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# Board Games and the Construction of Cultural Memory

**Jason Begy**[1]

**Abstract**

Although much has been written about the potential of games for historical representation and their status as historical texts, there is little research placing games into a broader "cultural memory" framework. In this article, I argue that one unique way games as a medium can participate in constructing cultural memory is by simulating historically situated structural metaphors. To do so, I first introduce the concept of cultural memory and link it to material culture studies. I argue that games can be cultural memory "objectivations," but in order to fully analyze them in this respect insights from game studies, namely, the meaning potential of rules, need to be applied as well. I then discuss how three board games, *1830: Railways and Robber Barons* , *Age of Steam*, and *Empire Builder* simulate the structural metaphors identified by Wolfgang Schivelbusch that were used by contemporary observers to understand the experiential changes wrought by the railroad. I close by arguing that this type of research is valuable in that it opens up new understandings of how games influence the way a culture thinks about and remembers its past.

**Keywords**

cultural memory, material culture, metaphor, simulation, board games

[1] Communication Studies, Concordia University, Quebec, Canada

**Corresponding Author:**
Jason Begy, Communication Studies, Concordia University, 7141 Rue Sherbrooke W., FB-501, Montreal, Quebec, Canada H4B 1R6.
Email: jsbegy@alum.mit.edu

## Introduction

Although there is a growing body of work addressing the potential of games as historical texts (Chapman, 2013; Poblocki, 2002; Urrichio, 2005; and the recent collections edited by Whalen & Taylor, 2008; and Kapell & Elliot, 2013, to name but a few), there is little work to date that places games in a broader "cultural memory" (Erll, 2011) perspective. Cultural memory studies is an interdisciplinary field concerned with the ways a culture interacts with and constructs its past, which includes, but is not limited to, formal History. It is thus a valuable perspective to bring to the discussion of games as historical texts because it allows for analysis beyond the inevitable questions of historical accuracy, counterfactualism, and the persistent problems of representation, in favor of considering *how* the past is constructed and *why* this is done in specific ways.

Cultural memory studies is necessarily concerned with media because it is through media that ideas about the past are constructed, circulated, and preserved. Building on the idea that media forms shape memory in specific ways, Erll examines how literature in particular functions as a site of cultural memory. However, she stresses repeatedly that all media shape memories differently and are thus worthy of study. In this article I argue that one "mode of remembering" specific to games is their capacity to simulate the historically situated structural metaphors (Lakoff & Johnson, 1980) used by members of a culture to understand disruptions to their way of life. Specifically, I analyze how and to what extent three board games, *1830: Railways and Robber Barons* (Tresham, 1984), *Age of Steam* (Wallace, 2002) and *Empire Builder* (Bromley & Fawcett, 1982) simulate (Möring, 2013) the metaphors used by Western European and North American culture in the 19th century to understand the impact of the railroad on society, as identified by Wolfgang Schivelbusch (1986). In so doing, I argue that this capacity to simulate abstract ideas specific to a historical period is a unique way games participate in cultural memory.

### *Cultural Memory*

The field of cultural memory studies is concerned with how cultures construct their past, and as such its objects of study include everything from holidays and rituals to media and even formal historiography; the field is intentionally broad and interdisciplinary. In her book *Memory in Culture*, Astrid Erll defines memory as:

> an umbrella term for all those processes of a biological, medial, or social nature which relate past and present (and future) in sociocultural contexts. . . . Cultural memory is not the Other of history. Nor is it the opposite of individual remembering. Rather, it is the totality of the context within which such varied cultural phenomena originate. (2011, p. 7)

and elsewhere as "the interplay of present and past in socio-cultural contexts" (Erll, 2008b, p. 2). Cultural memory studies has a wider perspective than formal history in

that it takes as its object of study *all* of the ways in which a culture relates to its past. Erll continues: "memory studies directs its interest not toward the shape of the remembered pasts, but rather toward the particular presents of remembering" (2011, p. 8). The field is not interested in what did or did not happen, but rather how those events are *constructed in the present.* "[T]he focus of memory studies rests, precisely, not on the 'past as it really was', but on the 'past as a human construct'" (2011, p. 5). Because cultural memory is by definition a shared memory it depends on communicative acts to function. "Cultural memory is unthinkable without media" (Erll, 2011, p. 113). For my purposes here it is essential to note that the medium used to construct memory shapes the nature of that remembering. Erll argues that "specific modes of remembering are closely linked to available media technologies. For example, the detailed histories of the nineteenth-century historiographers had no counterpart outside the medium of the book," and consequently "History in this form simply did not exist in other media or indeed at all in a reality outside the media. Solely the medium of the book exhibited the capacity to present an enormous multitude of memory-relevant information in a temporal-causal order [. . . ]." (2011, p. 114)

Thus, the modern concept of history-as discipline is dependent on the media form of the book, which in turn influenced and shaped how history is done to the extent that ideologies of what constitutes proper history are often linked directly back to this medium: "Simulations necessarily fail as tools of legitimate historical representation because simulations are defined by player interaction" (Peterson, Miller, & Fedorko, 2013, p. 37). For Peterson et al., simulations are "interactive" in a manner that a book is not and therefore are not proper historical representations. Many scholars have expressed similar critiques (see Chapman, 2013 for an overview and effective rebuttal of this position), but this perspective is directly descended from the practices enabled by the book as a medium. Peterson et al. further argue that while simulations fail to act as "genuine" historical representations, they still "successfully model the conceptual frameworks necessary to understand and construct historical representation better than alternate media" (2013, p. 38). In other words, although simulations necessarily create counterfactuals by allowing players to alter historical detail (because of their interactivity), they are still valuable in that they allow a deeper conceptualization of history: "Simulation then goes beyond demonstration by approximating experiential knowledge of the actual characteristics of people, places, and circumstances as they are or may have been in the real world" (2013, p. 39). This article offers a third perspective on the use of simulations in understanding the past by shifting the simulated system from historical people, places and events to historically and culturally situated concepts, specifically structural metaphors.

It is important to understand the role of games and simulations in particular in constructing cultural memory because every medium used for the storage and/or transmission of cultural memory leaves its own, distinct mark on those memories, and a given culture will privilege some forms over others. Every medium "has its

specific way of remembering and will leave its trace on the memory it creates'' (Erll, 2008a, p. 389). In this article, I argue that a mode of remembering unique to games is the capacity to simulate historically situated structural metaphors. Understanding how simulations contribute to cultural memory also expands the debate beyond whether or not simulations can be genuine historical representations to understanding the work they do in shaping our subjective cultural understanding of the past, an understanding that is often formed without the supervision of historians.

## *Material Culture*

Because cultural memory studies focuses on media, it frequently entails a focus on the material objects produced by a culture, and as such considering board games as material culture offers new insights into how they participate in cultural memory. Prown (1982, p. 1) defines material culture as ''the study through artifacts of the beliefs—values, ideas, attitudes, and assumptions—of a particular community or a society at a given time,'' and is based on ''the proposition that artifacts are primary data'' and therefore ''can be used actively as evidence rather than passively as illustrations.'' As Woodward notes, ''By studying culture as something created and lived through objects, we can better understand both social structures and larger systemic dimensions such as inequality and social difference, and also human action, emotion, and meaning'' (2007, p. 4). To date there is little work applying material culture to board games, although some scholars have studied children's toys as such; Norcia's work connecting early British jigsaw puzzles to imperial ideology is a noteworthy example (2009). Material culture finds its theoretical grounding in structuralism and semiotics. It is structuralist in ''its premise that the configurations or properties of an artifact correspond to patterns in the mind of the individual producer or producers and of the society of which he or they were a part'' (Prown, 1982, p. 6). From the perspective of material culture, its objects of study are signs that signify something about their makers and users.

For Prown, objects which were not made with the intention of expressing a viewpoint or idea (as opposed to artistic or political works) are particularly valuable for study: ''in some ways artifacts that express culture unconsciously are more useful as objective cultural indexes'' (1982, p. 2). Similarly, Norcia argues that

> Though the puzzle manufacturers may have held more ambivalent ideas about imperialism, and may not have intended their products to serve as imperial propaganda, these artifacts illustrate the acculturative process through which children would have become familiar with the idea of their empire. (2009, p. 3).

From this perspective, commercial board games designed to be sold as mass-market entertainment products are ideal subject matter.

A material culture perspective complements cultural memory research in that both focus on physical objects; Erll uses the term ''objectivations'' to refer to the

embedding of memories in media objects: "Homer's Iliad, medieval manuscripts, the British Museum, soldiers' letters from the trenches of the First World War, Picasso's Guernica, and pictures in a family album are cultural objectivations which turn into media of memory" (2011, p. 122). Prown refers to "art museums, historical societies, museums of history and technology, historic houses, open-air museums, and museums of ethnography, science and even natural history" (1982, p. 1) as places that collect and archive material culture, all of which have obvious connections to cultural memory. Prown argues that artifacts "can yield evidence of the patterns of mind of the society that fabricated them" (1982, p. 6), while Erll maintains that "all artistic activity is an act of memory, as it necessarily falls back on elements of cultural tradition" (2011, p. 72). Taken together, these statements suggest that artifacts such as board games necessarily fall back on cultural memory and tradition and that an analysis grounded in material culture can reveal these "patterns of mind."

Because of the limitless number of potential objects that material culture could be applied to, Prown describes six classes of objects that lie on a continuum ranging from the entirely aesthetic to the entirely utilitarian. Starting with the aesthetic, these are art, followed by diversions (which includes toys and games) and then adornment, landscape modifications, applied arts, and, lastly, devices (machines, vehicles, and instruments), are the most utilitarian (1982, p. 3). Prown argues that each of these categories requires specific techniques and methodologies for analysis and offers some insights into how to approach each category, with the exception of diversions. About this category he merely writes,

> These objects share the quality of giving pleasure, or entertainment to the mind and body, and the category has an affinity with, although separate from, art. This is a category in the process of definition and further discussion of it must be deferred. (1982, p. 13)

With regard to games, the "process of definition" has been moved forward considerably by game studies since the time of Prown's writing, and so my approach to material culture here is informed by the various game scholars who have attributed meaning to the rules of a game.

It is a commonly held perspective in game studies that in order to analyze or critique a game the researcher or critic must play the game (Aarseth, 2003; Leino, 2012). In order to be fruitfully applied to games, then, a material culture analysis needs to include how the game is played: what are the rules? What are players expected to do? In what context is it played? Is the game trying to simulate something, and if so, how? How are different outcomes valued? As researchers such as Bogost (2006, 2007), Frasca (2003), Treanor (2013), and Begy (2010, 2013) have shown, rules and processes can be expressive representations, just as the art on the box or the board is. How the game is played is as important as its material aspects, especially when analyzing the medium-specific ways board games preserve and construct cultural memory.

## *Simulating Structural Metaphors*

My goal in this article is to show that their capacity to simulate structural metaphors (Lakoff & Johnson, 1980) is a unique means of constructing cultural memory available to games. Although it might seem counterintuitive to refer to this process as "simulation," Möring has aptly demonstrated how games simulate abstract concepts:

> [O]ne can say that metaphors which help to understand especially intangible phenomena such as emotions, can provide models upon which one can build simulations. Accordingly, I have suggested that the game *The Marriage* . . . should be understood as the first order simulation of a metaphorically structured conventional understanding of love. (2013, p. 69)

For Möring, even though our concept of "love" is itself metaphorical, it can still be simulated; simulations need not be of concrete phenomena. In the same fashion, then, games can simulate other metaphors, including structural metaphors. The structural metaphors I am interested in here are those outlined by Wolfgang Schivelbusch in his remarkable cultural history of the railroad, *The Railway Journey* (1986), including the annihilation of existing cultural concepts of space and time (as created by previous transport technologies), the creation of new space (by linking places together), and the diminishing of local aura (as defined by the character of a place).

Although Schivelbusch does not describe these changes in the perception of time and space as metaphors, they are clearly "structural metaphors" as described by Lakoff and Johnson (1980, pp. 61–68) and were used by contemporaries to understand the nature of the changes the railroad wrought in their everyday experience. For Lakoff and Johnson, "metaphors" are not linguistic devices but rather the root of our cognitive structures: in their conception, a metaphor involves applying knowledge and experience from one domain to another. Structural metaphors are "grounded in systematic correlations within our experience," enabling us "to use one highly structured and clearly delineated concept to structure another" (1980, p. 61). As an example, Lakoff and Johnson describe the "rational argument is war" metaphor, which as a structural metaphor "allows us to conceptualize what a rational argument is in terms of something that we understand more readily, namely, physical conflict" (1980, p. 61). The authors show that war and rational argument have structural similarities: both can be won or lost through a series of attacks, counterattacks, and defenses. Both involve intimidation, threats, claiming authority, challenging authority, insults, bargaining, and even flattery (1980, p. 63). Because of these common elements we are able to understand rational argumentation in terms of warfare. In the case of the railroads, the concept of "annihilation" (destruction, removal, erasure) structured the concept of high-speed travel in the sense that the space between places was experienced as dramatically smaller than previously; the experience was *as if* the intervening space had been removed. The same processes applied to time because the same journey took much less time than previously and so the time

that had existed between departure and arrival seemed to have vanished. Lakoff and Johnson specify that with structural metaphors we understand a higher level concept with a more familiar, lower level concept—so rational argument is understood in terms of physical violence, and high-speed travel is understood in terms of annihilation. The idea that space was "created" by the railroad is likewise a structural metaphor in that the concept of creation was used to structure the concept of geographic accessibility. The diminishing of aura is likewise a metaphor: as a philosophical construct, aura does not exist in a literal sense, and so metaphor is essential to its conceptual existence. We can only speak of aura in metaphorical terms: in Schivelbusch's work, the concept of "reduction" structures the concept of "loss of aura."

The creation of these metaphors is predicated on change, specifically, the shift from one experiential domain (preindustrial transport) to another (high-speed transport), and as such they only make sense in the context of that change. The loss of aura as described by Schivelbusch differs in that the concept is applied in retrospect through a historic lens: the observers of industrialization quoted by Schivelbusch predated Benjamin's introduction of aura by nearly a century, but it is reasonable to assume that they were aware of the changes that "aura" so neatly describes. Regardless, Schivelbusch writes about a *change* in aura that is only observable through comparing the two modes of travel. Together, then, these concepts depend on the juxtaposition that occurred in this specific historical moment.

In the following sections I will describe each of these metaphors in depth and analyze how *1830: Railways and Robber Barons* (Tresham, 1984) and *Age of Steam* (Wallace, 2002) simulate them. I will also offer *Empire Builder* (Bromley & Fawcett, 1982) as a counterexample throughout, to illustrate how the same historical details can be simulated without also simulating the relevant structural metaphors, thus highlighting the latter as a result of game design decisions.

## Games Overview

Before analyzing the simulation of structural metaphors in depth, a brief overview of the games is necessary. *1830: Railways and Robber Barons*, *Age of Steam*, and *Empire Builder* are board games that simulate the growth and development of the railroads in North America during the 19th century. Because these games are set in the past they are what Erll refers to as "collective texts," which refers to their status as "a circulation medium that disseminates and shapes cultural memory," and furthermore

> points to a way of reading in which literary works are actualized not so much as precious *objects* to be remembered themselves, but rather as *vehicles* for envisioning the past. Collective texts create, circulate, and shape contents of cultural memory. (2011, p. 164)

The "fiction" of these games (Juul, 2005) places them in a specific historical setting, which is necessary for their function as media of memory, " . . . one important

condition for literary works to have such an influence on cultural memory is that readers ascribe to them some kind of referentiality'' (Erll, 2011, p. 164). The fiction of each game creates this referentiality by representing and referring to 19-century North America. This is done through material elements such as the games' titles and art on the box and other components as well as the language used in the rules (players build ''track'' and run ''trains,'' as opposed to roads and trucks, for example). Although Erll has developed the concept of collective texts in reference to literature specifically, it applies well to board games because they can also have the requisite referentiality for envisioning the past.

In each game players take on the role of railroad investors, promoters, and operators, with the aim of making the most money over the course of the game. These games are similar in that each game board is a map of the Northern United States and Southern Canada (although their precise locations differ). The *1830* and *Age of Steam* boards are overlaid with a hexagonal grid (see Figures 1 and 2, below). During the course of play, players place hexagonal tiles depicting railroad tracks onto the board, with the goal of linking cities and expanding the network. *Empire Builder*'s board covers a greater geographical area and is covered with the points that define a hexagonal grid, plus the centers (Figure 3). Players use erasable crayons to draw lines representing tracks from point to point, which are then used to move a train across the board. In each game track building is necessary for players to earn money.

Although these three games are broadly similar in their scope and setting, they differ significantly in their details. In *1830* players act as investors in different railroad companies, and these companies build tracks and purchase rolling stock. (This investment mechanic is similar to games such as *Acquire*, Sackson, 1964; and *Imperial*, Gerdts, 2006). Player wealth in *1830* comes primarily from wise investing. In *Age of Steam*, players are not investors but rather act as one railroad company for the entirety of the game. In this game, the emphasis is on track building. Here each city demands a certain kind of goods, and players compete to make deliveries to earn revenue; controlling access to important cities is essential. A key distinction is that in *1830* tracks are generally available to use by any company, but in *Age of Steam* each player owns the tracks they build and charges other players for their use. In *Empire Builder*, unlike the previous two, each player's train is represented on the board by a plastic marker, which moves along tracks. This game emphasizes logistics: each city produces one or more kinds of goods, and players have a hand of cards representing demand. A train has to reach a city before it can load goods and then must be moved to a city demanding those goods, at which point the card can be turned in for a financial reward. Track ownership and use is similar to *Age of Steam*, but in the latter trains are represented abstractly: they are not present on the board but represented through a player's ability to make deliveries.

Despite these differences, each game represents different ways of understanding and modeling the same phenomena. Although many railroad board games represent this particular time and place, I have selected these games for analysis for two reasons. First, they have all been commercially and critically successful. *1830* led


**Figure 1.** The game board for *1830: Railways and Robber Barons*. The yellow hexes along the eastern seaboard represent Boston, New York, and Baltimore, respectively.

directly to a subgenre of board games known collectively as "18xx," featuring over 100 games based on *1830* and its (less successful) predecessor, *1829* (Tresham, 1974). *Age of Steam* has also become almost a genre onto itself, with a similar number of expansion maps (all with moderate rule changes) available for purchase or download. *Empire Builder* has also had great success, including (at the time of this writing) 19 sequels and expansions, in addition to multiple revisions of the base title. Thus, these games are quite visible in the contemporary board gaming market, which has led the Train Gamer's Association, a collective of board game players and designers, to feature each game system prominently in their "Puffing Billy" tournaments.[1] Second, although these three games are roughly simulating the same phenomenon, they do so in different ways and thus emphasize different aspects of the railroad: *1830* is as much about earning money through the stock market as it is through running railroad companies, while *Age of Steam* focuses on competitive track building and *Empire Builder* is a logistic game.

In the remainder of the article, I argue that in simulating the material processes that defined the railroad, *1830* and *Age of Steam* also simulate the metaphorical processes described by Schivelbusch, thus sustaining them in our cultural memories of the railroad's significance. I further argue that considering these games as material culture shows that the metaphorical processes discussed are still part of how we

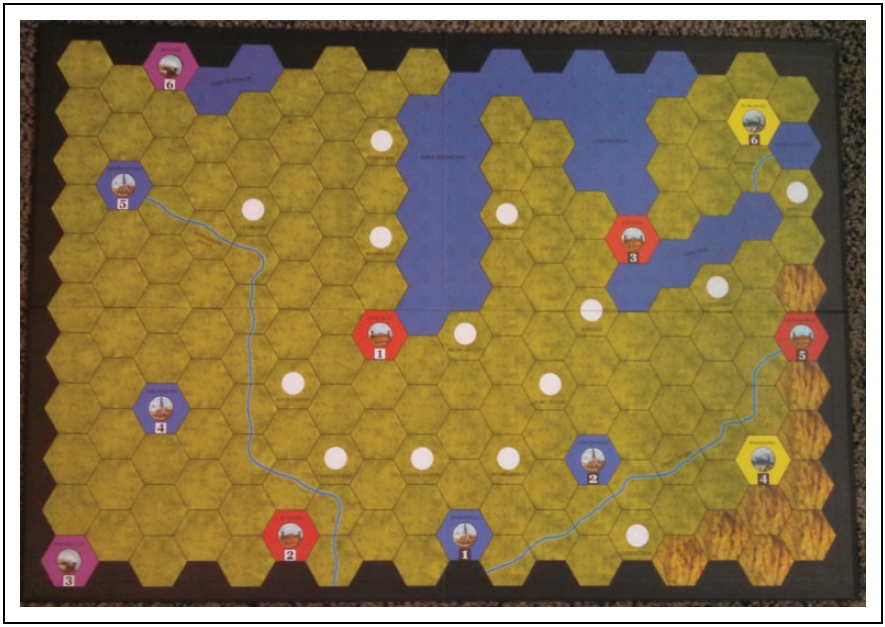

**Figure 2.** The game board for age of steam. The Northeastern most yellow hex represents Toronto.

understand the significance of the railroad. I also contrast the two games with *Empire Builder* to emphasize that the simulation of the metaphors does not necessarily follow from the simulation of material processes, and thus that the simulation of these metaphors is the result of specific design decisions.

## *The Annihilation of Space and Time*

In his book *The Railway Journey*, Wolfgang Schivelbusch describes the effects of the railroad on North American and European society, culture, and economics. One of his main arguments is that the railroad altered how people living at the time perceived time and space (the two necessarily being intertwined). This alteration was so dramatic that understanding it required appropriately dramatic language, "'Annihilation of space and time' was the early-nineteenth century characterization of the effect of railroad travel" (1986, p. 33). This effect was due to the vast increase in speed that steam locomotion enabled:

> The average traveling speed of the early railways in England was twenty to thirty miles an hour, or roughly three times the speed previously achieved by stagecoaches. Thus, any given distance was covered in one-third of the customary time: temporally, that distance shrank to one-third of its former length. (1986, pp. 33–34)


**Figure 3.** *Empire Builder* board and components. *Source.* Charles Picard, 2010. https://www.boardgamegeek.com/image/650664/empire-builder?size=original

Schivelbusch cites numerous contemporary writers who expressed their experience of this annihilation: it was not a transformation realized in hindsight, but rather one experienced immediately and directly. For example, in 1843 Heinrich Heine wrote:

> Space is killed by the railways .... Now you can travel to Orléans [from Paris] in four and a half hours, and it takes no longer to get to Rouen. Just imagine what will happen when the lines to Belgium and Germany are completed and connected up with their railways! I feel as if the mountains and forests of all countries were advancing on Paris. (Quoted in Schivelbusch 1986, p. 37)

Schivelbusch points out that what was being "annihilated" was the "traditional space-time continuum which characterized the old transport technology" (1986, p. 36). He argues that notions of time and space are situated in a culture's technological material base: Heine's perception that a great distance separated Paris from Germany was rooted in the fact that until the advent of the railroad it took a great deal of time to get from one to the other. It was this *experience* of space and time that the railroad destroyed.

Schivelbusch further shows that these transformations were only experienced by the generation that saw the transition from coach travel to rail travel: "Thus, the idea

that the railroad annihilated space and time must be seen as the reaction of perceptive powers that, formed by a certain transport technology, find suddenly that technology has been replaced by an entirely new one" (1986, p. 37). The generations that followed did not experience these changes because their experience of space and time was formed by high-speed transport. (A similar shift has of course been experienced by more recent generations that experienced rapid increases in the speed of communication: "For electric light and power are separate from their uses, yet they eliminate time and space factors in human association exactly as do radio, telegraph, telephone, and TV, creating involvement in depth" (McLuhan, 1994, p. 9). The same could be said of flight and the Internet.) Despite the negative connotation of the word annihilation, this experience of rail travel was a direct result of what made it so valuable: its speed. Although the fact that familiarity with previous transportation technologies was required to experience this annihilation, analyzing *1830*, *Age of Steam*, and *Empire Builder* as material culture shows that these values and experiences persist in our cultural memory.

As noted above, both *1830* and *Age of Steam* take place on a board consisting of a map of the Northern United States and Southern Canada, with a hexagonal grid overlay. In these hexes are cities and towns as well as geographic features. At the start of each game, no two cities are connected and the space between those places acts as a barrier in two ways. First, only a limited number of track tiles may be placed each turn, so it can take several turns for two distant cities, such as Buffalo and Chicago, to be connected. Second, in *1830* some tiles cost money to place and in *Age of Steam* all do, so players may not be able to afford the tracks they want; the space between cities acts as a barrier. However, in each game once two cities are connected by track the space between them becomes irrelevant. In *1830* trains can reach a set number of cities during each operating round, no matter how far apart those cities are. For example, a Level-2 train can visit two cities each round, but the distance between them is irrelevant, so long as they are connected by track. *Age of Steam* is similar in that trains can travel across a set number of "links" each turn. A link is a stretch of track connecting two cities, but the amount of track used to form a link is irrelevant. In other words, in both games the space between cities is hugely important until they are connected, at which point that space no longer matters because it no longer acts as a barrier; the experience is as if that space was annihilated, even though it physically remains. In *Age of Steam* money, access to cities, and the ability to reconfigure existing track are all much more limited than in *1830*—these factors plus track ownership is how the game emphasizes track building and spatial control—and so the annihilation effect is more pronounced. In both games, however, the effect is facilitated by the fact that the player's trains are not represented on the board, rather, their hypothetical route is merely calculated and then assumed to have happened.

In some ways *Empire Builder* is similar: tracks must be built between cities, and it takes time and money to do so, and in this way the intervening space acts as a barrier. The main difference is that each player has a train that is represented physically on the board by a plastic marker, and it can only move a set distance each turn. Thus, a

trip between close cities takes less time than a trip between distant cities, and in this way the space between places is never annihilated. Because the winner is the first player to have a set amount of money at the end of the round the game values speed and efficiency (hence the emphasis on logistics). As such, the space between cities always acts as a barrier of sorts, even when those cities are connected by track, because it takes time to traverse. Toward the end of the game longer journeys are riskier: they may lead to greater revenues, but the game can be lost to other players making smaller, but more frequent, deliveries.

To show how the "annihilation of time" manifests in these games, it is useful to turn to Juul's concepts of "play time" and "fictional time." Play time refers to "the time span taken to play a game" while fictional time is "the time of events in the game world" (2005, p. 142). Play time can be "projected" to fictional time to compare how much time players spend versus the passage of time in the game's fictional world; Juul notes that action games tend to have a 1:1 mapping, whereas other games allow the player to change the speed of the game, thus altering the projection (2005, p. 143). For example, decreasing the speed of *SimCity* (Maxis, 1989) means that more play time is mapped to less fictional time. Juul further notes that in the case of historical games "the fictional time is placed in a specific historical period" (2005, p. 145).

In the case of both *1830* and *Age of Steam*, the annihilation of time happens through shifts in the play time–fictional time projection, causing more play time to be dedicated to the same amount of fictional time. Unlike in the *SimCity* example, however, this increase in play time means that *more* is happening in the same amount of fictional time. This is because the players drive the game, so more play time means more things happen. However, each game is structured such that particular game actions are tied to fictional time, for example, a "turn" represents a set amount of fictional time, but doing more things in a turn means that more events happen; thus more play time maps to the same fictional time. This will become clearer in the analysis below.

In *1830*, play is divided into "share rounds" and "operating rounds." In the former, players take turns buying and selling shares in railroad corporations. In the latter, these corporations take their turns with the majority shareholder acting for each corporation. Corporations build tracks, improve cities, purchase new trains, and run those trains to earn revenue. At the start of the game these rounds alternate, but later this changes to two operating rounds being played for every one share round, and later three operating rounds are played for every one share round. The fictional time in this game is based on the share rounds: the New York Stock Exchange, for example, is open every day from 9.30 a.m. to 4.00 p.m. eastern standard time. Each share round and the following operating round(s) represent 1 day of activities (even though the share trading and railroad operations are artificially divided). This interpretation of the fictional time is based on the fact that the game progresses through a series of "phases," each of which has slight rule differences. When a player takes an action that causes the phase to change, the new phase is not in effect until after the

following share round, thus a share round and the following operating rounds mark one standard period of time. The increase in the number of operating rounds per share round represents advancements in technology and efficiency: more operating rounds mean more tracks can be built and trains can visit more cities in the same amount of time. By the end of the game what used to take 3 "days" of fictional time now takes only 1.

Furthermore, *1830*'s nature as an investment game incentivizes players to push this technological advancement forward and thus emphasizes the annihilation of time. The number of operating rounds per share round increases as new trains are purchased. Better trains earn more money, and the game is over when the bank no longer has any money (as opposed to games like *Monopoly*, Darrow, 1935, where the bank is unlimited). A core strategy of *1830* is to acquire a majority investment in the best companies (thereby earning more money than any other player), and thus players not in that position are constantly jockeying to change it, either by altering their investments or by improving the companies they are invested in. However, the increase in operating rounds means that more money is earned between opportunities to change investments, and the limited bank means that there is only so much time in which to invest. Whereas the key to victory in *Age of Steam* is managing the annihilation of space, in *1830* the key is managing the annihilation of time.

Despite being of lower importance, *Age of Steam* still simulates the annihilation of time, also by simulating improvements in railroad technology. At the start of the game, each player can move a good over one "link" (a direct connection between two cities) per delivery turn. Each player takes two delivery turns per round. So in one round a company could deliver two goods, each one traveling over one link. These delivery rounds mark the progression of time because each represents one train run. Over the course of play players have the opportunity to improve their delivery capabilities up to a maximum of six links per delivery; the game refers to this as improving one's engine power. This is desirable because revenue increases with an increase in the number of links a good is delivered. Thus at the end of the game a player is ideally making two deliveries of six links each per round. In Juul's terms, the fictional time is the same (one round of deliveries) but the play time is greater: more time is spent planning and calculating deliveries, and the goods themselves are moved greater distances across the game board. Here as well, fictional time is annihilated because actions that would have taken several turns at the start of the game will take only one turn by the end.

The annihilation of fictional time simulates the *experience* of the annihilation of time described by Schivelbusch. Contemporary observers of the railroad noted how the increase in travel speed meant that much more distance could be covered in the same amount of time than before. In other words, the time that it used it to take to travel between two places was dramatically decreased, and therefore that time was felt to be annihilated. In *1830* and *Age of Steam*, the fictional time is annihilated in the same way: more events happen, and more distance is covered, in the same

amount of fictional time. This increase happens because more and more play time is used to simulate the same amount of fictional time.

In the case of *Empire Builder*, the game simulates the annihilation of time to a much smaller extent. Here the best marker of fictional time is a player's turn, which can be said to be some standard unit of time, such as a day (there is not enough information in the game to determine what this unit might be precisely). As described previously, a player's train can move up to a certain number of steps each turn. Players have the option of purchasing a faster locomotive, which can move a greater number of steps each turn. In this way, more play time is mapped to the same fictional time, as in the other two games, but the difference is much less dramatic: here the added movement capability leads to a few more seconds of play time as players physically move their trains a few steps further. In contrast, the increase in operating rounds and train complexity of *1830* can easily lead to a full hour of play time being added to the same fictional time, and in *Age of Steam* the increased route length and complexity has a similar effect. In *Empire Builder* the change is technically present but is so minor as to be almost unnoticeable.

## *The Creation of Space*

Heine's fanciful depiction of a contracting European continent, quoted above, demonstrates how the annihilation of space also paradoxically created new spaces: "on the one hand, the railroad opened up new spaces that were not as easily accessible before; on the other, it did so by destroying space, namely the space between points" (Schivelbusch, 1986, p. 37). Heine's depiction of the great European cities advancing on Paris not only implies the annihilation of the space between those cities, but also that they would become accessible to Parisians. In Lakoff and Johnson's terms, the lower level concept of "creation" structured the higher level concept of "access." The spaces made accessible by the railroad were experienced as being newly created because their previous inaccessibility was so great that for many people they might as well have not existed at all.

The creation of space in *1830* and *Age of Steam* is simulated through the same game mechanics that annihilate space, in the same way that the speed of rail travel was conceptualized as both annihilating and creating space. In each game revenue is earned by having trains visit cities, but as one would expect, only cities that are connected to the rail network can be visited. As such "new space" is created by building new track and connecting new cities, and thereby previously inaccessible areas of the board become accessible. These spaces are not "new" in the sense that they did not exist before, but are new in the sense that they are newly accessible, and thus affect player's strategy and income generation; the play experience simulates the historical experience. This is the exception to *Empire Builder*'s outsider status: here as well players build track to connect new cities to the network, thereby making new spaces accessible. This is not surprising since all games simulate the laying of track, and the function of track is to enable the movement of trains.

## The Loss of Aura

The last metaphor described by Schivelbusch that this article addresses refers to the loss of the aura of places. Aura is a concept introduced by Walter Benjamin in "The Work of Art in the Age of Mechanical Reproducibility" to refer to the "here and now of a work of art—its unique existence in a particular place" (2008 [1936], p. 21). For Benjamin, this aura "withers in the age of technological reproducibility" (2008 [1936], p. 22), which refers to the period when industrialization enables mass reproduction of works of art. When reproduced, the aura of the original artwork is not transferred to the copy and this effect is increased as the scale of reproduction increases. Although Benjamin primarily writes about aura in terms of works of art he does not restrict the concept to that domain: "To follow with the eye—while resting on a summer afternoon—a mountain range or a branch that casts its shadow on the beholder is to breathe the aura of those mountains, of that branch" (2008 [1936], p. 23). Aura is thus connected to notions of authenticity, of the here and now. Schivelbusch argues that the railroad diminished the aura of places by opening them up to traffic and making them more accessible to greater numbers of people. "As the space between the points [ . . . ] was destroyed, those points moved into each other's vicinity: one might say that they collided. They lost their old sense of local identity, formerly determined by the spaces between them" (1986, p. 38). Remote locations were particularly susceptible to this: "while being opened up to tourism, they remained, initially at least, untouched in their physical actuality, but their easy, comfortable, and inexpensive accessibility robbed them of their previous value as remote and out-of-the-way places" (1986, p. 42). As a further example Schivelbusch cites the institution of standardized time zones. Up until this point time had a local character; "London ran four minutes ahead of time in Reading, seven minutes and thirty seconds ahead of Cirencester time, fourteen minutes ahead of Bridgwater time" (1986, p. 43). Prior to the railroad travel was so slow that these slight differences were generally inconsequential, but the speed of rail travel combined with the need to coordinate traffic across vast distances lead to the standardization of time in both Europe and North America, thus depriving many places of one of their unique characteristics. The loss of geographic aura, that is, local identity, is also simulated in *1830* and *Age of Steam*.

In *1830*, the loss of geographic aura is simulated via the tile-laying mechanic. As described above, throughout the game players place hexagonal track tiles on the board. These track tiles cover-up landscape features, such as rivers and mountains. In addition, many of the cities that are printed on the game board can be "upgraded" by placing a tile over them that increases their value. In the 2011 Mayfair printing of *1830*, all of the cities on the map (represented by white circles) have their names printed below them, but these tiles cover-up the place names, and so Scranton becomes indistinguishable from Columbus (Tresham, 2011). Some places retain their identity, such as New York (which has a special set of labeled tiles), and Boston and Baltimore, for which there is a shared set of tiles marked with a

"B" (this is the case in both editions). There are also routes running off the edge of the map at certain places, with labels indicating where these tracks go, such as to the "Deep South" and the Canadian Maritime Provinces. Thus, the loss of geographic aura is not consistent and seems to be largely incidental. From a game production standpoint, having track tiles specific to each city would have greatly increased the amount of pieces in the game and therefore the cost as well and in turn would reduce usability as players would have to hunt for the correct tile. As material culture, this game also shows that affordability and usability are valued in board games, in addition to the conceptualization of the railroad it embodies. The case of *Age of Steam* is similar: track tiles cover-up the landscape, obscuring its details and character. With regard to cities, the larger cities on the board are always visible (as are their names) and are filled with a solid color. The map is dotted with smaller towns initially indicated by white circles with their names printed below, but over the course of play these can be upgraded to large colored cities. This is done by placing a generic "new city" tile over the town, thereby hiding its name and erasing its identity.

In both of these games the uniform track tiles that gradually cover the map erase the unique characteristics of the landscape, both geographic features and place names. The cities themselves are nothing more than nodes in the rail network and only differ in terms of income generated or the goods demanded. In *Empire Builder*, however, the use of crayons to draw tracks on the board means that place names and geographic features are always visible. There are no track tiles creating a uniform landscape, and so the cities, rivers, and mountains are always visible. The decision to use erasable crayons means that the game does not simulate the loss of geographic aura.

Lastly, it is worth noting that the materiality of all three games is essential in determining to what extent they simulate the loss of aura. In the first two, cardboard tiles are placed on a board, physically obscuring identifying markers. In the last, the use of crayons to physically draw on the board, the rules for doing so (lines are drawn from point to point), and the way the board is printed (lines do not go over city names) collectively mean that identifying markers, and thus geographic aura, remain intact. These objects are embedded with ways of understanding the railroad.

## Conclusion

As I have shown, *1830* and *Age of Steam* simulate the metaphors discussed by Schivelbusch: the annihilation of time and space, the creation of new space, and the loss of geographic aura. This suggests that although these changes were only experienced by the generation that lived through the advent of the railroad (as they depend on a comparative perspective), they have in fact shaped our broader cultural understanding of how the railroad changed our perceptions of time, space, and aura, an understanding that is simulated in these games. Material culture studies is concerned with

uncovering the (often unconscious) ideologies and assumptions embedded in objects. In the case of these games this cultural understanding is expressed unconsciously because their focus is on simulating the material conditions of the railroad: laying tracks, improving local infrastructure (by upgrading cities), buying new rolling stock, and moving cargo between places, all in search of wealth. In so doing, these games also have the ancillary effect of simulating Schivelbusch's metaphors.

An objection here might be that this simulation is a "natural" or "obvious" outcome of simulating the material aspects of the railroad. After all, it is historical fact that it took time and money to build tracks across the continent, railroads earned money by moving goods and people, newer locomotives traveled faster than earlier models, and so on. However, the inclusion of *Empire Builder* as a counterpoint shows that it is possible to simulate track building, supply and demand, and increasing speed without also simulating these metaphors and still have an interesting and successful game. All of these games represent different conceptualizations of the significance of the railroad in their represented time and place. From a cultural memory studies perspective this is not problematic; they just do different memory work.

As described previously, all of the games analyzed here are collective texts: their fiction places them in the mid-19th century, and so players are able to assign them referentiality, that is, understand them as representing the past in some way. Although this process is similar across all media, as I have shown in this article one medium-specific way games can construct and circulate cultural memory is through the simulation of historically situated structural metaphors. The metaphors a culture uses to understand the world around it become part of their cultural memory and are then reflected in the material objects that culture produces. In this case, *1830* and *Age of Steam* simulate the structural metaphors used by Europeans and North Americans to understand the ways the railroad changed their experience of time, space, and aura. That contemporary games reflect these understandings suggests that although we no longer conceive of the railroad in these specific terms, that understanding has become part of our cultural memory, and these games keep that understanding in circulation by specifically ascribing it to the past. As Jan Assman writes, "Through its cultural heritage a society becomes visible to itself and to others. Which past becomes evident in that heritage and which values emerge ... tells us much about the constitution and tendencies of a society" (2011, p. 215). The "past that becomes evident" can do so through the material objects a culture produces, and thus material culture studies help locate cultural memory.

This is not to say that simulating such structural metaphors is the only unique way games circulate and construct cultural memory. More research is needed in order to fully understand the potential of games in this area. As noted previously, *Empire Builder* reflects a different conceptualization of the railroad but is a collective text nonetheless, which suggests that even in this specific genre of games there is much research potential. The combination of cultural memory studies and material culture studies enables new understandings of the cultural work games are capable of, as it

enables us to understand how a culture's ideas about the past are reflected in the objects it produces. This is a critical area of inquiry because, as Erll puts it, "What is at stake when reading literature as collective texts is thus 'truth' according to collective memory" (2011, p. 165).

This work also contributes to material culture studies by offering an example of how to study Prown's "diversions" category: by accounting for the interactive nature of the object, be it a game or toy, alongside its material aspect. The materiality of these games is essential: the placing of tiles, the drawing of lines, and the movement of a plastic train are key aspects of simulating the discussed metaphors. At the same time, the immaterial aspects of these objects—rules specifying interaction—are also essential in understanding their cultural role. The goal here is not to understand games merely as games but as culturally situated material objects that are also games.

Lastly, this line of research has enormous potential for game studies as well. Since much of game studies is concerned with the cultural work games do, and their role in society, considering how they construct our understanding of our own past is critical to understanding the medium's capabilities. This in turn has particular implications for debates surrounding the legitimacy of games as historical representations. For one, it shows that regardless of the theories of those engaged in the debate, the games themselves are out there influencing how players understand the past. Secondly, the cultural memory framework allows us to think about this influence in broader, and therefore more productive, terms. Counterfactualism may be inevitable in games that represent the past, but cultural memory's influence operates regardless of historical accuracy. Stepping outside the traditional debate enables new questions and new insights. Lastly, this work contributes to the ongoing research into games as representations generally. Most research in this area considers how games simulate or represent something consciously, but considering games as material culture shows how these representations can be unconscious or unintended, yet still reflect culturally situated modes of thinking. This work thus represents a first step along several new research paths, all of which show promise in furthering our understanding of the cultural work games are capable of.

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## Note

1. In a Puffing Billy tournament, participants play a variety of train games drawn from nine different categories of games. While some of these categories contain a variety of games, 18xx games comprise a category of their own, while *Age of Steam* and games based on it

comprise three quarters of another category. *Empire Builder* and its sequels are also their own category. Such emphasis marks these games as particularly important to the community.

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## Author Biography

**Jason Begy** is a PhD candidate in Communication Studies at Concordia University, Montreal, where he also works with the mLab and the Technoculture, Art and Games Research Centre, in addition to The MIT Game Lab. His research interests focus on modes of representation and metaphor in games. His first book, Players and Their Pets: Gaming Communities from Beta to Sunset, co-authored with Mia Consalvo, is out now from University of Minnesota Press.