that the supposed industry crash was mainly experienced in North America, and did not impact other regions as extensively as previously thought. My chapter on South Korea’s informal videogame industry offers further evidence that minor videogame cultures flourished rather than stagnated in the 1980s. Here, I tap into the largely untold history of videogame piracy in East Asia, and the informal economies of production and consumption that emerged in the shadow of the North American and Japanese videogame industries in the 1980s.

Videogame history is often conceptualized in binaries such as pre-crash and post-crash, local and global, production and consumption, success and failure, and, indeed, major and minor. The binaries implied by these terms should not be imagined as fixed but instead permeable and open to reinterpretation. Like Benjamin, who advocates for a form of historiography ‘without distinguishing between major and minor’, my intention is not to render the distinctions between these terms irrelevant, but rather to explore their inherent contradictions and slippages. What are we missing when we conceive of videogame history in such binary terms? When is it productive to frame videogame platforms as minor platforms, and what can be gained by pursuing this line of inquiry?

In answering these questions, I opt for a ‘constellational’ view of videogame history at the expense of prolonged geographical specificity.<sup>8</sup> As Zielinski (2013: 14) notes, a constellational or ‘bird’s eye view’ of media history has distinct advantages:

From time to time, a deep-time view of developments suggests that one should risk a quick look from a bird’s eye view [...] As an experiment, such a view can be helpful. With regard to history, it is informed by the interest in understanding the past not as a collection of retrievable facts but as a collection of possibilities.

8 While the book as a whole is not aiming to provide a geographically focused account of videogame history, certain chapters do set out to describe the regional and transnational dynamics of the case studies.

For Zielinski, media history should not simply be treated as a process of ‘filling the gaps’. Filling historical gaps is an important and worthwhile endeavour, but a constellational approach can also be helpful in uncovering what Zielinski (2006a: 258) calls historical ‘poetics’ that cut across the past, present, and future of technological development. As Benjamin (1999: 462 [N2a,3]) also notes, a constellational view of history enables us to grasp the true ‘image’ or picture of the past in the present, in fragmented or ‘photomontage’ form:

It’s not that what is past casts its light on what is present, or what is present its light on what is past; rather, image is that wherein what has been comes together in a flash with the now to form a constellation. In other words, image is dialectics at a standstill.

A constellational view also implies that the gaps between fixed points of history are just as important as the points themselves. In a constellation, it is the gaps between points where our imaginations are at work. In fact, gaps are the true structuring elements of constellations—they are the blank spaces onto which we project imagined pathways. But these blank spaces, these silences, are also where minor histories reside. By exploring them, we may uncover new pathways, or perhaps even deeper and more intriguing silences. Moreover, these silences may explicitly operate from a position of marginality, rather than from a desire to occupy a more central place in the overall constellation.

The constellational approach does have its limitations, namely that it sacrifices a certain level of micro-historical analysis for the sake of more far-reaching—yet no less rigorous—insights into the nature of technological change. Given its occasional focus on analysing the past from the vantage point of the present, the constellational approach risks what Nooney (2018: 73) describes as a ‘history told front to back’. That is, a history where the novelty or influence of a particular videogame technology, company, or creator is projected anachronistically from the present onto the past. But this is also why I avoid validating the case studies purely for their weirdness, obscurity, or novelty. Although I argue that the platforms are notable for their status as different or discontinuous objects, I also want to acknowledge that they would not necessarily have seemed this way when they were first envisioned, manufactured, and marketed. My aim is not to present the platforms as obscure failures or weird novelties. Instead, it is to come up with specialized frameworks for unpacking their unique differences, which can then be used to construct a new ‘image’ of the past.

For these purposes, I have found many of the available methodologies in media and game studies useful in some respects, but insufficient in others. One of the more influential methodologies in this area is Nick Montfort and Ian Bogost's (2009a) 'platform studies' approach, which first appeared in the book *Racing the Beam: The Atari Video Computer System*, and has since spawned a whole series of books on MIT Press.<sup>9</sup> Montfort and Bogost's methodology is mainly focused on the underlying infrastructures of platforms and their various affordances to both enable creative expression (which, for them, is interchangeable with creative programming) and also limit, constrain, and change it. As Guins (2016a: 180) writes, the platform studies methodology offers a productive framework for treating 'a game's "flaws" or "failure" not as a reason to reject or ridicule the process of development or even the developer but to address these circumstances within a techno-historical context'. To this extent, the platform studies methodology is influential to a number of my chapters. In Chapter One, for example, I discuss how the affordances of a vector-based home console—the Vectrex—enabled programmers to explore alternative methods of visualization and player-machine interfacing.

In other ways, however, the platform studies methodology does not stand up to scrutiny when tested on the case studies of this book.<sup>10</sup> The platform studies approach requires an extensive software archive to assess the creative output facilitated by any given technology. For Montfort and Bogost, the cultural impact of a platform consists in its programmability—the way its material infrastructure affords the creative work of videogame developers and programmers. This programmability can, according to them, be examined through the lens of a platform's software catalogue. Minor platforms present obvious challenges in this regard, in that they are unlikely to possess such diverse or accessible software archives. Take as an example SNK's Neo Geo Advanced Entertainment System (or 'AES'), a platform examined in Chapter Three of this book. The Neo Geo AES is

9 It is important to acknowledge that Montfort and Bogost's platform studies approach is not the original or only way to study media platforms. It is one among many platform studies; however, I focus on it here because of its specific influence in game studies and platform historiography.

10 It is worth noting that recent books in the platform studies series have sought to expand Montfort and Bogost's original methodology. Gazzard's (2016: 11) study of the BBC Micro, for example, draws on ideas from media archaeology to 'place the BBC Micro in a larger historical context [...] including what has been documented through television programs, magazines, user manuals, games, software and the progression of hardware during the lifespan of the platform'. Likewise, Arseneault's (2017: 5) study of the SNES aims to 'consider platforms not only as technological objects but also as the embodiments of marketing forces that shape the creative works performed on that platform'. However, even these later contributions adhere quite closely to Montfort and Bogost's prototypical methodology.

a domesticated version of SNK's 'MVS' arcade machine hardware, and is designed to support an identical software catalogue. This makes the platform particularly difficult to analyse using Montfort and Bogost's methodology, as its hardware is specifically designed to support the same software as its arcade machine counterpart. The Zemmex, which is discussed in Chapter Two, presents similar problems. The Zemmex is a platform whose software catalogue consists almost entirely of imported or cloned Japanese MSX computer games. In order to grasp the cultural meanings of platforms such as the Neo Geo AES and the Zemmex, it is necessary to deploy an alternative set of frameworks and archives.

The archives of media history broadly fall into one of three (admittedly reductive) categories: *discursive*, *technical*, and *affective*.<sup>11</sup> One could, for example, analyse the discursive archives that surround media—written documents, advertisements, blueprints, sketches, and so on—as resources for intervening in institutionalized narratives and recuperating marginalized memories and objects. In his book *Illusions in Motion*, for example, Erkki Huhtamo (2013) investigates the history of the moving panorama by drawing on discursive materials such as posters, letters, newspaper articles, and exhibition catalogues. Huhtamo is tacitly drawing on Foucault's *Archaeology of Knowledge* (2002 [1969]), where the archive specifically represents the body of knowledge from which discursive statements may be constructed. Alternatively, one could follow the technical approach of a media archaeologist such as Wolfgang Ernst (2013: 196), who argues that the archive of media history is more clearly articulated in the 'ruptured' forms of temporality registered within machines themselves. Ernst (2013: 196) argues that this approach is immanent to Foucault's archaeological method, which stresses the importance of abandoning the search for beginnings or origins in historical research, and is more concerned with 'discontinuities, gaps and absences, silence and ruptures'. Finally, as Anable (2018a: 105) discusses in her book *Playing with Feelings*, one could analyse media objects as affective archives that 'index, collate, activate, and give shape to emerging and amorphous feelings about broader social conditions'. Perhaps unsurprisingly, Anable (2018a: 134) also summons Foucault's archaeological approach in her reflections on affective archives, which she reads as a method for identifying the practices, uses, and feelings encoded in media objects.

Rather than working from a specific conception of the archive, this book seeks to resolve the trifurcation between the above approaches by

11 There are, of course, other ways of conceiving of the archive, some of which will be discussed and developed in later chapters.

drawing upon and intermingling their methodological potentials, thus overcoming their respective biases. Following the platform studies method (as well as scholars such as Ernst), I am interested in what the materiality of videogame platforms reveals about their ‘media essentiality’. But I also argue that we cannot fully grasp the cultural significance of minor platforms without considering their discursive and affective contexts as well. As indicated above, one of the challenges involved in researching historically marginalized technologies is searching for archives in unorthodox locations, as traditional hardware and software archives can be less reliable as starting points. As such, discursive materials such as videogame magazines are important archival sources in this book, especially in Chapters Three and Four. Magazine articles and advertisements are useful not only for uncovering key historical details about particular videogames and platforms, but also for understanding how people perceived, used, and imagined these technologies in their historical contexts. I am also interested in the relational effects that escape the ‘authority’ of the institutionalized archive and its storage capacities, and how they can be adequately accounted for in historical research. This relates to calls made by scholars such as James Newman (2012) to address the challenge of preserving not only the hardware and software archives of videogame history, but also the ephemeral performances associated with videogame play itself. I return to these questions in Chapter Five, where I investigate the relational aesthetics involved in the documentation of an ‘unarchiveable’ videogame, *Sonic X-treme*.

I also reject the idea—implicit in the platform studies approach—that there can be a unified methodology for studying videogame platforms and their histories. As Caetlin Benson-Allott (2016: 343) points out, although the term platform is often invoked in game studies research, its meaning ‘is neither self-evident nor easily defined; we do not know it when we see it or even when we read about it’. Platforms are not just standardized pieces of hardware that enable people to create software. Some scholars have critiqued Montfort and Bogost’s platform studies approach for adhering too closely to this generic definition, observing that it is optimized for its prototypical case study—the Atari 2600—but that it runs into several methodological and conceptual problems when applied to other, more complex case studies (McCrea, 2011: 390; Leorke, 2012: 265). In a similar vein, Anable (2018b) offers an important feminist critique of platform studies by observing that it all-too-easily dispenses with a platform’s ‘surface effects’. Platform studies, she argues, tends to brush aside questions of ‘subjectivity, agency, race, and sexuality’ in favour of a more ‘penetrating’ archaeological gaze that aims to

expose the inner-workings of the ‘black box’ (Anable, 2018b: 137). Ironically, this masculine archaeological gaze serves to reaffirm the dominant ideology of the platform society—that is, the belief that platforms are discrete, unchangeable, and indifferent entities that structure our everyday actions and bodily capacities in politically neutral ways (Anable, 2018b: 138). A ‘feminist intervention’ in platform studies, she argues, ‘remind[s] us that platforms, like their creators, users, and critics, can also be curiously porous, queerly promiscuous, and radically leaky’ (Anable, 2018b: 139). I will return to a discussion of the ‘surface effects’ of platforms in the conclusion to this book, where I discuss alternative bodily ‘orientations’ to difference and discontinuity in videogame history.

Not only do videogame platforms possess radically different ontologies—they are radically contextual—but the uses to which they are put can also differ across time and space. Programming is not the only way people exercise creative expression with and through videogame platforms (see Apperley and Parikka, 2016: 12–13). Platforms may perform various roles and facilitate various practices throughout their life stories—they have ‘biographies’ (Burgess and Baym, 2016)—and these roles and practices may exceed dichotomous categories of production and consumption. They may, for example, be used as tools for the articulation of political and social change (as in Chapter Two). In their commercial afterlives, they may become a target of ‘disinterested’ residual and aesthetic mediation (as in Chapter Four). They may also be analysed by researchers as objects that perform narrative or theoretical work in explaining gaps, tensions, and ruptures in videogame history. For this reason, in each chapter I deploy different methodologies and conceptual frameworks to best suit the platform at hand. This means that the cases are each treated differently: sometimes they are examined from empirical angles, at other times they are brought into contact with different bodies of theory. Sometimes their histories overlap, at other times they diverge in important ways.

What this illustrates is that videogame platforms are fundamentally relational. Their materialities are grounded in historically specific regimes of knowledge and, to borrow Williams’s expression, ‘structures of feeling’. As stated earlier, platforms can be understood as infrastructures that intermediate between different objects, subjects, and spaces.<sup>12</sup> Benson-Allott (2016:

12 Guins (2016b: 69, italics in original) uses the term ‘system’ to describe a similar set of relational effects generated by platforms: ‘*system* refers not to a discreet object but an aggregation of interdependent things: a network of intermingling social practices and technological processes as well as actors necessary for powering, running, and playing the “games console”’.

343) captures the multiplicities of this definition well when she argues that a videogame platform is a ‘concept, a thing, and a philosophy’. As she argues,

Platforms are the material bases of games; they are the *thingness* of games that allows us to recognize how our thingness works with that of a console or operating system and by extension the larger material and political world of which we are all part. (Benson-Allott, 2016: 343)

Developing Benson-Allott’s notion of a platform as both a thing and a concept, I argue that minor platforms present us with ontological and epistemological questions. We must ask not only what a minor platform is or what it does, but also how it shapes ways of knowing and feeling videogame history. Videogame platforms are things that ‘think’; they are ‘cultural documents’ (Galloway, 2006: 14; cf. Williams, 1961: 48) that possess a discursive power to speak to us, to furnish us with new ways of thinking and imagining the medium’s theoretical and historical trajectories. Minor platforms are important case studies for videogame history because, to borrow Vermeir’s (2006: 358) writing on failed technologies more broadly, they can ‘subvert our categories of what we think should constitute an artefact, machine, or instrument [...] they present us with a problem of interpretation, but their recalcitrance might also help us construct a new image of the past’. Minor platforms are valuable as epistemic tools because they compel us to question what we think we know about videogames and their histories. As I explore further in Chapter Two, this approach means ‘listening’ to what minor platforms and their archives are saying to us, and thinking ‘with’ them and their practitioners in order to challenge existing frameworks for studying the medium and its histories.

### Minor structures of feeling

Any given videogame platform implies a particular vision—or ‘structure of feeling’ in Raymond Williams’s terms—of how bodies and technologies should be disposed or oriented to each other. For Williams (1961: 47), structures of feeling are the affective patterns connected to the culture of a period—the quality of life at a particular place or time: a sense of the ways in which the particular activities combined into a way of thinking and living’. Williams (1961: 48) acknowledges the apparent contradiction inherent in this notion, stating that a structure of feeling ‘is as firm and definite as “structure” suggests, yet it operates in the most delicate and least



tangible parts of our activity'. That is, the term 'feeling' refers to something intangible and subjective, yet the idea of a 'structure' of feeling implies that these affective patterns are, to some degree, always shaped by more 'fixed and explicit [...] institutions, formations, [and] positions' (Williams, 1977: 128). Structures of feeling are, in this sense, affective patterns that are in the process of being structured. They are always processual or, in Williams's (1977: 126) words, 'emergent'—grasping toward a future 'not yet fully articulated'. Structures of feeling often pre-empt or even premeditate ideology, representation, discourse, and recognizable emotions. They are, according to Williams, expressed in the most quotidian aspects of everyday life: in our texts, through our mediated techniques, how we dress and speak.

The study of structures of feeling is especially pertinent in light of our current cultural period where, as Graeme Kirkpatrick (2011: 195) notes, '[v]ideo games are integral to the contemporary structure of feeling; they are an important example of how social relations are becoming increasingly [...] animated by a distinctive set of rhythms'. In *Aesthetic Theory and the Videogame*, Kirkpatrick (2011) argues that videogame play can be considered 'aesthetic' because it engages our cognitive and sensory capacities in a manner similar to that which is described in classical aesthetic theory. Eyes, hands, and bodies work in unison to derive what he calls 'aesthetic form' from the videogame. The aesthetic form of videogame play, he argues, is inherently fragmentary—it lacks an overall visual consistency, much like a Cubist painting—but it is nevertheless pleasurable because it can be recuperated through play. Although Kirkpatrick's account can be critiqued for upholding a somewhat human-centric and formalist approach to videogames (see Pias, 2011 and Anable, 2018a: 120–121), his insights are valuable because they insist, quite rightly, that videogames are both shaped by and give shape to the structures of feeling they inhabit. In a very material sense, different videogame technologies imply different possibilities for touching, looking, and feeling. Videogame play is characterized by a certain 'in-between-ness' wherein affective intensities arise at the interface of player *and* machine action (Galloway, 2006). For Brendan Keogh (2014: n.p.), 'both the player and the game share an active agency in the way they each afford, translate, and mediate the actions of the other', such that 'the actual actor active in videogame play is in fact a hybrid of both player and game'.

In *Computer Games and the Social Imaginary*, Kirkpatrick (2013: 177) extends the above arguments by suggesting that all videogame play is inherently political—not because of the representational content involved (though this of course may be political)—but rather (and in accordance with aesthetic experience more generally) because different videogame

technologies imply different orientations to the world and other bodies. As Jacques Rancière (2009) suggests, politics is inseparable from aesthetics insofar as both are about the reconfiguration of what is perceptible, thinkable, and sayable. That videogames are political in this way is most clear in the notion that they are often 'affectively designed' (Ash, 2015) to mobilize player attention and cultivate behaviours conducive to brand loyalty and economic profit. Platforms such as Facebook and Google are similar, in that their designed affordances encourage (or impose) data-lucrative forms of affective intermediation. Minor platforms such as Twine, however, are political in a different way. Twine's developer and player communities seek to shape the platform in ways that accord with the alternative structures of feeling they envision for the medium's future. A minor structure of feeling thus pre-empts an alternative future not yet or never fully articulated.

Here, I am influenced by the notion of 'queer temporality' as described by queer theorists such as Jack Halberstam (2005) and José Esteban Muñoz (2009). For Halberstam (2005: 6), queer time refers to the 'nonnormative logics and organizations of community, sexual identity, embodiment, and activity' that undermine the linearity and heteronormativity of straight time (cf. Muñoz, 2009: 22). For my purposes, straight time refers not only to the videogame industry's dominant historical narratives but also its imagined (white, heterosexual, cis male) subjects and, accordingly, its dominant modes of production and consumption. The notion of a queer temporality is perhaps best expressed through Twine (examined in Chapter Five), whose core community of developers and players—women, people of colour, people with disabilities, and/or LGBTQIA+ people—actively seek to destabilize the straight temporalities of mainstream videogame development and play. As Twine and its community illustrate, minor structures of feeling may deliberately seek to retain an oppositional or queer status in relation to dominant or hegemonic structures of feeling. For many Twine authors, retaining a queer status is crucial in an industry that routinely seeks to erase alternative voices or, alternatively, co-opt queerness because it means netting a wider market share of consumers. However, it is also important to note that, unlike Twine, most of the platforms examined in this book initially sought to become 'normal' or 'mainstream' in their respective historical periods, but ultimately 'failed' to do so. Yet, this is also what makes them useful as objects of study: they enable us to reconsider the historical and cultural contexts in which minor structures of feeling were once active but did not crystallize into structures of power, deliberately or otherwise.

Moreover, as Halberstam (2011) argues, there is something queer about the very notion of failure; about its negative orientation to heteronormative logics

of achievement, progress, and profit. In *The Queer Art of Failure*, Halberstam (2011) identifies failure as a subversive storytelling technique in animated films that would not normally be considered canonically queer in the broader context of film history, such as *Finding Nemo* (Stanton, 2003) and *Chicken Run* (Lord and Park, 2000). As Halberstam observes, these films often feature storylines that subvert heteronormative logics of success and achievement, and depict characters who leverage their abnormalities and differences for transgressive and subversive purposes. To extend Halberstam's argument to the present work, 'queering' videogame history means studying objects, bodies, and spaces that are oriented negatively toward heteronormative logics of progress, profit, and achievement. As Zoya Street (2017: 41) writes,

Queering history does not just mean including queer experiences in accounts of gaming histories. It also means challenging the normative structures of history as practice, making it more open and flexible and less authoritarian. It means finding ways to embody the role of the historian in an authentic way, rather than posturing in a way that privileges some voices over others. It means abandoning knowledge. It means knowing nothing.

This is precisely why I have chosen to let the platforms 'articulate' for themselves—a concept developed in Chapter Two—as opposed to subjecting them to a totalizing method. By allowing myself to be led by the platforms, I open myself up to alternative ways of knowing and feeling history (cf. Anable, 2018a).

Studying minor structures of feeling means paying attention to what people do or have done with minor platforms, or what they say or have said about them. Therefore, the moments of epistemic rupture and transitional instability I search for in this book can be found not only in the technologies themselves. They are also found in the way people imagine, experience, and think with them. Thus, minor platforms are useful not only for challenging what we think we know about videogame history, but also for affectively orienting us toward alternative textures of experience. In Eve Kosofsky Sedgwick's (2002: 13) terms, to study or 'perceive' texture from a historical standpoint 'is never only to ask or know What is it like? nor even just How does *it* impinge on *me*? Textural perception always explores two other questions as well: How did it get that way? and What could I do with it?'. To apply this thinking to the study of minor platforms, we should ask not only 'what does the platform feel like to use?', but also 'why was it designed that way in the first place?' and 'what kinds of actions, experiences, and bodies does it support?'. In this sense, videogame history is not just a history

of technology or labour or even culture. It is also a history of *affect*—of technologies giving shape to and being shaped by the affective dispositions of their users (cf. Anable, 2018a). The question, then, is how do minor platforms shape alternative or minor textures of experience? And how might these minor textures shape the very way we feel or perceive history in the present? The notion that we can perceive videogame history texturally is the subject of Chapter One, where I analyse ways of seeing videogame history through the Vectrex interface.

If major videogame platforms can be said to structure the dominant feeling of specific periods of videogame history, then minor platforms threaten to break the hold of what Rancière (2009: 72) calls the ‘cartography of the perceptible, the thinkable and the feasible’. Developing Williams’s notion of structures of feeling in relation to theories of affect, Anable (2018a: 40) argues that videogames not only ‘give us access to the historical grounding of our current sensorium’, but that ‘they can also give us access to the limitations of this historical grounding’ (Anable, 2018a: 25). To paraphrase Anable, minor platforms not only provide access to suppressed, unrealized, or oppositional structures of feeling in videogame history; they also reveal new possibilities for what we can know and feel about videogames in the present. Minor platforms always imply the possibility that history *could* be otherwise, even in questionable, undesirable, or potentially disconcerting ways. Looking at how history could be different is not only a means of countering increasing standardization in the videogame industry, or a way of correcting omissions, mistakes, or gaps in our knowledge of videogame history. As Elsaesser (2016: 99) argues, a ‘missing link’ or ‘gap’ in media history should not simply be treated as a receptacle to be filled with facts. A missing link may, as he puts it, ‘have its own meaning, but as a gap, a deliberate or accidental omission’ (Elsaesser, 2016: 99). A gap may perform transitional ‘work’ by linking one historical period to another, or it may elude notions of continuity altogether. I proceed, therefore, not with the sole purpose of filling in the gaps of videogame history, but also with the aim of intervening in the past. An intervention in the past has a reverberating effect—it can refresh our awareness of the present and help us find paths into the future that *can* be different.

## An outline of the book

The constellational approach described earlier informs my approach to the case studies and the structure of the book. That is, although there are

interesting connections to be made between each of the case studies, these connections are not made in the service of a unified historical narrative. Instead, in each chapter I offer a different theoretical and historical ‘take’ on the platform in question. The chapters each draw on different sets of archives, methods, and frameworks. While magazines are key archival sources throughout the book, Chapter Five also draws on data collected from interviews I conducted with three Australian videogame developers in 2018. The phenomenological accounts of the platforms are largely informed by personal experience. Where I lacked first-hand experience of a specific case study (namely the Zemmix and its videogames), I gathered as much information as possible by reading or watching online fan accounts or by playing the videogames on emulators (in addition to analysing the various archival materials, of course). Tying each of the chapters together are the overarching arguments that minor platforms *inhabit moments of rupture*; that they are useful as *epistemic tools*; and that they *articulate alternative structures of feeling*.

The notion of a rupture or alternative way of ‘seeing’ videogame history is the subject of Chapter One. This chapter analyses the Vectrex, a vector-based home videogame platform released in North America in 1982. The Vectrex utilizes an inbuilt ‘random-scan’ cathode ray tube (CRT) monitor to display images in vector graphics. Vector graphics are visualizing techniques that construct wireframe objects from point and line coordinates rather than pixels. Although several early arcade machines utilized vector graphics in their displays, the Vectrex is the only platform to have domesticated vector graphics. While it is tempting to view the Vectrex as a historical oddity or ‘dead end’ in the history of videogame interfaces, I argue that it can be more productively understood as a signifier of transition—of the convergence of various aesthetic trajectories, technical systems, and interfacing techniques during a moment of uncertainty and instability in videogame history. To make this argument, I analyse the platform’s technical construction against the backdrop of broader histories of visualization in art and computer graphics. The Vectrex is an important ‘intermezzo’ in videogame history—a brief detour or discontinuity (Elsaesser, 2016: 79–80; cf. Zielinski, 1999)—albeit one that does important narrative ‘work’ for videogame history. Chapter One therefore provides an alternative way of seeing videogame history and, in doing so, establishes the foundations of my approach to minor platforms.

In Chapter Two, I analyse the Zemmix, a South Korean pirate platform released by Daewoo in 1985. In its technical construction, the Zemmix makes (unofficial) use of an international microcomputer standard known as

'MSX'. MSX was co-developed by Microsoft's Japanese and North American hardware divisions in the 1980s. Its purpose was to standardize the underlying architecture of 8-bit microcomputers such that computer software could be made interoperable across platforms, regions, and cultures—especially in East Asia, where there existed a myriad of incompatible and unruly (oftentimes *bricolage*) microcomputers and technical standards. MSX thus carried a 'double bind' of neocolonial influence, in which 'the USA and Japan functioned as a pair of colonial forces and as the objects of de-colonization' in former Japanese colonies (Cho, 2016: 942). The Zemmix, which took advantage of MSX as an 'open' international standard, enabled Korean developers to import, copy, and informally distribute Japanese computer game software. The Zemmix thus helped establish a grassroots videogame industry in Korea, and enabled players and developers to begin a decolonization process in Korea's videogame and computer industries. I argue that the Zemmix is useful as an epistemic tool or 'theoretical object' (Verhoeff, 2012) for reflecting on the articulation of a 'postcolonial consciousness' in Korea's videogame and computer industries during this era.

Chapter Three looks at the shift from public to private forms of play in videogame history through the lens of the Neo Geo Advanced Entertainment System (AES). The Neo Geo AES is a 'home arcade' platform released by Japanese videogame company SNK in 1991. It promised to fulfil a long-term fantasy of bringing 'arcade quality' videogames into the home. Although the Neo Geo AES arguably succeeded in this goal—it made very few compromises in the arcade-to-home 'porting' process—its magazine reception was overwhelmingly negative. I argue that this was due to wider discursive, affective, and social shifts in videogame culture, as opposed to flaws in the Neo Geo AES hardware or software. The tastes, preferences, and values connected to the 'gamer' identity—those that had traditionally marked 'good' videogames from 'bad'—were, in this period, beginning to favour play structures that offered more sedate, long-term, and narrative-oriented experiences. Ironically, the Neo Geo AES's 'success' rendered a new structure of feeling—one that was incompatible with the old ideal of playing arcade videogames in the home—an imaginable reality.

Chapter Four looks at how the imaginaries surrounding a commercially obsolesced 'cult' platform—the Sega Saturn—are reactivated and imbued with residual value in the present. This chapter differs from previous chapters in that it aims to understand the Sega Saturn's social construction in the present. It takes as its starting point the media archaeological idea that obsolesced technologies, once liberated from their commercial contexts, are freed up for aesthetic experimentation. An obsolesced videogame technology

may, for example, become a source of creative inspiration for an artwork or a platform for 'homebrew' fan development. I argue that this media archaeological impulse is often shot through with a 'dialectic of obsolescence' that hesitates between wanting to fetishize and salvage media history. In order to unpick this dialectic, I analyse the residual afterlife of the Sega Saturn's cancelled 'flagship' title, *Sonic X-treme*. *Sonic X-treme* never came close to being completed, and today exists in multiple fragmented states. Fans have attempted to piece together these fragments in order to create playable prototypes of *Sonic X-treme* in the present. *Sonic X-treme* can never be 'restored' to its original state (as such a state is non-existent), and neither can it be properly 'realized' without significant (and contested) fan intervention. It cannot be documented through institutionalized processes of 'archivization' (Derrida, 1996) because it is, strictly speaking, non-existent. Instead, the 'object' can only be revealed momentarily in what Benjamin calls 'photomontage' or constellational form, thus constituting a unique intervention in the archives of videogame history.

In Chapter Five, I discuss videogame history's 'arrival' in the present through an analysis of the Twine platform. Twine is an HTML-based software tool for creating and playing hypertext fiction. Twine is the clearest expression among the case studies of what Deleuze and Guattari call a 'minor literature'. It belongs to a multiplicity of developers and players whose voices have, historically, been diminutized or excluded from the mainstream industry and culture of videogames. It is free to download and use, and its design interface is intuitive even for those without programming knowledge. Many of its videogames directly challenge the perceived values and expectations upheld by 'gamers'. Its practitioners actively undermine expectations of how videogames should be played, who should make them, and what kinds of narrative themes they should explore. In this way, Twine articulates an 'archaeology of possible futures' for videogame history. It expresses an epistemic rupture in videogame culture—a moment of transitional instability that is currently underway—and identifies in this rupture a possibility for what Rancière (2009) calls 'dissensus', or a capacity to change 'the dominant distribution of the sensible'. This chapter draws from interviews with three emerging Australian videogame developers—each of them a student or recent graduate—who are experimenting with Twine and related software tools in their videogame-making practices.

In conclusion, I argue that minor platforms enable videogame scholars to re-encounter the 'strangeness' of their object of study. As Adrienne Shaw (2015) argues, game studies scholars often bring very normative frames of reference to bear upon their researched objects and subjects. The aim of this

book is to reorient (or perhaps *disorient*) our relationship to an ostensibly 'normal' and everyday object in the study of videogames: the videogame platform. Minor platforms thus point not only to suppressed moments of transition and rupture in videogame history. They also disorient the present and point toward alternative possibilities for a future yet to come. The challenge of studying them is that, by virtue of their awkward and oftentimes contradictory position in videogame history, they resist many of game studies' taken-for-granted research methods and theoretical frameworks. Minor platforms compel us to come up with a different set of critical tools and archival approaches. This invariably leads to a more anarchic and unstructured way of doing historical research. But the payoff is that minor platforms may reveal hidden paths both *into* and *out of* videogame history, thus offering new ways of critically understanding the medium in the present.

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