Rerolling Boardgames

Douglas Brown

Esther MacCallum-Stewart

Dedication

Douglas Brown

To Miranda,

Two dice go on an adventure...

Esther MacCallum-Stewart

To Fergal,

I'll ALWAYS want to go to Warpcon.

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Introduction

Douglas Brown and Esther MacCallum-Stewart

An edited collection that focuses upon transporting games beyond the digital seems an odd precept, given that the advent of videogames stems from the 1950s. Boardgames are not new to the gaming world. A frieze dated approx. 4000 BC contains a glyph depicting Senet, whilst an image of Nefertari playing the game is prominent within her tomb. Go is thought to have originated between 3000 - 4000 years ago. The international scope of images, references and depictions of boardgames demonstrates that gaming was a universal activity, and from this it is not unrealistic to see boardgames crossing cultures, passing along across trade routes and gift exchanges. If play is universal, then the desire to share different ways of playing, or draw people together around an object like a board, appears to follow as a natural by-product of human curiosity, companionship and competition. However, whilst these games are in themselves masterpieces of strategy and depth, it is not until recently that boardgaming has expanded in multiple new directions, creating a far more diverse genre than before.

In recent years, there has been a huge upsurge in the sales and creation of boardgames, and the market has been deluged with thousands of new titles. The global boardgame market is growing exponentially, and is estimated to reach $8 billion in revenue by 2021 (Technavio 2016). Innovations in design and development have changed the timbre of games, producing new types of boardgame experiences and experimenting with novel types of play. Whilst the mainstream media was slow to catch on to this trend, with articles expressing surprise that boardgames were not simply limited to *Monopoly* and *Scrabble* (Boycott-Owen 2018), the boardgames industry and its consumers have snowballed in size. In 2017, the Games category of Kickstarter accumulated 26% of all the money pledged (approx.$1.5 billion), and hosted 15% of the total funded projects (Bidaux 2018).

The need for physical proximity and space in order to play a boardgame has led to a number of subsidiary activities surrounding the gaming capital (Consalvo, 2007) of the genre. These have affected the design of games, and the ways in which boardgames are played both publicly and privately. Gaming conventions, many of which were well established but fairly stable in terms of numbers, have found demand outstripping growth. In 2017, Gencon sold out before the event took place, selling just under 208 000 tickets. In the UK, attendance numbers at UK Games Expo rose from about 2000 in 2008, to 39 000 in 2017 (UKGE Exhibitor's Guide 2018). There has also been rapid growth in smaller conventions and events. However, these events are not so much competitive as an opportunity for fans to try new titles and make purchases. Tournaments often take place - especially in the related area of Collectable Card Games - but are not the main feature of these events.

Instead, boardgaming is seen as a social activity rather than a purely adversarial one - possibly encouraged by the growth of cooperative boardgames, where players work together towards shared objectives. The growth of boardgame cafes provides players with a library of games from which to borrow, and a place to sit, eat and play, and has given players publicly endorsed places to meet. This is coupled with the rise of events such as meet-ups or regular clubs. In the UK, a downturn in economic spending meant that boardgame afternoons or evenings became a viable revenue stream for publicans, cafe owners and boardgame shops with premises large enough to hold tables. These places either charge a flat rate for the day, or simply allow gamers to use their premises with the understanding that they will make a minimal purchase of food or drink.

The growth of boardgaming, especially in public spaces, is symptomatic of spreadable growth in 'geek' culture, whereby videogames and their topics - science fiction and fantasy - have moved prominently into the mainstream. The growth of boardgames additionally coincides

with a spread of media culture beyond this popularism, that does not rely on mainstream sources to act as a purveyor of taste or to direct sales revenue. Instead, popularity is endorsed by fans, by now a large enough group to drive sufficient revenue. As examples, the rise in science fiction and fantasy television series, growth of viewing via Twitch and other non-syndicated broadcasts, and importance of crowdfunded projects in dictating boardgaming taste, have all provided areas where boardgame knowledge can be transferred. Adaptations and related works are popular aspects of these genres. As Paul Booth argues, there is a connection between gameplay and the dissemination of modern media texts that builds an intrinsic modern relationship between the two:

> The contemporary media scene is complex, and rapidly becoming dependent on a culture of ludism: today's media field is fun, playful and exuberant. More so than any other time, the media we use in our everyday lives has been personalized, individualized and made pleasurable to use.
>
> (Booth 2010, 2)

Within boardgaming, this playfulness has led to distinct cultural outputs. The growth of gaming events and conventions, as well as the upswell of crowdfunded publications through sites like IndieGoGo and Kickstarter, is accompanied by developmental growth, whereby boardgaming ludically expands on its own conceits, forms and play types. Once again, the evolution of design is driven by fans; both thematically, with games featuring certain topics or situations, or through the development of certain types of play and design technique.

Why Boardgames?

During the creation of this book, we were repeatedly asked why we were showcasing boardgames as separate, both theoretically and stylistically, from other forms of gaming. Why not follow the conventions of other texts and journals, who in recent years have adapted to the

growth of analog gaming by opening up their submissions with a broader remit beyond the digital, or include this writing alongside other critical gaming discussions? When we began writing, scholars welcomed boardgaming social events at conferences, there seemed a curious reluctance to look directly at the games themselves and their importance in changing the gaming landscape. However, gamers and colleagues being what they are, as time passed, we noticed that increasingly, boardgames were not only growing in scope and type, but they were also increasingly becoming a contested topic of debate in panels, papers and game jams.

Another strong reason to separate boardgames from their digital counterparts is the ludic complexities arising from the physicality of boardgames as a played entity. The elements of communication, cooperation and competition that take place in boardgames are negotiated strongly through not only the presence of the player, but the tangible nature of the board and its components. This ranges from social behaviors; a controversy during the writing of this book in the *Magic The Gathering* (Garfield, Wizards of the Coast, 1993) community had each side arguing about the social etiquette of shaking hands after a match (Vyper 2018), to the representation of both abstract and concrete ideas and objects within games (discussed more fully in Rogerson, Gibbs and Smith's chapter on boardgame artefacts). Responding to these issues, we wanted to give these debates a place within an edited collection that encapsulated some of the directions in which criticism was being directed, and drew out the nuances unique to these games.

This, then, forms the basis for the chapters within this book, which aims to turn a critical eye on boardgames and boardgaming practices, with minimal recourse to their digital counterparts. Whilst we have played rather fast and loose with the definition of 'boardgame', primarily to address a growing genre (see below), we have done this with the intention of specifically addressing this form of gaming as defined by players, rather than the strict delineation of using

a 'board', and in order to accommodate developments in the genre, for example the use of app technology to support gaming in the physical sphere. Overall, the collection provides a strong introduction to several core ideas surrounding the design and theoretical practices emerging around this genre.

Literature Review

We do not see boardgames as paving new theoretical pathways entirely separate from the rest of Game Studies, however we do see them as critical texts in their own right, and in possessive of specific differentiating elements. We seek to unpick some of these as well as follow some of the developing cognate fields within them. Our remit is to argue that boardgames are as complex as their digital counterparts, and to identify ways in which they can be considered.

Similarly, rather than reinventing the theoretical wheel, we see a number of complex theories emerging within boardgaming scholarship that integrate or bowdlerize existing critical writing about the digital sphere. We found that authors were building on composite ideas of digital, psychoanalytical and gaming capital (Consalvo 2007) in order to develop the ideas about play within the boardgaming arena. Interestingly, however, whilst Caillois & Huzingha in particular dwell on ideas of physical make-believe or play in their definitions of play types we see these ideas extrapolated into more recent theoretical ideas; for example, those of Sicart (2014) and Flanagan (2009). We see these discussions as exhibiting the maturity of Game Studies critique, as well as engaging with the wider contexts of gaming - for example as subversive or politicized entities.

Boardgaming theory also draws from a number of key texts. David Parlett's writing on the history of board and cardgames provided many people with historical context for the genre, as

well as underlining a number of key play themes within games. Discussions of analog play are also covered in Jon Peterson's *Playing at the World* (2012).

Boardgames have also seen the emergence of a distinct lexicon to describe different aspects: monikers such as 'Eurogames', 'Ameritrash', 'party games' and 'traitor mechanic games' started to form around a growing esoteric community. For an excellent account of the term Eurogame, and the typical mechanics of a heavy strategy Eurogame, see Woods (2012). These subgenres in turn contain definitions borrowed and repurposed from other games or words unique to boardgaming. As with videogame terms, this led us to question the ways in which boardgames problematize genre expectations.

Summary of Chapters

When soliciting content, we split our request into four major themes, hoping to direct authors to submit a variety of different pieces, and to encourage different critical approaches in their writing. To our surprise, the accepted submissions were almost evenly spread amongst these four areas.

Our first theme engages with the analysis of play and player behavior, most notable in regard to the three C's (and one S!) of Sociality, Conflict, Competition and Cooperation. Legacy games (whereby play is episodic and has permanent effects on the board, including the destruction of cards, marking of the board and permanent death of playable characters), have become a popular form of play despite their singular nature, and the first two chapters of this collection both touch on these in some way.

Paul Booth's opening chapter additionally uses these games to explore the notion of time and temporality in boardgames. His previous writing on the paratextuality of gaming and other popular media, especially those mediated through the lens of fandom, is the backdrop for his

work here on the relationship of games to time. He examines how time is used as a thematic motif in boardgames, and what this implies in a genre where play is essentially linear in nature. The second aspect of the paper continues this debate by examining the part that legacy games have to play in undermining fixed notions of time in games and breaking this pattern through the changing nature of play that they engender. Again, these types of time manipulation have broader cultural implications within the medium of boardgaming, but also relating to the nature of playfulness in general.

José Zagal's paper follows on from his earlier work of nearly a decade previous to this publication, where he made a number of key assertions about the nature of players and their responses to cooperative play. Since this writing, the number of cooperative games has dramatically increased, and it is obvious that they are a popular types boardgaming. By challenging his previous assertion that players are inherently cooperative, Zagal posits a number of key lessons taken from games in subsequent years, examining how constraints on collaborative play encourage satisfactory play. His rebuttal examines how hindering or allowing the triad of information and communication, trust, and taskwork affect cooperative games and the play that takes place within them. Devising ways in which to make these elements difficult, but still achievable, lies at the heart of a strong cooperative game.

'*Twilight Struggle*, or: How We Stopped Worrying about the Hexagons' by Giaime Alonge and Riccardo Fassone investigates an area that we were expecting - a discussion of a furiously complex game often seen as one of the high points of current boardgame design. *Twilight Struggle* (Gupta & Matthews, GMT Games, 2005) is a two-player game in which opponents play two opposing sides of an incipient Cold War. The authors examine the games' antecedents, and ask whether *Twilight Struggle* epitomizes a historical war game, or develops more along the lines of boardgaming strategy play. Whilst the game appears to dovetail with a

historicized representation of war, the authors ask whether this is an accurate way to approach the game, or whether it has a deeper import within the boardgaming canon.

Systems

Our next section examines more ludological perspectives, including game design, mechanical readings of rules and play, and the use of other technologies to augment gameplay and game design. This section produced two very different perspectives on the physicality of the game, as well as discussions on the introduction of technological aspects such as apps or computer-controlled players and organizers.

Joe Wasserman argues that play is mediated through its physicality. Using the ideas of Lars Elleström's media modalities (2010), he argues that games transmit core ideas through a player's interaction with the game components, and that this allows the transmission of ludically complex ideas. This chapter is presented as a conceptual framework for debate and extrapolation, providing an early taxonomy from which to assess boardgame play.

Rogerson, Gibbs and Smith take a different approach in the understanding of tangible play and argue that to understand boardgame play, it is essential to understand the complex relationship of the player with the boardgame and its components. The authors discuss a number of ways in which pieces can be used through detailed observation over a period of five years, allowing them to integrate arguments about the development of these artefacts, their rhetorical purpose and their broader meaning in terms of playful theory and design. Again, this chapter provides useful ways forwards when critically examining the physical aspects of boardgaming play, especially when these aspects may be in flux as games develop over time.

Increasingly, apps or other electronic supplements are and increasing aspect of boardgames. In *Mansions of Madness 2ed* (Valens, Fantasy Flight Games 2016) and *One Night Ultimate*

Werewolf series (Alspatch & Oku, Bezier Games 2014) the role of the Dungeon Master (DM) is now taken by an accompanying app, and a fan made app for *Tales of the Arabian Nights* (Gallela et al., Z-Man Games) helps players quickly orientate the correct entry in the Book of Tales. Elsewhere, apps like *Chwazi* provide incontrovertible ways in which to determine player order. Karl Bergström and Staffan Björk in their chapter 'A Mixed Blessing? Exploring the Use of Computers to Augment and Mediate boardgames' explore these developments but also question how far they should be integrated into boardgaming play.

Experiences

The third section of this collection involves boardgame experiences - most notably through cultural experiences of play. Souvik Mukerjee opens this section with an in depth look at *Gyan Chaupar*, analyzing the impact this game has had on an international scale, as well as examining the more esoteric aspects of the game as a cultural signifier for living a virtuous life. Mukerjee examines the rich philosophical implications of the game, as well as providing a rich history of *Gyan Chaupar* as a cornerstone of the gaming experience.

Dean Bowman takes a different route in his study of *Archipelago* (Boelinger, Ludically 2012). The game contains a number of elements that draw attention to the problematic history of colonization and encourages the player to engage with aspects of colonialism and slavery. Buying more into the romanticized notion of this period of history as an age of discovery, the game elides many of the issues of the time, including a problematic game mechanic which reduces and subjugates the local population as colonization increases. Through the lens of procedural rhetoric, Bowman unpacks how a playing of the game can bring these issues to the surface, providing an unsettling play experience, and examines how critical debate such as Astrid Erll's debates on cultural memory (Erll 2011) can be applied to games of this nature in a broader theoretical context.

In 'Playing Games, Splitting Selves', C. Thi Nguyen observes how more traditional gaming theory can be applied to social gaming. Using a number of critical examples, Nguyen draws boardgaming through the lens of Caillois and Suits' definitions of play, examining how this affects social play. In most cases, the direct contact involved with gaming creates a strong social formation with its own temporal structure, as well as developing a series of interlinked communicative strategies that inform both play, and the perception of how that play was formed throughout each game.

Design

The last section closes this collection with an examination of design iteration, and how it changes via boardgaming mechanisms. Chapter 10 examines Malcolm Ryan's *The Road*, discussing how it moved through design and development, aspects of emergent play that changed the game, and how to engineer a specific experience within play. By examining how the game developed, Ryan was able to iterate a series of socially challenging circumstances, aimed to make players move beyond traditional play styles. By arguing for the deployment of a systemic narrative - the creation of stories that are the result of carefully designed systems and which use emergent play and a viable design tool, Ryan outlines a system of narrative driven design.

Finally, Owen Gottlieb and Ian Schreiber turn to the practice of designing learning games, again through investigative practice work with two games in the authors' own series *Lost & Found* (2017). The games attempted to teach players about Islamic law through a number of different play styles, which the authors variously describe their attempts to balance aspects like community awareness with the mechanics needed for a traditional Eurogame. In doing so, the authors developed a number of approaches aimed at mitigating the need to convey historical or legal information, and the need to adhere to predetermined game styles.

Definitions and Referencing

We have used the term 'boardgames' flexibly, as many titles fall under this moniker but do not fit the specific criteria of using a 'board'. Games like *Splendor* (André, Space Cowboys 2014), *Forbidden Island* (Leacock, Gamewright 2010), *Century: Spice Road* (Matsuuchi, Plan B Games 2017) and *Codenames* (Chvátil, IELLO 2015) construct a playing area by laying tiles or cards on a flat surface, for example, which form a board-like shape that changes or moves as cards are exchanged, moved or purchased. Other games, such as *Carcassonne* (Wrede, Hans im Glück 2000), involve laying tiles to create maps, which differ during each play session. These games are considered by players to be boardgames, despite not using a conventional 'board' surface to play from, and this type of play is an established trope within the canon of boardgaming play. Additionally, the genre is rapidly evolving, and as a result, producing novel ways to play.

Having said this, however, we have tried to avoid games comprised entirely of cards such as *Magic the Gathering* (Garfield, Wizards of the Coast 1993), *Happy Salmon* (Gruhl & Weir, Stoneblade Entertainment 2016) or LCG games such as *Arkham Horror the Card Game* (French, & Newman, Fantasy Flight Games 2016) for space reasons rather than anything else. Similarly, we did not want to engage with games that involved gambling for money (taking risks, and chancing one's luck, yes, but not for financial gain beyond the remit of the game itself). Overall, this means that the collection is largely focused on recent developments in boardgames and boardgame design, rather than taking deep dives into elements like game balancing, strategizing by players or competitive gaming. All of these discussions have started to emerge as topics of thoughtful critique elsewhere (see for example, the *Analog Games Studies* journal http://analoggamestudies.org/).

Throughout this collection, readers may notice some differences in referencing games as variously created by games publishing houses, individuals and sometimes larger conglomerates such a Fantasy Flight Games or Asmodee. Although we have tried to give credence to individuals where possible, and have used Parlett's convention wherever possible i.e. - title of game in italics: author if known, publishing house and year, for e.g. *Pandemic* (Leacock, Z-Man Games, 2008), with historical games capitalized as proper nouns and also in italics, for e.g. *Chess*, we quickly found that there were issues with holding authors to a definitive version of each game.

The reasons for this are twofold. Firstly, games are sometimes updated and changed or added to over time - for example the game *Tajemnicze Domostwo* (Nevskiy & Sidorenko, Portal Games, 2013), became *Mysterium* (Nevskiy & Sidorenko, Asmodee, 2016) when bought up by the larger company for international distribution. The game underwent substantial revision in rules, artistic style and physical components when this transfer happened. A more complex, but by no means unique example is *Sherlock Holmes, Consulting Detective*; originally published in 1982 by Sleuth Publications (Edwards et al.) and then translated into French by Ystari in 2011 (no translator is listed). The game was then re-translated into English (Edwards et al., Ystari 2014) but contained a number of errors that made solving three of the ten cases very difficult, possibly because of this second translation. These omissions and elisions were subsequently modified in subsequent versions, although it is not stated on the box by whom, and when Space Cowboys bought the company and started to produce new expansions (some of which, but not all, were different from those produced for the 1982 version), the entire series was repackaged and given a makeover - for example the 'London Directory' was reproduced in a larger format, making it easier to read. Throughout this convoluted process, the authors of the original text are sometimes, but not always mentioned on rules or through internet reference site *BoardGameGeek*, (which in this case cannot be taken as entirely accurate - the first edition

of *Sherlock Holmes, Consulting Detective* is quoted as both 1981 and 1982), and translators are not credited. Presumably new authors were involved at some point in correcting the errors, and producing the expanded content such as the maps and directory. More local to our collection, two chapters deal with games that were published independently such as *The Road* (Ryan, 2014) or were examined in the prototype stage such as *Lost & Found*, and *Lost & Found: Order in the Court – the Party Game*, (Gottlieb & Schreiber, 2017a and b), with both games created specifically to investigate design methods and practice.

Consistency of referencing for a single text was also problematic. Whilst videogame developers have become used to releasing games with the expectation that changes may take place through patching and expansions, this flexibility is not financially or physically viable for many boardgames. Boardgame publishers try where possible to release a complete version with a final version of the rules. However, this does not always withstand first contact with the player, and tweaks to terminology, or simply the passage of time means that popular games are often refigured as they pass from company or company, or are simply updated and clarified in subsequent printings. These different editions are rarely noted on the publication or box details, however. Bruno Faidutti's *Citadels*, initially released in 2000 by Hans im Glück, underwent a huge change when games company Asmodee bought and reissued the title in 2016. Asmodee completely changed the games' art style, and Faidutti returned to tweak the design, adding more rules and variants than the original version. This second edition has more diverse artwork and significantly develops the rules additionally enabling the removal of socially objectionable content (previously, the only two female characters were negatively illustrated, and there were no people of color depicted at all). The 2016 version relaunched the game in a more progressive context. Whereas videogames might be able to market this as a patch or expansion (for example the revision and updating of character models in *World of Warcraft* or the release of more content for *Smash Bros.*), and have an accompanying version number or name that a scholar

could reference, this does not happen in boardgames. This meant that often we were received multiple references for what was ostensibly the same game. With the two previous examples, *Sherlock Holmes Consulting Detective* underwent a minor title change to *Sherlock Holmes Consulting Detective - The Thames Murders and Other Cases* (Edwards et al., Asmodee 2016) to distinguish it from the other two expansions, but *Citadels* saw no titular change at all. Similarly, versions in translation were also used by our authors; producing yet more versions of the game with the same reference.

Secondly, in the late 2010s, a landgrab of games, their developers and production houses lead to a rapid shift in the boardgame publishing scene. Both the aforementioned Fantasy Flight Games and Asmodee purchased a broad spectrum of games and design houses, re-releasing many titles under their own label. There are often small differences in these versions; variations in rule explanations, new artwork and sometimes radical overhauls of the games themselves. The various editions of *Twilight Imperium* (Petersen, Fantasy Flight Games 1997, 2000, 2005 and Konieczka & Petersen, Fantasy Flight Games 2017), for example, carry the same title but have radically different contents, art, rules and layouts. Similarly, some games needed revision, clarification, updating, or simply used the name alone - *Arkham Horror* (Klank et al, Chaosium 1987; Launius & Wilson, Fantasy Flight Games 2005; Launius et al. Fantasy Flight Games 2018) repeats characters and locations, but is otherwise a vastly different type of game within its three iterations. Boardgames are also often changed from country to country according to which themes are more popular for the retail audience - for example *Century: Spice Road* (Matsuuchi, Plan B Games 2017a), designed to be a game with two subsequent thematic partners was also released as *Century: Golem Edition* (Matsuuchi, Plan B Games 2017b), which was a stand-alone title. The games had identical gameplay and rules, but the latter switched the theme entirely from the collection and trade of spices, to the mining of precious rocks for trolls and orcs.

Where possible, we have directed the reader to the version that the authors used when writing, rather than asking them to reference an original or first version. This may mean that dates differ from chapter to chapter, with authors accordingly appearing and vanishing with different versions. We hope that readers will forgive us this inconsistency, and in all cases where multiple versions of a game exist, we would refer them to the excellent site *BoardGameGeek* (*BGG*), which often contains images of different versions, as well as details of publication dates, issuing companies and translations.

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Playing for Time

Paul Booth

As board games have become a more popular pastime and hobby (Booth 2015a), it is perhaps not unexpected that there have been multiple themes in board gaming that echo genres made popular in other forms of popular entertainment. One such genre is time travel. The time travel genre in popular literature, film, and television has been in existence for over a century (certainly if we measure its start to H.G. Wells' publication of *The Time Machine* in 1895: see Nahin 2011; Wittenberg 2013; Ginn and Leitch, eds. 2016; Gleick 2016; Jowett, Robinson, and Simmons 2016). Today, time travel has become an immensely popular genre in both entertainment and philosophical discussions: as James Gleick (2016) notes, "Time travel [has] bloomed in [our] culture, its loops and twists and paradoxes. We are experts, we are aficionados" (295). In 2016, for instance, the US television scheduled included five new time travel shows as well as at least six renewed for new seasons. Similarly, at least three new academic books about time travel have been released—Gleick's *Time Travel: A History* joins two edited collections, Sherry Ginn and Gillian I. Leitch's (2015) *Time-Travel Television* and Matthew Jones and Joan Ormrod's (2015*) Time Travel in Popular Media*. Philosophically, the notion of time travel has caught on through books like Paul Nahin's (2016) *Time Machine Tales* and scores of journal articles. It's enough to make you think that someone from the future has gone back in time to plant ideas about time travel in our present.

The play of time travel in ludic media—like video and boardgames—is a relatively recent phenomenon (Jones and Ormrod, eds. 2015), but follows the same tenets as the more mediated versions. Time travel itself may not be the most common genre in board gaming, but multiple games over the past few years have made use of temporal mechanics as a structural and thematic mechanism. The various chapters in this collection focus on boardgames as sites of

critical engagement, and in particular the way different boardgames engender different ideological and cultural functions. I would argue that boardgames both represent an understudied phenomenon and offer unique opportunities for engaging with contemporary cultural meanings. In my own research (Booth 2015a; Booth 2018) I have examined boardgames for the way they connect to larger developments in contemporary culture. For Brown and Waterhouse-Watson (2016) "the study of the broad area of tabletop games generally has been sorely lacking, and the narrative complexities they offer in relation to the role of games as 'world-building activities'" is rarely considered in game studies research (2). It is precisely this "world building" interaction that is, I believe, the most useful aspect of analyzing games for their cultural meaning. It not only reveals the importance of user activity in mediated entertainment, but it also highlights the way individuals can create their own experience of playing boardgames. At the same time, time-travel-themed boardgames—those that encompass changes in temporality—are, perhaps, a surprising development—board gaming does not inherently lend itself to time travel. It is difficult to portray a genre that relies on effects coming before causes within a medium where decisions must have consequences. How to depict the results of a decision if that decision has not yet been made in a game? Time travel texts traditionally follow a character moving through time—boardgames are more often organized through spatial metaphors rather than temporal ones (Booth 2015a). And yet, the website *BoardGameGeek* lists over 100 games with a time travel theme, most of them from the past two decades.

In this chapter, I undertake both textual and ludic analyses of various time-travel-themed boardgames to examine what a focus on temporality in board gaming means in a cultural sense at this particular moment in time. How does time travel fit into a board game mentality? And given the popularity of time travel in other media, is there something unique about board games that reflect a different take on this trope? A textual analysis of boardgames unpacks how the

different pieces, tokens, aesthetics, and general appearance of the game reveals underlying cultural meanings of the game. For example, in the dystopian time travel game *Anachrony* (Turczi et al., Mindclash 2017)*,* humanity is split into four "Paths"—four tribes each focused on fostering and developing a particular facet of human experience. Each Path emphasizes different pockets of humanity, including character attributes (race, gender), personality attributes (warlike, peaceful, knowledge-seeking), and cultural backstories. The pieces themselves have a part to play in the story to tell—each of the "worker suits" has a design and a meaning that goes beyond simple aesthetics. A textual analysis allows us to read the pieces for additional meaning. For example, the Path of Progress ("Supremacy through Intellect!") is described in the game as "the Venice of the Skies" as their emphasis on the intellect has helped them develop advanced technology to live in hovering cities and use flying cars, all the while they retain a sense of "Byzantine, Baroque, Gothic and Renaissance styles" ("The Path of Progress" 2016). Their pieces, therefore, include a griffin's visage and wings that reference both the airborne people and the classical antecedents. Simultaneously, a ludic analysis examines the way the *play* of the game functions as a marker of theme. For example, as I discuss later in the chapter, *Anachrony* features a unique time-travel-themed play mechanic in which players can receive extra resources early in the game, but they must lose that resource later in the game. The time travel mechanic effectively forces the player to use their resources in the past by paying for them in the future. If the player doesn't, they create a "temporal anomaly" which forces them to lose victory points at the end of the game.

In both cases, just as with traditional cult television and film narratives, the aesthetic elements of the game generate meaning; when coupled with the gameplay as well, boardgames reveal deeper cultural resonances. For Kurt Lancaster (2001), playing boardgames asks us to "enter imaginary environments" just as a fictional text invites "simulated environments that people can enter" (xxiv). He investigates "how prospective participants become immersed in …

fantasy play" as a form of identification with the game as a text. The highlight detailed and immersive elements of games like *Anachrony* encourage identification with the cult world (see Gwenllian-Jones 2004), and the interactive elements of boardgames lend themselves to greater player engagement.

As time travel has become a more popular and common genre in board gaming, a focus on playing with temporal mechanics reveals new insights into the relationship between games and time (Booth 2015b). In this chapter I want to focus on two of them. The first explores textual-specific attributes of boardgames that may make scholars and game players renegotiate what it means to be a "time travel" game. What is time travel in a medium that relies inherently on an implicit linearity? In this section I discuss the unique ways that the board game medium might engender a different kind of time travel, one focused on manipulation of play rather than manipulation of time. Second, I open up my exploration of the medium of boardgames to look at a different type of time travel; the temporal displacement of Legacy boardgames, or games intended to be played through in multiple play sessions. The state of the game changes depending on the time played in Legacy games, and I discuss Legacy games as a type of temporal expansion that can only work in the board game medium.

Ultimately, boardgames reflect a changing emphasis in player culture. Time travel on television or film tends to focus on the impact of a single individual on history (Booth 2012) while many boardgames in general highlight the importance of individual action on changing group dynamics of play. At a time when digital technology allows us to play with our temporality and history itself is becoming mutable, when social media facilitates feelings of being in control of our lives and our cultural history, boardgames represent a controllable space of temporal freedom. While time travel may not be the most common genre of boardgames, perhaps it is the most relevant.

Playing with Time

One of the reasons for the preponderance of time travel themed games on *BoardGameGeek* may be that boardgames often reflect themes of control and change specifically. In traditional media formats, time travel stories reflect concerns about fundamental concepts dear to humanity. If we can pick just one metaphor from time travel literature, television, and film, it is the importance and power to effect change that every single individual in the flow of history has. Our most popular time travel television programs (e.g., *Doctor Who* [1963–present]*, Quantum Leap* [(1989–1993]*,* et al.) portray individuals who can affect a small, personal moment in history or change the course of human events. Classic time travel literature focuses on the importance of the individual, in positive and negative ways (e.g., Ray Bradbury's [1952/2005] "A Sound of Thunder" hinges on a single person stepping on a butterfly and thus changing all of history). It may be a dire warning, but what a statement of possibilities—all of history hinges on every moment, on every decision each person makes.

In his authoritative book on the philosophy of time travel, James Gleick (2016) questions why we need to have time travel stories. His analysis concludes that no matter the various ideas, there is only one answer that matters: "All the answers come down to one. To elude death" (Gleick 2016, 309). In other words, time travel narratives are often about control: control over one's environment, control over one's history, control over one's culture, and of course control over one's temporality.

And it is precisely this sense of control that boardgames themselves also engender. Unlike video games, which often give the appearance of control while simultaneously limiting the capabilities of the players (Newman 2002), board games present completely open structures. One must be limited to the game rules if one wishes to play the game as advertised, but there is freedom (and control) in changing the way the game is played. As any family game night

will illustrate (and has often been mentioned in games literature), families will make up their own idiosyncratic rules ("no plurals in *Scrabble*!" or "put all money in the middle in *Monopoly*") which aren't official, but rather reflect player control over the game play. Board games offer control over decision-making, control over play styles, and control over the progression of the game in a way that other popular pastimes rarely can.

Thus, there is a strong connection between time travel and board games—one that rests on control. That both have become more popular at a time when many other aspects of contemporary life—political representation, food production, even availability of streaming options for media—are moving out of people's control tells us about the value of control in our lives. We crave control and seek it out in our narratives and our games. Time travel narratives present shifts in a normally uncontrollable future and an unchangeable past. For Lincoln Geraghty (2016), time travel stories (he is specifically examining the *Star Trek* universe) fall into three categories, each of which rings with this type of control over the past and influence on the future:

> In the first [type of time travel], one-off episodic time travel … often suggest that by engaging with the past, we can better understand our world today. In the second type of episode …audiences are shown how humanity has progressed in order to achieve its utopia….The third mode… relies on the cycles of history to maintain its narrative [as] the televisual flow dictates the historical contexts of the series. (18)

Other elements of time travel stories tell us more about ourselves than they do about history. In chapter about the British television series *Timeslip*, Pete Boss (2016) describes how the show's "pessimism about technology and scientific elites" affected "the children who return to their own time and their families so much wiser" (54).

Beyond control, both boardgames and time travel stories can serve as more than parables; they can also be lessons for understanding cultural touchstones. Our media and our games always reflect cultural issues, and "the questions raised by time travel go beyond narrative and genre…media forms themselves can also be thought of in relation to time travel" (Jones & Ormrod 2015a, 7). For Jones and Ormrod (2015a), time travel first becomes a significant genre when it is associated with the cinema, a medium focused on changing aspects of time (through editing) and temporality (through the tension between the still frame and the moving image): "cinema has been closely associated with time travel through its apparatus and narrative play" (17). In terms of time travel, in my own *Time on TV* (2012), I described time travel, or the "temporal displacement" displayed in contemporary television series, as a metaphor for a culture coming to terms with new forms of technology such as social media. I argued that:

> An emergent temporal complexity in online media has engendered this shift in television textuality. … Television thus displaces and distorts the construct of time, emulating online media characteristics and serving as a heuristic by which viewers learn to control their own discontinuous lives. (4)

Gleick (2016), too, notes this connection between the rise in time travel stories and the digital generation: "The people most immersed in the advanced technologies of communication take for granted" changes in time, for "Time happens differently there"—there being online (296). As digital technology changes how we experience time and temporality—socialization simultaneously instantaneous and historical—is it any wonder that "every hyperlink is a time gate" (Gleick 2016, 307)?

If this is the case, then what does the board game demonstrate? For boardgames, the distortion of time reveals "a reaction to this very digital culture" (Booth 2015a, 1). As more social interactions move online, boardgames harken back to more face-to-face socialization.

Boardgames return us to a type of social environment of human interaction; they present us with new ways of engaging with ancient human needs. We time travel every time we play a boardgame. Little research exists connecting the board game to temporality and temporal structures (in fact, to my knowledge, there is nothing written about it at all, although Zagal and Mateas 2010 have written about video game temporality). In a piece about the video game *Eternal Darkness* (Silicon Knights 2002), I (2015b) wrote that "our understanding of time travel has, since its inception, been discursively constructed by narrative and narratological principles" (134), and perhaps this is one reason why: boardgames are rarely considered narratively significant for storytelling (although there are exceptions). For David Wittenberg (2013), time travel is a "'narratological laboratory,' in which many of the most basic theoretical questions about storytelling, and by extension, about the philosophy of temporality, history and subjectivity, are represented in the form of a literal device and plot" (2). Brown and Waterhouse-Watson (2016) describe the disruption that boardgames can engender in narrative: "there is an important tension" between authorial control and audience action that "ensures games maintain" a narrative flow (6). Indeed, Greg Costikyan (2007) argues that games provide only "the illusion of free will to the player; players must feel that they have freedom of action – not absolute freedom, but freedom within the structure of the system" (6). Even in notions of transmedia storytelling (Booth 2014), the board game is often linked not with specific narrative developments, but with "'unconventional' modes of player positioning" (Brown & Waterhouse-Watson 2014, 6). Indeed, to focus on issues of narrative in a board game means "radically alter[ing] the filmic devices of cinema and television by replacing them with entirely different conventions (Brown & Waterhouse-Watson 2014, 6). One of these new conventions is a shift from "in a spatial metaphor of 'travel'—a literal movement from place to place (or, rather, time to time)" to "a temporal metaphor of synchronicity – a subjective translation between time frames within a single identity" (Booth 2015b, 135). Synchronicity

allows the game player to see not just the individual travelling through time, but also the influence of temporality across the boardgame state. In other words, we come back to the notion of control: boardgames and time travel allow players to control the flow of the game.

But narrative is crucial for time travel games, and understanding how temporality, and temporal displacement, appears in boardgames contradicts the non-narrative argument. In many cases, narrative in time travel boardgames focuses less on *plot* and more on the way players *play*. Play becomes the mechanism by which boardgames disrupt time. As Jones and Ormrod (2015b) note, "Time travel is also a type of narrative that expects much of its audiences for it plays with media form" (1). Here, the play is with play itself.

For example, the game *Legacy: Gears of Time* (Harkins, Floodgate Games 2012) revolves around the invention of key technologies within Earth's history. Players traverse history (divided into ambiguous Timeframes), inventing key technologies, and then totaling points based on how many technologies and influences there are. Most technologies require older technologies to work; for instance, to earn 10 points by playing "The Internet" as an invention, six previous inventions have to be played, going back in time; the Analytical Engine, which itself requires Electricity, Logic, and the Printing Press (which also requires Writing), and the Radio (which also requires Electricity). The game is played in a linear fashion, where each player, in order, can travel to the past and play an "invention card" within the current timeline they are in. In each turn, players cannot travel forward in time. In effect, this means that inventions in the past affect future inventions, but astute players will think in reverse, playing newer inventions and hoping that other players will play older inventions (or vice versa). The game play is linear and in a particular order, but the game text and thought process is focused on time travel. The ultimate time travel impression, then, is not that time travel changes the rules of causality, but that that players must *think* alternatively to linear causality; the effects

have to come before the causes. This reinforces the clear metaphor of time travel, that a single person's decisions can affect the course of history; here, history is merely depicted by technology rather than events.

Other time travel boardgames that feature similar "play-as-time-travel" themes include *T.I.M.E. Stories* (Chassenet, Peggy and Rozoy, Manuel, Space Cowboys, 2015) and *Tragedy Looper* (BakaFire, Z-Man Games, 2014 [originally BakaFire 2011]). Both games change the way games themselves should be played in order to demonstrate shifts in temporality. Both *T.I.M.E. Stories* and *Tragedy Looper* are temporal loop games, in which players will run through a single play session (highly narrativized) until a certain point, and then will loop back to the beginning of the game (almost all components reset) and play through the narrative again, this time learning from their mistakes the first time. It is a board game version of *Groundhog Day* (Ramis 1993) where time loops help players learn to play better. This mechanic similarly matches video game temporality (Zagal & Mateas 2010) that focuses on repetition to learn how to beat a level. As Navarro-Remesal and García-Catalán (2015) note of time loop stories:

> Both the loop travelers and the audience witness the chain of events many times, memorizing and learning from them. Both need to focus on the differences caused by the protagonist's actions as well as the constants, obsessively running through the same scene again and again to unravel its mysteries. (207)

In other words, time loop stories focus on *learning* in order to break out of the loop. The key component of the gameplay that must be mastered is the players' training to learn the specific paths to success.

T.I.M.E. Stories is perhaps the most obvious example of this, as the narrative of the game deliberately sets up the loop structure. The players play as agents in an organization from the

future which attempts to fix problems in the past. Each character in the future "inhabits" the minds of people from the past (so in effect a player can swap characters halfway through a game session). As the characters in the past, players work together to uncover the mystery (which is slowly revealed as the game goes on) until they reach a situation where they either die or run out of time. At this point in the game, they loop back to the beginning of the game but now know more about the narrative. The time travel of *T.I.M.E. Stories* reveals the training inherent in temporal loop stories, as they can avoid dead ends and pitfalls, they know which doors to avoid and which items to pick up. The game effectively trains them to get the right outcome, as the narrative resets as well.

The consequence of this highly-narrativized time loop game is that once a game session has been completed (once the players have looped multiple times and gotten to the end of the story), there is no more narrative to continue. As a business model, this effectively means that players will purchase additional expansion sets with more narratives. Space Cowboys, however, have created a system by which fans of the game can design and distribute their own narratives of the game—indeed, Space Cowboys even included a "how-to" guide with card specifications and gameplay dynamics enumerated. As of December 2016, *BoardGameGeek* lists multiple "fan expansions" of the game (*Switching Gears, Batman: Year One*, *Wolf's Lair*, *Black Knight*, and *Pariah Missouri* are the highest rated), with each recording a user-generated rating and reviews by players (indeed, some fan-made expansions rate higher than the professional expansions). *The Batman: Year One* fan expansion includes a rewrite of the original graphic novel where the players of the game take over controlling the narrative. In many ways, this type of fan affect/interaction mirrors the transformational work that fans of media products do, including writing fan fiction, making vids, and cosplaying, etc. (Booth 2018).

Tragedy Looper was originally released in Japan in 2011; the first English version of the game was released in 2014. The game has a similar structure to *T.I.M.E. Stories*, but rather than getting caught up in a cooperative narrative, the game pits one player against the rest in a mastermind-scenario. There are four location boards and a number of characters; each scenario features characters with hidden roles and tragedies that take place. The mastermind is aware of the larger narrative but plays the characters in particular ways—her goal is to make the tragedies permanent. The other players must try to prevent them. During the run of the game, the mastermind moves characters around and places tragedies upon them. At the end of each turn, if the scenario has a tragedy, it happens if the conditions are met. And "as tragedies happen, players loop back in time, restarting the scenario from the beginning and trying to deduce who the culprit was and why the tragedy occurred" ("Tragedy Looper," 2017). In short, the game hinges on the time travel of its protagonists and on the memory of its players.

Tragedy Looper also features multiple playthroughs, and as Navarro-Remesal and García-Catalán (2015) argue of all time loop stories:

> build[s] complex narratives that can be seen both as worlds and games. The narrative use of the time loop therefore combines time travel tropes with the very ways in which texts are consumed and contemporary trends in narrative. It establishes a strict internal logic and a self-referential deconstruction of the nature of narration. (207)

The narration of both games highlights this self-referentiality; the games arguably feature time travel as a way of changing the fundamental way that boardgames are played—it is unusual to be forced back to the beginning of game where everything is reset *except* the narrative. However, this is precisely the mechanism by which video game players are used to playing digital games, as Chris Hanson (2018) describes in *Game Time*: video games offer "a surprisingly complex and varied range of temporal experiences" (n.p.). One of these

experiences includes dying and coming back at a save point; or restarting the game after finishing it; or replaying levels again with foreknowledge of the enemies. It may be no wonder that boardgames are doing the same thing.

Finally, a third type of time travel in boardgames that features an emphasis on individual action is that seen in the game *Anachrony* (Turczi et al., Mindclash 2017). I have already discussed the way the game can be analyzed textually and rhetorically, but the time travel elements also allow a more narrative-based analysis. In the game, players control one of the four factions vying for power after a cataclysmic asteroid impact. However, the asteroid also brought with it Neutronium, a new element that permits time travel. Players can request resources from the future to help them in their quest to rebuild society; however, later in the game players have to send those resources back in time in order to help their past selves out. If they do not, they will cause a paradox (the game *Paradox* [Suhre, Split Second Games 2016] has a similar time-travel-paradox mechanic where players have to save past, present, and future aspects of civilizations) and will possibly create temporal anomalies (which are bad).

The time travel in *Anachrony* focuses on the consequences of time travel, and requires that players think both ahead and behind in their game play. The game is competitive but largely passively so—as a worker placement game, individual players rarely skirmish, but rather compete over taking spaces on the board. The time travel elements add unpredictability but emphasize the importance of trusting yourself—in order to request items from the future, one must also trust that one will return those items at a later time. In effect, the challenge is not from other players, but from other temporal iterations of the same player.

The time travel games examined here—and there are scores more than I could have discussed given more space (including the odd *Khronos* [Urban & Vialla, Matagot 2006]) in which players simultaneous play across three different timespans, where plays in the past affect the

board in the "future")—focus on the centrality of the individual to the importance of the game. In a symbolic sense, this indicates the larger message of time travel more generally. But by involving the player in a much more interactive role from the start, the boardgames' larger metaphors may seem less textual than in a more traditional media text. But given that all audiences are, in some form, active participants (see especially Jenkins 1992), boardgames become part of a spectrum of participation rather than an outlier.

If boardgames like *T.I.M.E. Stories*, *Anachrony*, and *Legacy: Gears of Time* change the style of gameplay within a single session to invoke aspects of time travel, then a new type of board game play style takes this invocation to a new level—Legacy games. Developed by Rob Daviau in 2011 for his *Risk: Legacy* (Daviau, Hasbro 2011) board game, the Legacy format turns individual game play sessions into discrete narrative moments for a longer game campaign. For example, in *Risk: Legacy*, instead of ending the game entirely when one player has taken over the world, the end of the first play session will reveal changes in the game state for the next game (e.g., perhaps a country has been the victim of nuclear attack and is no longer available to play). As Hall (2014) notes in his *Polygon* review of the system: "*Legacy* is unlike any other board game around. It is a new kind of animal, one that evolves over time." Beyond new game states, there are elements within a Legacy game that reveal new gameplay and new attributes—for example, new rules, new cards, new pieces, new characters, etc. There are blank sections in the rulebook where future rules will get filled in via stickers or write-in updates.

In effect, Legacy games are boardgames that change over time based on the outcome of each game and the various choices made by players. Players will often make physical changes to the board game by marking the board/cards and placing stickers over the board as well as often destroy components. The changes made in a Legacy game are always permanent, so what is done cannot be undone (Legacy 2017). Although (to date) there are no time travel themed

Legacy games, the whole game system itself becomes a form of time travel, one that relies less on the metaphor of the individual and more on the time-travel theme of memory and nostalgia. There is no room for going back and changing something—the game overwrites itself as it plays. The video game *One Chance* (Moynihan, Newgrounds 2010) simulates this as well, giving players only one chance to play through the game. *One Chance* is not a time travel game; and in fact, neither are any of the Legacy games discussed here. However, they subvert the traditional temporality of boardgame play in a way akin to time travel—they ache of nostalgia and memory.

In time travel fictional texts, especially "in the field of telefantasy, there have been a number of prominent examples that have relied on nostalgia," frequently concerned with a "nostalgic view of mankind's past" (Jowett, Robinson, & Simmons 2016, 10–12). Legacy games harness this form of play with memory and nostalgia in order to develop more robust and longer-lasting game sessions. It is certainly possible to play a number of game sessions in one night for a Legacy game (my game group has played three *Pandemic Legacy: Season 1* (Daviau & Leacock, Z-Man Games 2016) games in one night), it would be nigh on impossible to play *the entire game* in one night. Games like *Seafall* (Daviau & Honeycutt, Plaid Hat Games 2016) or *Pandemic Legacy* can take weeks or even months to play given different groups' play styles. *Pandemic Legacy* follows the traditional Pandemic gameplay and story—a group of scientists are trying to cure diseases that appear around the world. Each player's character has specific attributes that help them succeed at this mission. Each month in the game is a new play session; and each month brings new dangers (including mutated viruses and character betrayals) that would have been impossible to plot out in a single game session. Part of the joy of the game lies in the discovery of new elements as you go—the game seemingly evolves with the players as the choices and control in earlier sessions come back in later sessions.

And like time travel games that ask players to move their characters back and forth in time, Legacy games ask the players themselves to move through time. Finishing *Pandemic Legacy: Season 1* was a year-long endeavor for my group, and matched the year-long narrative of the game. By the time we finished we felt like marking the occasion by framing the board and hanging it on the wall, even with its destroyed cities, quarantined areas, and disaster zones. Like the time travel genre itself, which "cannot be approached from one overarching grand narrative," so too are Legacy games not bound by traditional temporalities of boardgames (Jones & Ormrod 2015b, 1). Legacy games are temporal capsules, each session a moment within a longer narrative that, while not necessarily dealing with time travel itself, does manage to effectively demonstrate shifting temporal mechanics unique to boardgames.

Conclusion: Playing with the Future

David Wittenberg (2013) generally separates time travel literature into three "eras" (30–2). The first, which takes place at the turn of the 20th century, uses Darwinism and evolution as a central organizing discourse wherein:

> time travel is always a subsidiary narrative device, utilized in reaction to certain aesthetic and conceptual demands placed upon utopian fiction by the widespread popular reception of Darwinist models of social and political development… plausible utopian futures must be directly 'evolved' from actual present-day conditions, not merely envisaged or conjectured as potential replacements. (30)

The second, running in the first half of the twentieth century, finds Einstein and his theory of relativity as an organizing metaphor, and demonstrates:

> a repertoire of new plot possibilities: temporal dilation or reversal, physical access to one's own past or future (or alternate presents), viewpoints encompassing many or all

possible worlds…Time travel now becomes, above all, a literature about the forms and

mechanisms of storytelling itself. (31)

The third phase, which is largely part of the end of the 20th and beginning of the 21st, sees

quantum mechanics as a guiding metaphor:

the third phase of time travel, which is comparatively amorphous, I designated with the

deliberately broad term "multiverse/filmic." It encompasses a range of story subtypes

that follow upon the advent and triumph of paradox fiction in the mid-century. Some

of the subtypes are revisionist or parodic versions of the loop story; others are quite

serious forays into the psychological or narratological implications of paradox fiction;

still others attempt to pursue more current physical theory, from quantum gravity to

ekpyrotic cosmology. (31-32)

For Wittenberg, such eras help delineate time travel stories into categories, despite the fact time

travel "sprawls across and bleeds into several other genres–from science fiction to fantasy,

romance to comedy, the western to noir" (Jones and Ormrod 2015b, 1). The three eras that

Wittenberg notes follow closely both narratological and physical lines of thought in regards to

time travel—the physics begets the narrative metaphors.

In terms of board games, however, I want to think beyond these areas and more towards a ludic

understanding of time travel, where the central focus is less on the narratological principles

and more on the gameplay and aesthetics of the games themselves. In other words, I want to

posit that rather than seeing time travel in terms of eras, it might be more useful to examine it

in terms of usability. Why are time travel stories so prominent at different times periods? In

the 2010s, I argued in *Time on TV* (2012), it was because of the rise of social media. For

boardgames focused on time travel, there may be larger undercurrents that reveal their

increased presence. At a time when the power of the individual is being drowned out by the

power of the group, and the amorphous mass is threatening; when war is not about one side versus another but about one side versus an ideology; when scientific truth is turned into mere opinion, it is somewhat comforting for a few hours on an evening to take control over history—to play with time and see how other situations might reveal themselves.

Broadly speaking, time travel "affords us the opportunity to view space-time—and the vaunted continuum contained therein that is so popularly described in the narratives of science fiction—in new and differing lights" (Cornelius 2015, 7). It also allows us to see the importance of a single individual in shaping the course of history. Any of us have the power to change the world, to control time and history: all we have to do is play.

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Collaborative Games Redux: New Lessons from the Past 10 Years

José P. Zagal

In 2006, together with Jochen Rick and Idris Hsi, I authored an article that discussed the challenges and pitfalls of designing collaborative games (José P. Zagal, Rick, & Hsi 2006). The basis of our article was an analysis of Reiner Knizia's highly successful collaborative boardgame *Lord of the Rings* (*LotR*) (Knizia, KOSMOS 2000). We argued then that one of the key challenges in designing a collaborative game was helping players overcome the temptation (and natural tendency) to behave competitively (José P. Zagal, Rick, & Hsi 2006). In the years since, much has changed: collaborative boardgames are now a large, rich, and diverse genre that has seen significant critical acclamation and commercial success.

This growth has meant that the design space of collaborative games has also been explored more fully. As boardgame designers continue to innovate and experiment with their designs, our understanding of the design possibilities for collaborative games has grown richer and more nuanced. The scholarly community has also contributed to a better understanding of the medium. For example, Duarte and colleagues (2015) proposed a framework of relevant characteristics of collaborative boardgames and Thålin looked at the role randomization plays in in creating replayability and tension (Thålin 2015). Linderoth (2011) examined the implementation of anonymous actions in collaborative boardgames and the implications for gameplay this might have. Scholars have also looked to collaborative boardgames as a potential tool/medium for pedagogy (e.g. Berland & Lee 2011; Peppler, Danish, & Phelps 2013; Gondree & Peterson 2013) or to better understand things like teamwork (e.g. Anania et al. 2016) or the kind of language use that emerges during collaborative boardgame play (Masuda & deHaan 2015).

With all of this growth, interest, new insights and knowledge, it might be worthwhile to revisit our original article's underlying premise: that players tend to behave competitively. By challenging our original assumption, we might develop new insights, lessons for design, and pitfalls to avoid, that reflect our current understanding of the medium of collaborative boardgames. As avid boardgame players ourselves, we are excited to witness this revolution in game design creativity and hope this chapter can perhaps provide some perspective on the richness of the genre and potential directions for its future.

1. Introduction

Reiner Knizia's *Lord of the Rings* was a watershed moment. Here was a game finely tuned to its source material that also provided a fresh and exciting gameplaying experience that worked. As Woodruff notes,

"Where Reiner Knizia's Lord of the Rings board game delivers brilliantly is in conveying this all-important feeling of fellowship through every aspect of its design. In order to beat the game, players must talk to each other, work together, and one or more Hobbits may have to sacrifice themselves so that the Ring-bearer can get to Mount Doom and destroy his dangerous burden. When your group manages to achieve this lofty goal, it's a victory for all. In this, players get to realize, to some degree, the same sense of community that Frodo, Sam, and the rest of the Fellowship feels in Middle Earth as they struggle against an overwhelming force, one far more powerful than any of the individuals opposing it. Their incredible strength comes from their unity, and Reiner Knizia's Lord of the Rings board game reflects that beautifully" (Woodruff 2007, 186).

In fairness, there were earlier critically successful collaborative boardgames. The prestigious 1983 Spiel des Jahres was awarded to the almost-collaborative *Scotland Yard* (Burgraff et al.,

Ravensburger 1983) and the 1985 prize went to the fully collaborative *Sherlock Holmes Consulting Detective* (*SHCD*) (Edwards et al., Sleuth Publications 1981). However, none of these also reached the level of commercial success that *LotR* did. *SHCD* was so far ahead of its time that it has only seen renewed interest after 2011's re-edition by Ystari. The current popularity and success of collaborative boardgames owes a lot to *LotR*.

LotR won prizes (the Spiel des Jahres (special "Literary Game" prize) and International Gamers Award (general strategy-multiplayer category) in 2001) and also inspired designers like Matt Leacock, a designer of multiple award-winning collaborative games including *Pandemic* (Leacock, Z-Man Games 2008). In his own words, playing *LotR* "helped me understand that a cooperative game could actually be fun and not just a kids educational thing" (Leacock as quoted in *Rules of Play* 2015).

We argued, in 2006, that *LotR* deserved this success because it got so many things "right". Specifically, we identified the following "lessons for design" (Zagal, Rick, & Hsi 2006):

1. It introduced a tension between individual and team utility that highlights the problem of acting competitively.
2. It allows players to make decisions independently of their team, to further highlight the problems of competitiveness.
3. It allows for players to trace the game's payoffs back to their decisions.
4. It provided players with different abilities and responsibilities that encouraged team members to make selfless decisions.

We assumed, when articulating these lessons, that boardgame players are accustomed to playing competitively. A player who is in a competitive mindset when playing a game, we reasoned, needs additional help in recognizing competitiveness as a liability in a collaborative game. Thus, one of the key design challenges for a collaborative game's design is that it should highlight and illustrate how a competitive mindset hinders a teams' success whilst making it impossible to win in a competitive fashion. Competitive players in a collaborative game should fail and clearly understand that such behavior leads to everyone failing.

Our original assumption, that boardgame players are, by default, competitive, may be invalid or at least weaker than before. There has been a marked rise in interest in collaborative games: they regularly appear in popular lists of "best boardgames", and collaborative games also see commercial success. It is plausible that player's gameplaying experiences are currently more diverse and include experience with collaboration. Having played more collaborative games, players might be better at collaborating during play. Furthermore, as Chabris notes in a Wall Street Journal article titled "The Rise of Cooperative Games", collaborative games' design elements "have advanced to the point where they are being incorporated into competitive games" (Chabris 2015). Even playing a competitive game might provide players with a sense of the collaborative mindset.

We have no data to support the notion that players are more familiar with and/or more successful at collaborative gameplaying than they used to be. We also know that the accumulation of anecdotes, popularity lists, and circumstantial evidence does not equal data. However, what if we entertain this notion – that current boardgame players are accustomed to playing collaboratively – as a thought experiment? What new lessons might we derive from existing successful collaborative when viewed under this lens? Also, what directions might

designers take to address the fact that players are no longer "surprised" by a game in which everyone must win or lose together? What happens when players default mode of play is the self-less rather than selfish?

2. Hindering Collaboration

For the purposes of our thought experiment (and later analyses), we will assume that players are naturally inclined to collaborate. This has an obvious implication for game design. Rather than having to worry about ensuring that players understand that a competitive mindset is a liability for success, a game designer can, presumably, look to different ways of hindering or *complicating collaboration* as a driver for interesting player experiences. In other words, the broader design challenge that a collaborative game designer operates under now is how to best hinder or complicate collaborative players in ways that result in interesting, appealing, or fun experiences for their players.

For the remainder of this chapter we will discuss some of the ways that game designers have approached the challenge of hindering their player's collaborative instincts. We will examine design elements from three perspectives: information and communication, trust, and taskwork. For these perspectives, we will articulate additional pitfalls and lessons we believe these new games highlight that complement our observations from our earlier analysis of Knizia's *LotR* (José P. Zagal, Rick, & Hsi 2006). We will conclude with a discussion of how game designers have addressed (or ignored) one of the earlier pitfalls we identified: the need for an evolving challenge in collaborative boardgames.

2.1 Information and Communication

Information is an important part of game playing as information about a game's state is generally the basis for player's decision-making. This information may be observed directly (e.g. examining the board and the location of various pieces), inferred (e.g. if I hold certain cards, I know they are no longer available from a draw pile), or unknown. More formally, games have two types of information: *hidden* and *unhidden* information. Unhidden information refers to information about the game state that is known to players while hidden information is not known to all the players. Elias and colleagues describe three non-exclusive categories of hidden information (Elias, Garfield, & Gutschera 2012, 161–65):

1. *Private information* – information that is known to one player but unknown to the rest.
2. *"Puzzlelike"* hidden information – information that is not known to the all players but must be figured out (discovered) as part of the gameplay (e.g. unmasking the murderer in a murder-mystery game).
3. *Randomness* – information hidden from all the players (usually because it hasn't been determined yet, as in the result of a die roll yet to happen)

Game designers have experimented with ways to manipulate the state of information in order to make collaboration more challenging (Duarte, Battaiola, & Silva 2015). For example, some games offer a way for players to turn unhidden information into secret information. In *Shadows Over Camelot* (Cathala & Laget, Days of Wonder 2005), there are cards that must be played in the "enemy" space of a quest. The cards' numerical value determines the difficulty of achieving the quest. For some of these quests, players are allowed to "play [the card] face down on the board to hide its numerical value from the rest of the group" (Cathala & Laget 2005). Doing so allows the player to then draw a "good" card from a separate deck – usually a boon to the team. Allowing players to create secret information (only the player who played the card

facedown is aware of its numerical value) that would otherwise be unhidden makes it harder for the team to collaborate and determine what their odds of succeeding at a quest are. Furthermore, depending on the value of the facedown card and what the random "good" card was – it may not have been advantageous to hide the information in the first place.

Lesson 1: Allowing players to make information hidden from each other can lead to interesting decisions as they balance the benefits of hiding information with the increased challenge in the collaboration.

In addition to changing the state of information, designers have also experimented with prescribing and defining how important game information may be shared or communicated amongst players. If the game makes it more difficult for players to share critical information, it is presumably easier for players to make sub-optimal decisions as they collaborate. Again, in *Shadows Over Camelot*, players are (generally) not allowed to share, trade, or provide information regarding the cards they hold in their hands. The cards are considered private information and players are warned that they "must never reveal or discuss the explicit values of cards in [their] hand, or volunteer any other specific game information not readily available" (Cathala & Laget 2005). Declarations of what a player intends to do and what their resources and capabilities are can be discussed freely, but only "as long as [their] comments are general and nonspecific" (Cathala & Laget 2005). *Shadows Over Camelot* combines private information (contents of players' hand of cards) and restrictions on communication to make collaboration more inefficient.

However, in our experience, *Shadows Over Camelot*'s restrictions on communication do not quite work in practice. The ruling against sharing information regarding the contents of the

cards is vague enough that players easily find ways of communicating without referring to the specific information on the cards they hold. While a player might not state how many "Holy Grail" cards they hold, they might say things like "I feel very, very well equipped to go on the Holy Grail quest". Thus, the game is often played as if there were no restrictions on sharing information.

Pitfall 1: In a collaborative game, players will naturally want to share information with each other. How can one best prevent players from sharing information that should otherwise need to remain private?

Antoine Bauza's *Hanabi* (Asmodée Éditions 2010) solves the problem of ineffectual and vague restrictions on inter-player communication by severely restricting what, how, and when, players can communicate to each other. In *Hanabi* players are collaboratively trying to "put together 5 fireworks, […] by making a series rising in number with the same colored cards" – the twist is that player's cards are held facing outwards such that everyone knows what everyone else is holding, but not what is in their hand (Bauza 2014). Each turn a player must perform one of three actions: discard a card from their hand, play a card from their hand, or – tellingly, "Give one piece of information" (Bauza 2014). Player communication is thus a game mechanic and otherwise disallowed. On their turn, a player can only, if they choose the "Give one piece of information" action, point out to another player exactly all the cards they are holding of either a given color or of a given number (e.g. "the middle card you are holding is yellow", "both of these cards are fours"). No other communication is allowed, and the players receiving information must try to deduce the properties of the cards they hold as well as infer the intention of the information provider – were they provided that information as a suggestion to play a card, to discard it, to make sure it is neither played nor discarded, etc.

Lesson 2: You can make collaboration harder by making some information private and regulating how players are allowed to communicate that information (if at all). Care must be taken that the restrictions on communication are not ineffectual.

There are more subtle ways of discouraging players from sharing information they should not. In semi-collaborative post-apocalyptic zombie survival game *Dead of Winter* (Gilmour & Vega, Plaid Hat Games 2014), players are each provided a secret goal they are not allowed to share. In order for the players to win, not only must the group goal be achieved, but each player must also succeed in their individual goal. In addition to the (soft) restriction regarding sharing information of the content of their cards, players have a strong rationale (alibi) for acting in ways that may be perceived as sub-optimal, selfish, irrational, or even suspicious (there is also the possibility that one player is a traitor, but more on this later). A player might insist on visiting a location because they are hoping to scavenge resources (cards) they need to have in hand by the end of the game. Or, they might not contribute a resource to a crisis thus offloading responsibility on other teammates so that they can stockpile what they need. *Dead of Winter*'s secret goals introduces a tension between individual and team utility that highlights the problem of acting competitively – but it does so in a way that makes the team utility depend directly on the individual utility. It is an unusual game because, due to the secret personal goal, individuals can win while their teammates lose even though the ideal is for everyone to win together. Having a valid alibi for not wanting to share information helps strengthen the otherwise soft restriction on information sharing.

Providing players with individual goals can short-circuit the collaborative mindset because, as literature from sports and education shows, the selfish behaviors derived from individualistic

goal structures can harm a group's collaborative efforts and reduce trust between members (see Johnson & Johnson 1989 as cited in Morschheuser et al., 2017). However, individual goals can encourage positive emotions towards playing with others and "players who are committed to their private goals may also be committed to their team's goal if it helps them to succeed in a game with intertwined goals" (Morschheuser et al. 2017).

Dead of Winter's theme and narrative is also supportive of the individual/team tension created by secret individual goals in a way that might not be supported as easily in other games. Despite not being based on a zombie-related media property (e.g. *The Walking Dead* or *Dawn of the Dead*), *Dead of Winter* is arguably a paratextual boardgame for "post-apocalypse with zombies" (Booth 2015). As such, players "know" (from other media such as television, film, and comics) that surviving a zombie apocalypse requires banding together collaboratively to scavenge for resources and dealing with crises, while also wondering if it would not be better to tackle things alone. Thus, the existence of a team goal together with individual secret goals is consistent with player expectations of the theme and setting of the game. It also discourages players from trusting each other, but more on that in the next section. For now:

Lesson 3: Providing players with private goals in addition to a team goal gives players a justification for acting selfishly in ways that can jeopardize collaboration but care should be taken to ensure that they are still consistent with the collaborative theming of the game.

2.2 Trust

Trust and collaboration go hand in hand. In order for a group of players to collaborate effectively, they must trust in each other's decisions and abilities (e.g. my teammates will make decisions that are the most effective for the team). When a single player makes all the decisions

for the team, a behavior colloquially referred to as "quarterbacking", there is a lack of trust (e.g. the "quarterback" does not trust their team to make good decisions) that also breaks down collaboration –the collaborative game has devolved into a single-player game. While trust can be established via exhibiting collaborative behavior, it can also be jeopardized by acting selfishly (e.g. Morschheuser et al. 2017). To an extent, trust operates at a social level that is outside of the scope of a game: if a group of players distrust each other, there is presumably little chance they will succeed at a collaborative game. However, since our assumption is that players are good at collaborating, it is plausible that affecting their trust in each other can help make it harder to collaborate. So, the design challenge here is how to seed elements of distrust in a group of players that already trust each other.

Issues of player trust are a core feature in social deduction or hidden role games. Social deduction games are, broadly speaking, games in which players must deduce information about the other player's secretly assigned roles in order to achieve a particular game goal. An early social deduction game is *Mafia* (1986) though currently it is better known as *Werewolf*. In *Werewolf*, players are villagers trying to discover who the secret werewolves among them are. The werewolves, posing as regular villagers, are trying to eliminate the villagers without their "true" identities being revealed. Social deduction games are fundamentally about deception and bluffing with players experiencing tension and anxiety (Eng 2017).

Social deduction games also operate under asymmetries of information. For example, in a 5-player game of *The Resistance* (Esridge, Indie Board & Cards 2010), two of the players will be spies and the rest non-spies. Players know what their role is, but only the spies know who the other spies are. Thus, spies have perfect information (they know who the non-spies are). However, "a non-spy player must determine who her fellow non-spies are, and signal her own

non-spy status; conversely, a spy player must obfuscate his identity to win the trust of the non-spies" (Cowling, Whitehouse, & Powley 2015).

Although social deduction games are generally not collaborative – there are different factions competing against each other and only one faction can win – they are interesting to consider here because they reinforce the notion that hidden information can hinder collaboration in collaborative games and that hidden information (in this case, hidden roles) can be a source of distrust between players.

Many collaborative games (or nominally collaborative games) include a social deduction element by allowing for a team defector, colloquially referred to as a *hidden traitor* (see Shi & Tambasco 2015 for a collaborative game with a hidden benefactor). We have seen traitors implemented in three ways: hidden traitor(s), mid-game hidden traitor(s), and probabilistic hidden traitor(s).

The first case, hidden traitor, is a typical social deduction game situation – a team of players are trying to accomplish a goal which sometimes includes ferreting out those amongst them who are trying to either accomplish a different goal or work counter to the main team's goal. As mentioned, these games aren't strictly collaborative because there are at least two factions/teams.

The second implementation, the mid-game hidden traitor, is more interesting for collaborative games. Here we see games that begin as collaborative experiences but, at some moment during play, force one or more players to change roles (i.e. become a traitor) with new goals to pursue. In *Betrayal at House on the Hill* (Daviau et al., Avalon Hill 2004)

[a]t some random point during the game, one explorer triggers a scenario called a haunt. When the haunt is revealed, one explorer becomes a traitor bent on defeating his or her former companions. The rest of the explorers become heroes struggling to survive. From then on, the game is a fight between the traitor and the heroes—often to the death (Daviau et al. 2010).

Similarly, in *Battlestar Galactica* (Konieczka, Fantasy Flight Games 2008), "there will be at least one Cylon player working against the humans" (Konieczka 2008). Since the game is based on the television show of the same name, players are expected to not only know that humans are "good" and that Cylons are "bad" (Booth 2015, 29), but also that human players are not initially aware that they will betray their fellow teammates. Generally speaking, since the identity of the traitor(s) is determined probabilistically, there is no reason for players to not play collaboratively up until the moment in which their roles change. This can also lead to interesting collaborative strategizing since the group must devise a strategy that will hopefully be the least susceptible for disruption when the traitor(s) is(are) revealed.

The third implementation, the probabilistic hidden traitor(s), is also notable. Here we include games that have the possibility, rather than the certainty of hidden traitor(s). During the setup of *Shadows Over Camelot*, players are secretly dealt a Loyalty card. The eight cards are all identical except for one: the traitor card. Thus, assuming a full contingent of seven players, there is a probability of 1/8 that none of the players was dealt the traitor card (Laget and Cathala 2005). Curiously, the rules do not indicate that fewer cards should be used when playing the game with fewer than seven players. Thus, the odds of having a traitor are lower when the game is played with fewer players. Similarly, in *Dead of Winter*, when distributing the secret objective cards to players during setup there is a chance that one player will receive a betrayal

objective card (Vega and Gilmour 2014). In both games, players have no certainty of the existence of a traitor. This helps create situations where players can question each other's motives regarding their actions: is someone playing poorly or are they trying to subtly jeopardize the team's success? When a player tries to convince a group regarding a certain course of action, do they have the group's best interests at heart? Interestingly, in our experience playing these games, the mere possibility of a traitor is usually enough to seed doubt and mistrust into an otherwise fully collaborative group of players. Here we see collaboration jeopardized by the additional effort it takes to question a player's communications during a game and reflect on their motives for taking certain actions.

Lesson 4: The possibility of betrayal, or the uncertainty of the existence of a traitor, can be as effective in decreasing trust between players as the actual existence of a traitor.

2.3 Taskwork

Our third and final area of examination for ways to make collaboration more difficult is taskwork. From the literature on management we know that effective teams need to be successful at both teamwork (collaboration) and taskwork (e.g. Salas et al. 2015). By taskwork we refer to the specific tasks that players perform while playing a game: maybe dice need to be rolled and selected, cards might need shuffling and distributing, a decision needs to be made about a course of action, tokens and pawns might need to be moved around a gameboard, and so on. Assuming a particular game task, in what ways can a designer make that task harder to accomplish such that collaboration is more challenging?

One common design solution is to limit the amount of time available to complete a task. Perhaps individual player decisions need to be made within a certain time limit, thus allowing

players less time to discuss and plan their strategy. Another common solution is to change the way players actions are synchronized and coordinated – hopefully introducing additional chaos in the coordination required for successful collaboration. If a traditional game synchronizes gameplay such that players take turns to act and carry out their decisions, what if everyone was able to act simultaneously? Time limits and simultaneous gameplay are of course not independent and we have seen games combine both to make collaboration more challenging.

In *Spaceteam* (Hutchings & Sisson, Timber & Bolt 2015), players attempt to repair a spaceship by requesting cards from their teammates and then using them to solve malfunctions and technical problems. This task (obtaining a card needed to solve a problem) is made more challenging in three ways. First, while players can freely pass cards to their teammates, they can only pass cards to those players sitting directly adjacent to them. So, in a four-player game, it takes an additional step to "send" a tool card to the person seating directly in front of a player. Second, all player actions occur simultaneously, there are no turns. Players are constantly shouting at, and over, each other as they try to communicate what they need. Finally, the team has exactly five minutes to repair the ship before everyone loses. Letting everyone act simultaneously makes it harder to collaborate due to the additional cognitive load of having to worry about their own task (e.g. "I need to ask my teammates to get this tool") while listening to, and being mindful of their teammates' needs and requests.

Lesson 5: Time constraints are effective in making collaboration harder because they create an urgency that can lead to reduced coordination and communication problems.

Escape: The Curse of the Temple, described as a "real-time board game" (Østby, Queen Games 2012), is similar to *Spaceteam*. Here players have ten minutes to make their escape from a

temple before it collapses, and everyone loses if even one player fails at exiting in time. To escape, players move around the temple unlocking doors, discovering rooms, and activating magic gems until they locate the exit. To accomplish this, players must each roll their dice until they get the results they need (e.g. roll two "adventurers" to move from one room to another). Dice rolling happens simultaneously with each player responsible for their actions (and rolling their own dice to accomplish them). Sometimes, more than one player needs to be in the same location rolling their dice (e.g. if you need to get more "key" results than you have dice available) and players can also assist each other in "unblocking" their dice (if you roll a "black mask" you have to set that die aside and can't roll it until someone else "unblocks" it by having them roll a "golden mask"). The core task is rolling dice until you get a certain result, but the time limit (enforced via instructions and sounds from an audio CD included in the box) makes this a frantic exercise of rolling and re-rolling while players who have had unfortunate rolls (e.g. too many "black mask" results) desperately ask for assistance from their teammates.

Lesson 6: When everyone can act at the same time it is harder to coordinate, and thus collaborate.

A third, and slightly different, example is *Space Alert* (Chvátil, Czech Games 2008). In *Space Alert* each player is a crewmember of a spaceship exploring the galaxy. While time is running, players discuss and plan the series of actions they each wish to carry out and then, using "action cards" place the appropriate cards in the correct order face down in front of them. Once time runs out, everything is resolved in an automated fashion in the second half of the game. Because players play their action cards face down (creating secret information), teammates are unable to comment ("hey, don't forget you're supposed to fire the cannons in turn 5!") or make corrections if mistakes are made. Individual players are responsible for making sure they are

correctly executing whatever plan was devised. However, the plan is long enough (up to 12 steps) and the time is short enough that there are frequently issues with player synchronization (e.g. someone fires the cannon before another player has charged it) and omission (e.g. someone forgot something they were supposed to do). *Space Alert* combines a time limit, with a long sequence of (hidden) actions that require precise coordination amongst players to make collaboration more challenging.

3. Evolution of Challenge

In 2006 we argued, as our third pitfall to watch out for, that "for a collaborative game to be enjoyable multiple times, the experience needs to be different each time and the presented challenge needs to evolve" (José P. Zagal, Rick, and Hsi 2006). We wrote this thinking of the importance of randomization to keep things interesting – if a game has a deterministic solution, it can be learned and is then no longer interesting. Similarly, a game with too much randomization fails to provide enough reliable information for players to formulate strategies. We failed to account for four different ways that game designers have addressed, or ignored, this pitfall in successful games: variants, non-replayable games, scenarios, and the legacy campaign.

Variant ways of playing a game are perhaps the most common of allowing for a certain kind of replayability. Variant rules often tweak the difficulty of the game by making it easier or harder, allowing for wholly collaborative gameplay (e.g., playing *Dead of Winter* or *Shadows Over Camelot* without a possible traitor), or by introducing new goals or rules. Variants are often included at the end of the rulebook (e.g. *Hanabi* has four variants, Bauza 2014) or as recommendations within the main text (e.g. *Shadows Over Camelot* recommends playing without a traitor until everyone is familiar with the game's mechanics, Laget and Cathala

2005). Variants offer simple ways to enjoy additional replayability by introducing some change that may require new strategies from their players or pique their interest in a novel way.

Some collaborative games eschew replayability entirely. *T.I.M.E Stories* (Space Cowboys 2015) is a recent example. Here players act as "temporal agents" who travel to different worlds to complete missions. Each scenario consists of a deck of cards that are "navigated" (drawn and placed on special boards) by the players. The game is narratively driven and cards act as the world, agents, objects, and events in the story (Sullivan and Salter 2017). The challenge in the game lies in figuring out which locations to visit and/or which choices to make at different points in the game. So, once a mission has been accomplished there is no reason to play it again: the game has a solution, and that solution has been found. There is some replayability in the sense that players can, if they have failed to succeed, reset the game (re-order the deck of cards) and start over – this time with the benefit of knowledge learned from their previous playthrough. *T.I.M.E Stories* is similar in this way to the gamebooks and choose-your-own-adventure books popular in the 1980s (José P. Zagal and Lewis 2015). That being said, the game is conceived as a central framework (or system) – with general rules and gameplay – that is supplemented with new scenarios that are purchased separately. Although each scenario is not replayable, the game itself is, so long as new scenarios are purchased.

The idea of a central framework supplemented by scenarios is not uncommon. Many boardgames include multiple scenarios that can either be played in order (together forming a "campaign") or selected individually based on players' preferences or interests. *Dead of Winter* includes a deck of "main objective" cards that serve as scenarios. They come in different difficulty levels, varying estimates for length of play, and determine what the starting configuration and victory conditions of the game are. These "main objective" cards are

complemented by paragraphs printed in the rulebook that provide narrative context (Vega and Gilmour 2014). So, while each scenario is replayable (due to randomization, the experience will rarely be the same) the game is also replayable by selecting different scenarios. What is interesting about replayable scenarios is that they can present an evolving challenge for players who can try out new strategies and adapt to different conditions.

It is also often the case that scenarios are presented in the rulebook in a specific order they should be played. *Mechs vs. Minions* (Riot Games 2016) is an interesting example because each of the game's scenarios comes inside a separate sealed envelope. They are designed to be played in order and inside each envelope players find both the context and special rules of the scenario they are about to play as well as, often but not always, additional game elements (e.g. cards representing new abilities) that are added to the game. In this way, playing the scenarios in order provides a coherent narrative experience as well as a gameplay experience that increases in complexity and sophistication as new rules and options are added to the game. This is often called campaign play, a term likely borrowed from tabletop role-playing, and prior to that from wargaming (Peterson 2012). Campaign-style games described above are replayable due to randomness and variability within play sessions (e.g. starting conditions might vary slightly, or players might have to roll dice to accomplish tasks).

While *T.I.M.E. Stories* eschewed replayability, it allows players a chance to try again if they fail initially. Other games do not even allow for this possibility. In *Sherlock Holmes Consulting Detective* (Edwards et al., Sleuth Publications 1981) players must collaboratively attempt to outsmart the literary great detective over the course of several scenarios (cases). The problem is that the only way for players to know if they have outsmarted Holmes is to know the solution to the case. Once a scenario is played the solution is made available regardless of player success

or failure. This format, which purists might argue is perhaps closer to a collaborative puzzle than a game, is seeing success with titles such as those in KOSMOS' series *Exit: The Game*. Titles in the series are modelled after different "escape scenarios" where players solve a series of puzzles in order to escape. For example, in *The Pharaoh's Tomb* (Brand & Brand, KOSMOS 2016), winner of the 2017 Kennerspiel Des Jahres, players are unwittingly trapped in a burial chamber while vacationing in Egypt. Despite their patent (and often advertised) lack of replayability, these titles arguably address the pitfall of lack of replayability by offering both an experience that is engaging enough and a reasonable price point such that potential players are willing to purchase them.

Game designers have also innovated in their attempts to provide more deeply meaningful and personal play experiences despite reduced replayability. The standout example here is probably the legacy game. A legacy game provides a boardgame campaign experience where the decisions and outcomes of different scenarios (or play sessions) have a permanent, and irreversible impact on the game. For example, stickers might be placed on the board, new rules might supersede prior rules, cards might be torn up and removed from the game, and so on. This means that earlier scenarios are usually not replayable and that once the campaign is finished, so is the game. *Pandemic Legacy: Season 1* (*PL:S1*) (Daviau & Leacock, Z-Man Games 2015), which features the same core mechanics as *Pandemic,* is a notable example. The key differences are that *PL:S1* includes a deck of cards that is slowly revealed over the course of a fictional 12 month campaign, a set of sealed boxes containing new cards and game components, and a collection of stickers that are revealed and placed over the course of the campaign. When players succeed at a particular month, they "move on" to the next, and so on until the end. Interestingly, if players fail to win a particular month, they can try again once more before moving on to the next month. The design of legacy-style games places restrictions

on replayability due to the irreversibility of the game changes that are introduced (Mosca 2017). This often means that players' experience of the game takes different trajectories – resulting in a more personalized experience unique to each group of players. This hopefully unique experience addresses the pitfall of replayability: players will presumably not want to play the game again for, perhaps, fear of diluting or somehow spoiling their memories of their original experience. Anecdotally, fans of the game often share pictures of their final *PL:S1* board state, and the game's designers even receive requests to autograph gameboards.

4. Conclusions

We began this chapter by highlighting an assumption from an earlier article: players tend to be competitive and thus have a hard time learning and practicing collaboration (José P. Zagal, Rick, & Hsi 2006). We then examined an alternative assumption (players are already great at collaborating), and wondered how this might affect the design of collaborative games. We proposed that, currently, the greatest challenge to collaborative game design lies in devising ways of hindering collaboration in ways that create challenge and lead to game experiences that are interesting and rewarding for their players. We argued that this can be accomplished from three perspectives: information and communication, trust, and taskwork. For each perspective we discussed different strategies employed by game designers including manipulating the state of information, managing inter-player communication, reducing inter-player trust, and using time limits and real-time gameplay to make a games' taskwork more challenging. We concluded by examining how game designers are subverting the need for replayability and evolving challenge in collaborative games by normalizing the use of variants, scenarios, and legacy campaigns. In fact, some designers are successfully subverting the need for replayability with collaborative games that are rewarding despite being playable only once.

While our analyses tended to examine games' design features individually, we recognize that most current collaborative games incorporate multiple combinations of many of the things we have described in order to hinder the collaborative mindset. Spiel des Jahres nominee for 2017 *Magic Maze* is one such example (Lapp, Sit Down! 2017): players are only allowed to communicate during limited moments of gameplay, there is a limited amount of time during which tasks must be performed collaboratively (and in a coordinated fashion), and there is an evolving challenge in that the game consists of a variety of scenarios that can be selected.

As noted by Fennewald (2015), the design space for collaborative games has grown beyond the simple collaborative/competitive distinction we have argued under earlier. There are games that mix those modes by being collaborative until someone is assigned to be the traitor (e.g. *Battlestar Galactica*). And there are games that, through layering of different objectives, can lead to competitive-like results in a collaborative situation. In *Dead of Winter*, even without a traitor, it is possible for some players to win and others to lose – if the team objective is met, but a player did not meet their individual goals, they have technically lost – though the team did win.

So, what might this all mean in the big picture sense? These developments in collaborative game design can challenge other assumptions we might have as well. For example, Xu and colleagues (2011) describe five categories of social interactions in boardgames each of which includes some form of verbal communication. We have seen, however, how collaborative boardgames often explicitly prohibit verbal communication – and, while these boardgames are clearly social, we might need a more nuanced understanding of social interaction that accounts for the role that a game's rules have in shaping and restricting interactions between players in (e.g. "stimulated interaction" in Zagal, Nussbaum, & Rosas 2000). Similarly, discussions of

game design often emphasize the "mechanics", e.g. collaborative game design patterns (Reuter et al. 2014; Beznosyk et al. 2012), and overlook the role that coordination and communication between players are also directly influenced by a game's design. If anything, it seems like boardgames exhibit a greater richness in player interaction modes than videogames (Shi & Tambasco 2015).

Finally, we cannot ignore the increasing role that digital technology is playing in allowing game designers to further push against previously unexplored areas of the design space. *XCOM: The Boardgame* (Lang, Fantasy Flight Games 2015) and *Unlock!* (Carroll, Space Cowboys 2017) both require the use of digital software (a companion app). For *XCOM*, the app handles a lot of bookkeeping and minutiae that would otherwise make the game unpalatable for many (i.e. too much complexity) but, as is especially the case for the escape-the-room game *Unlock!*, the app also serves as a deterrent against cheating (inadvertent or intentional). We are beginning to see some of the possibilities that these digital/analog combinations can afford, and it is reasonable to assume they will lead to further innovations in the design space of collaborative games: an app might automatically adjust the level of challenge during play adapting to its perception of a team's collaborative abilities.

For us, what is perhaps most exciting about the current state of collaborative games is not that these "new" kinds of collaborative games exist, but rather that these are games that are critically and commercially successful. Within what some are calling the "boardgame renaissance" (e.g. Roeder 2015) collaborative games are mainstream games. They are neither exceptions nor outliers. This bodes well for the future of game design innovation and it also suggests that perhaps our new assumption, that boardgame players know how to collaborate, is not that far-fetched.

Acknowledgements

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***Twilight Struggle*, or: How We Stopped Worrying about the Hexagons**

Giaime Alonge and Riccardo Fassone

Introduction

Wargames allow players to uniquely engage with historical facts by 'playing history', that is interacting with significant historical facts – specifically wars and battles – and explore an array of possible results. In this sense, wargames belong to the category that Chapman (2016, 16) describes as "those games that in some way represent the past or relate to discourses about it." The relation between board games and history has been primarily explored through wargames, possibly because of their focus on historical accuracy and meticulous simulation, but also because of the disproportionate relevance of military subjects in the context of popular history. Nevertheless, a number of contemporary boardgames deal with history and historiography by either refuting the wargame legacy in its entirety (e.g. *Les poilus*; Riffaud & Rodriguez, Sweet Games, 2015) or reconfiguring it in complex ways. *Twilight Struggle* (Gupta & Matthews, GMT 2005), the object of this chapter, is a game of the latter category. Designed by Ananda Gupta and Jason Matthews, *Twilight Struggle*, a strategic game about the Cold War, has consistently been hailed as one of the most accomplished examples of card-driven wargames. From 2011 to 2015, the game topped the *BoardGameGeek* rankings as the number one best rated game. Some authors have argued that: "Gupta and Matthews's design differs from many earlier CDS (Card-Driven System) games in that it is not, strictly speaking, a military simulation. Depending on one's definition, it is not even a wargame" (Harrigan & Wardrip-Fruin 2011, 159). But a few years later, one of these very same authors has edited a book – probably, at present, "the" scholarly book on wargames – which opens with the following statement: "Some have argued that because of its atypicality, *Twilight Struggle* is not a "real" wargame, but we will leave such Jesuitical distinctions to the message board" (Harrigan &

Kirschenbaum 2016, XXIX). Even though we both received a secular education, as Italians we are anthropologically inclined to "Jesuitical distinctions", and as such we are going to engage with the issue at hand. In the first part of this chapter (sections 1 and 2), we demonstrate that *Twilight Struggle* is not a wargame. This is a relevant issue not only in terms of the specific taxonomy of *Twilight Struggle*, but also, and more importantly, in the context of a wider discussion on the role of games such as *Twilight Struggle* within the scenario of contemporary boardgaming. Sections 3 and 4 are focused on *Twilight Struggle*'s game mechanics, and analyze their implementation and execution both in the analog and digital versions of the game, also in connection with other games, both analog and digital, previous and contemporary. Our main goal is reading *Twilight Struggle* as a significant example of the multilinear genealogies of wargaming.

What is a wargame?

In order to demonstrate that *Twilight Struggle* is not a wargame, we must first explain what a wargame is. While tracing a comprehensive history of wargames and wargaming falls outside the scope of this article, it might be said that, mechanically, these games belong in a wider genealogy of what Parlett (1999, 224) describes as "games of material capture", that is those games in which "the winner is he who captures and removes from the board all of his opponent's forces." This is of course a very broad category, that encompasses games in which the act of removal is completely abstract (as in *Checkers*) and games in which it is framed as a signifier of a real-world action, from the annihilation of enemy troops to the seizure of the opponent's territory. This very general description of wargames as games of capture has at least two effects on our analysis. On the one hand, it reveals a formal continuity between wargames and contemporary boardgames that use capture as a central mechanic (see for example the disease control mechanic in *Pandemic*; Leacock, Z-Man Games 2007); on the other hand, it

reinforces *Twilight Struggle*'s status as an outlier in the wargame canon, as its use of the mechanic is neither prevalent, nor it constitutes a winning strategy for the discerning player.

Despite their name, wargames at their origins were not games, at least if we accept Roger Caillois' definition of play as an unproductive, leisurely activity (Caillois 1979). Wargaming was born in Prussia in the early nineteenth century as *Kriegspiel*, a 'realistic' simulation of warfare conceived to train officers and prepare future campaigns. By 'realistic' simulation we mean a simulation that portrays war in a detailed and plausible way, with different kinds of units (infantry, cavalry, artillery, etc.), each one with its specific capabilities, moving on a map with a specific geography (mountains, woods, swamps, etc.) that has an impact both on movement and fighting. Even though *Chess* and other chess-inspired games were a source of inspiration for *Kriegspiel*, these, as well as other war related modern games, such as *Risk* (Lamorisse & Levin, Parker Brothers 1959) or *Stratego* (Mogendorff, Milton Bradley, 1961), cannot be considered wargames precisely because their simulation of war is too abstract. With the German unification, *Kriegsspiel* was adopted by the Reich's General Staff as a tool to test war plans. By late nineteenth century, many armed forces around the globe were holding regular wargame sessions. In the United States, the Navy started to play in 1887, and it still plays, at the War Gaming Department of the U.S. Naval War College of Newport, Rhode Island (on military wargames see: Allen 1987; Curry 2011).

Wargames became a recreational activity, a 'real' game in Caillois' terms, in the English-speaking countries between the Victorian age and the nineteen fifties. The first games released by Avalon Hill, such as *Tactics II* (1958), *Waterloo* (1962) or *Afrika Korps* (1964), albeit quite easy if compared with wargames produced in the nineteen seventies, present all the main features of a wargame. 1) Counters of different colors representing the units of the opposing

armies, each one with numbers showing their capabilities in fighting and movement. 2) A map board with a hexagonal grid superimposed to determine movement (although early games, such as *Tactics II*, had a square grid). 3) A Combat Results Table, which – through comparison of the opposing combat factors and a roll of dice – determines the outcome of each fight. As we said, these were quite player friendly games, with a very limited set of rules, but still, if compared with mainstream boardgames, the gap was huge.

Waterloo, for example, has only five pages of rules, focused on movement and combat, simulated in a quite simple way. Many relevant features of Napoleonic era warfare, such as troop morale and the ability of the different generals – features that are simulated in more recent wargames – are absent. Or, to be more precise, in *Waterloo* there are counters representing the various commanders, but these counters are purely decorative, they have no actual role in the game. Napoleon can be killed or shamefully forced to retreat off the mapboard, and nothing happens, the French army goes on fighting just the same. But still, *Waterloo* cannot be mistaken for *Risk* (Parker Brothers, 1959). The presence of about one hundred counters, each one with its own fighting and movement capability, and the fact that the units' movement and combat factors are modified if they are on clear terrain, in a forest, on a river, slope, road or a hill top, generates a vast range of possible choices and results. *Waterloo*'s game designers were really proud of its complexity. Apparently, Avalon Hill considered it something that would have helped selling the game. In the rulebook, we read: "You have completed the instructions to WATERLOO. WATERLOO has been purposely designed to be challenging. For this reason, you must become completely familiar with the rules in order to play correctly."

As often underlined by scholars (Harrigan & Kirschenbaum, 2016, XVI), at the core of wargames there is a tension between reality and abstraction, simulation and playability. As we

just saw, at the beginning, this dialectics was in favor of playability. Rules, albeit "challenging", were relatively quick to learn. A game lasted two or three hours. When the wargame market expanded and more game designers and publishing companies appeared, simulation progressively started to have a bigger share. In the nineteen seventies, there were games like *Rise and Decline of the Third Reich* (Greenwood & Prados, Avalon Hill 1974; also simply known as *Third Reich*), on the Second World War in Europe and North Africa, considered one of the best wargames ever, which had about 500 counters and a thick rulebook. A game of *Third Reich* between two experienced players could last a couple of days. At the peak of this "accuracy curve" there were the so-called monster games, games such as *Drang nach Osten* (Banner & Chadwick, GDW Games 1973) and *War in the East* (Dunnigan, SPI 1974), which both represent the Second World War on the Russian front very thoroughly, with huge and extremely detailed maps, and about 2.000 counters each. These games were popular for a few years. According to popularity polls conducted by SPI, Avalon Hill's main competitor, *Drang nach Osten* and *War in the East* were respectively first and third in the top list of 1977 (Curry 2011, 130). As Peter Perla observes: "Both *Drang nach Osten* and *War in the East* were successful with gamers as well as critics because, though physically large, their mechanics were not overly intricate and difficult to master" (Curry 2011, 135). But other monster games, such as *The Campaign for North Africa* (Berg, SPI 1979), were real Borges-like simulations, which in order to be played required a logistical effort not far from that of the real event. *The Campaign for North Africa* needs two teams of five players each, and 1.000 hours of playing time! (*BoardGameGeek* 2018a).

The Campaign for North Africa was really unique, and monster games in general represented just a portion of the wargame world. There were games like *Squad Leader* (Hill, Avalon Hill 1977), one of the most popular wargames ever published, that were at the same time very

detailed and complex, but also quick to play, provided that you could master a very dense rulebook. And there were 'reasonable' games, where the relationship between simulation and playability was in balance. But as a whole, at the end of the seventies, the hobby was proudly marching toward 'more simulation'. In the long run, this attitude almost caused the hobby to kill itself. In the eighties, wargames suffered from competition with games with thinner rulebooks, or with no rulebooks at all. The first strong competitor, fantasy role-playing, was a spin-off of wargame itself. The first commercially successful role-playing game, *Dungeons & Dragons* (Gygax & Arneson, TSR 1974), was the evolution of a Medieval miniature wargame rulebook, *Chainmail* (Gygax & Perren, TSR 1971), which included rules about sorcery and magic. The second competitor, even stronger, were video games. We are not claiming that the decline in popularity of wargames was caused just by the "Borges effect". The phenomenon is more complex; for a very stimulating – and provocative – analysis, see Costikyan (1996). But it is undeniable that the lack of playability was largely responsible for the hobby's decline. In the nineteen eighties, those who had started to play in the previous decade, at college age, were men (according to another SPI poll (Simonsen 1977, 3), in the nineteen seventies – and things probably had not changed much – just 1% of the wargaming community was composed by women) who had started families and careers, and could not afford such a time-consuming hobby anymore. At the same time, a new generation of wargamers never materialized, at least not on a major scale, because in the nineteen eighties most of the kids were playing *D&D* or *Pac Man*. As noted by Peterson (2012, 475), the 1974 convention where *D&D* was introduced was the start of a "conversion" of a large number of players from wargaming to role playing games: "Gamers from around the country brought back rules, or at least news, of this novel game, and numerous wargaming clubs thereafter became increasingly, if not unhealthily, preoccupied with dungeon adventures."

What saved wargame from irrelevance, if not extinction, was card-driven wargame, which appeared in the mid-nineties, the first example of this new type of wargame being *We the People* (Herman, Avalon Hill 1993), a game on the American Revolution designed by Mark Herman. In a card-driven wargame players move their troops, make them fight, and perform all the other actions, according to cards visually and conceptually similar to those used in collectible card games like *Magic: The Gathering* (Garfield, Wizards of the Coast 1993). Along with the influence of card games, in card-driven wargames we also find some connections with Eurogames. In some card-driven wargames, especially those devoted to asymmetrical conflicts, like *A Distant Plain* (GMT, 2013; on the US intervention in Afghanistan) or *Fire in the Lake* (Herman & Ruhnke, GMT 2014; on the Vietnam War), units are represented by colorful wooden cubes and cylinders more similar to the counters of *The Settlers of Catan* (Teuber, KOSMOS 1995) or *Carcassonne* (Wrede, Hans im Glück 2000), than to the traditional wargame die-cut counters with military symbols. And like Eurogames, card-driven wargames tend to be more player-friendly than traditional wargames. On the one hand, rulebooks are often thinner and the learning process somehow easier, thanks to the cards, which absorb some of the instructions that in previous generation wargames were on the booklet and had to be learned before starting to play. On the other hand, card-driven wargames tend to have fewer counters. Of course, fewer pieces mean less counting and shorter game turns. A quite complex card-driven wargame such as *Paths of Glory* (Raicer, GMT 1999), which simulates World War One in Europe and the Middle East, has less than 200 counters to represent all the troops of the opposing coalitions. With this game – one of the most popular contemporary wargames – you can play the entire Great War, with its economic, political and diplomatic angles, in about eight hours, which of course, if you are used to playing *Catan*, sounds totally outrageous, but if you grew up playing *Third Reich*, sounds like a very reasonable option.

Why *Twilight Struggle* is not a wargame.

When you set up a game of *Twilight Struggle*, the first look at the components gives you the impression that you are going to play a card-driven wargame.

[INSERT IMAGE 1 HERE]

Figure 1. The board in *Twilight Struggle* (GMT, 2005) Italian edition.

There is the GMT logo, GMT being the most relevant publishing company of today's wargames. The board represents a world map with a point-to-point grid. Since *We the People*, the majority of card-driven wargames have 'spaces' (nations, regions, towns, depending on the game's scale) interconnected by lines instead of hexagons.

[INSERT IMAGE 2 HERE]

Figure 2. Space-to-space map: *Paths of Glory* (GMT, 1999)

[INSERT IMAGE 3 HERE]

Figure 3. The classic hexagon grid in *The Game of France, 1940.* (Avalon Hill, 1972)

To move counters from one space to another, the two spaces must be linked. In *Twilight Struggle*, in some of the spaces, each one of which represents a nation (or, in some cases, a group of small nations), the players place some colored die-cut counters following the rulebook's instructions. And as in many wargames – card-driven and not – on the board there

is also a victory points track, which shows which side is winning. According to what happens in the game, the victory points marker is moved toward the Russian or the American side, which contain 20 boxes each. If the marker reaches box 20, the game ends in an automatic victory. It is more or less the same mechanic used in *Paths of Glory*. But the similarities between *Twilight Struggle* and wargames end here.

First of all, *Twilight Struggle* is not a wargame for the very simple reason that the Cold War was not "a" war. It was a much more complex affair. It was a forty year long political, economic, diplomatic, cultural and military confrontation between two superpowers and their allies. There never was a direct fight between NATO and the Warsaw Pact, but there were several regional wars. These wars were either proxy wars, or wars fought by one of the two superpowers, with the other one supporting the local guerrillas, like in the Vietnam War or in the Russian invasion of Afghanistan. In order to design a 'real wargame' based on the Cold War, one should have the armies and navies of the United States, the Soviet Union, and their allies and client states, involved in at least some of these conflicts.

A good term of comparison is *A Few Acres of Snow* (Wallace, Treefrog Games 2011), a game focused on the struggle between France and England to control North America in the eighteenth century. The game simulates this conflict both on the economic-colonization and military level. To win, players must expand and develop their territories, and at the same time harass their opponent. The game offers a very abstract simulation of a series of four different wars fought between 1687 and 1763. The two players have no 'solid' military units at their disposal. The only counters on the map board are the Eurogame-like cubes and discs representing villages and towns. But the players have plenty of military cards, depicting different kinds of units: regular infantry, siege artillery, various types of local militias, and Native American warriors.

With these cards, the players can perform three different actions: raiding or besieging a village/town, or blocking an enemy raid. *A Few Acres of Snow* can simulate war – although in a very simple way – because the conflict between France and England, despite being somehow similar to the Cold War, was fought in a relatively small area. Doing something like this in a game on the Cold War probably would make it too difficult to handle. In *Twilight Struggle* there are 'war cards' that refer to the main conflicts that erupted during the Cold War, from Korea to the Iran-Iraq war, but these cards do not trigger any war simulation, not even on the simplest level. They just produce the growth of American or Soviet "influence" in one country. And it could not be otherwise, because – and this is the second reason why *Twilight Struggle* is not a wargame – the counters the players place on the map board are not military units.

As one of *Twilight Struggle*'s two game designers explains in an article (Gupta 2006, 9), at the beginning they thought about having military units on the mapboard, but then they abandoned the idea. In *Twilight Struggle* counters simply account for the American or Soviet influence in different countries (the goal of the game is controlling more countries than your opponent). In the context of the Cold War, 'influence' is quite a vast concept. Of course, it has a military side. You 'influence' a country by stationing there your divisions and warships, or training its officer corps. But it has many other angles: politics, diplomacy, culture, economy. Placing an influence counter in a country box alludes to almost anything from signing a mutual defense treaty to releasing Hollywood movies, granting Fulbright fellowships, or having the Russian language taught at school. And since they are not troops, these counters do not fight nor move from one space to another (with the exception of the *De-Stalinization* card, which allows the Soviet player to relocate four influence points, but that is a single exception out of a deck of 110 cards). In card-driven wargames, at the center of the game are the counters representing the military units, while the cards are 'just' a tool – albeit a very powerful and complex tool – that

allows the players to use their counters. On the contrary, in *Twilight Struggle*, the heart of the game is the card deck, and the counters are just a way to record the results of the card play.

The third reason why *Twilight Struggle* is not a wargame, or even a historical simulation game, lies in its victory conditions. Wargames provide players with asymmetrical forces, because wars are fought by armies of divergent strength. Sometimes the divergence is stunning, like in Hitler's invasion of France modeled in Jim Dunnigan's *The Game of France, 1940: German Blitzkrieg in the West* (Dunnigan, Avalon Hill 1972). Since it is a good simulation of this campaign, the German forces are disproportionately stronger than the Allied forces. So, how do you make such a game enjoyable for both players? The answer is asymmetrical victory conditions. In order to win, the German player has to destroy the Allied armies and conquer Paris, but the Allied player does not need to conquer Berlin. They just have to perform a little bit better than the Allies did in reality. In the last game turn of *The Game of France, 1940,* if the French Army, albeit beaten and ragged, can still hold the ground and defend its capital, and the British Expeditionary Force has not evacuated from Dunkirk and is still fighting on the Continent, the Allied player is the victor. In *Wir sind das Volk!* (Sivél & Sylvester, Histogame, 2014), a game about the rivalry between East and West Germany all along the Cold War, the two players have to build a functioning economic and social system on the rubble of 1945 Germany, and at the same time harass the opponent. But while the Western player, in order to win, must both create an affluent and peaceful society, and make communism crumble, the Eastern player has just to survive. If, at the end of the game, in 1989, capitalism is flourishing in West Germany and communism is still alive in the East, the Eastern player is the victor. If *Twilight Struggle* had adopted such an approach, the Russian player could win just controlling Eastern Europe, plus Cuba and some other country around the world, in the last game turn (1989). But *Twilight Struggle* does not work in this way. In order to win, the two players must

score exactly the same points, because their chances to win depend on the cards they are dealt and the way they play them. At the beginning of the game there is something like a 'historical asymmetry', because in the setup the US player receives twenty-five influence points and the Russian player just fifteen, but in the long run that is quite irrelevant. The two players have basically the same chances to win or lose.

In *Twilight Struggle*, what is missing is not just a mechanism of victory conditions based on history, but historical simulation per se. The game makes extensive use of the history of the Cold War. Almost every card refers to a specific event or historical figure, but the game does not try to build a historically coherent narrative. You can play the *Camp David Accords* card before the *Suez Crisis* card, even though the Camp David accords were signed in 1978 and the Suez crisis erupted in 1956. James Dunningan, one of the most influential designers in the history of wargames, wrote that when designing a wargame the game designer wants to achieve 'a desired historical result' (Dunningan 2000, 47). He even claims that many players play alone not just because they lack an opponent, but because of the pleasure of 'playing history'. Wargamers are often history buffs and they can be interested in using these games to 'give life' to what they read in military history books. Strategic Studies professor Philip Sabin calls wargames "interactive history books" (Sabin 2012, 102). *Twilight Struggle* is not an interactive book on the Cold War and nobody would play it alone in order to 'reenact' it.

Of course, in wargames, along with historical accuracy, there is also the 'what if' attitude. One of the most thrilling experiences in wargaming is winning the battle of Waterloo with the French Army, or conquering Rome with the Carthaginians. Wargames and counterfactual history are intrinsically connected, not only because military scholars such as Sabin use wargames to study battles from the past (Sabin 2007, 2012), but also because battles are events

particularly well suited to fit into a 'what if' scheme. Many academic historians have nothing but disdain for counterfactual history, especially in its more flamboyant and politically provocative form, epitomized by Niall Ferguson (1997), but some historians are more open. Richard Evans (2013), for example, while confuting Ferguson's theories, sees counter-factualism as a helpful conceptual tool to curtail a too deterministic and teleological vision of human history. Aviezer Tucker (2004, 227-239) convincingly distinguishes between 'necessary' and 'contingent' facts. While necessary facts are products of multilayered phenomena that could not have had a different outcome, contingent facts are episodes whose outcome depends on highly volatile factors, and so they could have had a different conclusion. For example, the end of British colonial rule in India was necessary, while the outcome of a vote at the House of Commons is contingent. Battles, being deeply aleatory events, are quintessentially contingent facts, perfect for counterfactual history. On June 18, 1815, if Marshal Grouchy, instead of pointlessly pursuing the Prussian III Corps, had taken his forces to the main battlefield of Waterloo, where the French army needed their help, Napoleon could have won the day.

In order to fully enjoy the pleasures of counterfactual history, and perhaps realistically support being able to tell yourself that you are smarter than Napoleon, the game must start with the historical conditions. Often, besides simply reproducing the balance of forces present at the start of the conflict, wargames even 'push' players to use their forces according to history. For example, in *Paths of Glory*, the German player moves first, and he has the option to start the game with the *Guns of August* card in his hand. All the other cards are randomly dealt. Only this one can be chosen. It represents the German invasion of Belgium, the first major military action of the Great War. The German player does not have to play it, but since it is a very powerful card, they usually do so. So, almost all the time, a *Paths of Glory* campaign scenario

starts just like the real conflict started, with German columns marching into Belgium. *Twilight Struggle* resembles *Paths of Glory* in several aspects (Antley 2016), but in this game there is nothing like the *Guns of August* rule. The Russian player, who moves first, is not allowed to pick up the *Blockade* card, which refers to the Soviet blockade of West Berlin in 1948, and which could be somehow an equivalent of *Guns of August*. In *Twilight Struggle* all the cards are randomly dealt and the game usually starts with a Russian coup attempt either in Italy or in Iran, both very unlikely historical events, given the political situation of the two countries in the late nineteen forties. While this may be labeled as deliberate counterfactualizm, it is in fact a game design decision. The game as a whole portrays the Cold War as a conflict in which the Russians are on the offensive – at least in the first half – and the opening non-historical coup clearly serves to establish this dynamic. Nevertheless, this lack of historical accuracy is not a problem at all, because *Twilight Struggle* is not a wargame.

Designing paranoia. A procedural analysis

Despite not being a wargame, *Twilight Struggle* certainly deals with war themes. As we have claimed, the game does not aim at simulating with accuracy a specific war scenario, but its goal is the recreation of an era-specific mindset and a related set of cultural and political assumptions. In order to do so, *Twilight Struggle* draws from a number of ludic traditions, of which wargaming is but one. Through the analysis of some game design traits, we will map this complex net of influences and connections.

In the introduction to *The Bomb and the Computer*, a book on the history and theory of wargames published in 1968, Andrew Wilson voices what seems to be a common concern at the time:

have we the intelligence to master the environment which weapons of mass destruction have created? There is nothing academic about this question, however much the past twenty years may have fostered a feeling that nuclear deterrence 'works'.

(Wilson 1968, viii)

While Wilson's book is a detailed and rigorous historical analysis on the origins and uses of wargames, it is also inevitably permeated by some of the then current rhetoric regarding the Cold War. For example, the idea that mutually assured destruction (MAD) via nuclear weapon may in fact 'work' as a deterrent. On the other hand, Wilson's work features a number of interesting theories on the narrow predictive scope of war simulations. Wilson seems to foresee what would later become a sound historiographical assumption regarding the Vietnam war, that is the fact that

> politico-military gaming has clearly not prevented the kind of mistake that is supposed to. For example, it has not stopped a tendency to take a limited number of possibly quite valid assumptions, such as the 'domino theory' in South-East Asia, and suppose them to be the only ones that matter. (Wilson 1968, 65)

The Bomb and the Computer is thus a fascinating document of the social discourses and rhetoric circulating in the late 1960s regarding the simulative, strategic and political implications of the Cold War. This specific zeitgeist, captured by Wilson's work, seems to be what *Twilight Struggle* strives to simulate. Differently from the wargames and the political simulations described by Wilson, as we have demonstrated, Gupta and Matthew's game does not aim at representing via a simulative system a specific conflict, nor a complex political situation, but rather, as claimed by Gupta (2016) himself, strives to "be authentic to the Cold War mentality

as it existed during the Cold War, not in hindsight. For example, the domino theory, which is not particularly well regarded in academic circles these days, is absolute reality in the game mechanics." *Twilight Struggle* can be regarded as an attempt at recreating a specific mindset for the player, in which history is not necessarily simulated from the vantage point of reconstruction, but rather presented to the player as a set of beliefs and assumptions. Just like Ted Raicer had made the First World War 'gameable' in *Paths of Glory* by having players assume "the mentality of World War One generalship" (Gupta, 2016), *Twilight Struggle* arguably aims at making players think in a Cold War-like fashion, by inscribing a paranoid mindset into the game's rules. Or, to say it with Gupta (2006: 10), capture "the historical flavour" of the conflict, which is something rather different from "a desired historical result", as discussed in section three.

In this sense, as observed by Antley (2016), *Twilight Struggle*'s game design can be fruitfully analyzed through the lens of procedural rhetoric, a theory, proposed by Bogost (2007, 29), that aims at building a cultural critique of those artifacts that allow for the "authoring of arguments through processes". In other words, according to Bogost, the interactions among rules and procedures in complex ruled systems such as games and simulations are bound to both reveal the ideological positioning of its authors and generate a response in the player/interactor that enters in a dialogue with the system. In the case of *Twilight Struggle*, the authors' intention to recreate the paranoia and uncertainty of the Cold War is represented in the game through a series of specific design choices that force the players to constantly entertain a peculiar mindset. While Bogost's analysis focuses primarily on digital games, in which rules and procedures are upheld and executed by a computer, we maintain that this same framework can be applied to an analog game such as *Twilight Struggle*, due to its relatively high degree of procedurality. In other words, differently from games such as *Diplomacy* (Games Research, 1961), where

unruled negotiation among players constitutes the core of gameplay, thus making rules less binding, *Twilight Struggle* presents the player with a highly structured system, in which the cards constitute an additional set of rules and procedures built on top of the general manual of the game.

The engendering of a "Cold War mindset" in the player is obtained in *Twilight Struggle* through four main design strategies: the use of a shared deck of cards, the relation between events and operations, the reliance on luck and chance, and the implementation of specific 'paranoia devices'. The use of a single deck of cards for both players is not unheard of in card driven wargames. Games such as *We the People*, *Hannibal: Rome vs Carthage* (Simonitch, Valley Games 1996), and *For the People* (Herman, Avalon Hill, 1998) had adopted this design strategy before *Twilight Struggle*, while games such as *A Few Acres of Snow* are built on a hybrid system, in which each side has its own deck and can also draw from a shared deck. *Twilight Struggle*'s specific implementation of the single-deck mechanic sets the game further apart from other card-driven games. Drawing from the same deck, players can hold cards that benefit the U.S. side (white star), the U.S.S.R. side (red star), or either side (red/white star). Each card can be played for its value in operation points or for the associated event, but if a player chooses to play a card with the opponent's star (e.g. if the U.S. player plays a U.S.S.R. card) the event will be automatically triggered. This is not the case in *We the People* and other similar games, where the opponent's event does not take place. In *Twilight Struggle* this mechanic forces players to think strategically about defusing the opponent's card rather than just leveraging their value in points. In this sense, players often need to consider the implications of a trade-off when playing an opponent's card. Is 'Decolonization' – a strong U.S.S.R. card, providing three operation points – worth playing for the U.S. player or should it be somehow defused by discarding it? In broader rhetorical terms, this mechanic frames

Twilight Struggle as opposite to non card-driven, hex and counters wargames. Whereas in traditional wargames history 'moves forward' through operations (that is when a player moves their troops), in *Twilight Struggle* certain events are triggered *despite* the player's will, and will thus inevitably happen. History does not move when a player moves, but rather seems to proceed at its own inexorable pace.

On this note, the relation between operation points and events is worth mentioning. While a player playing an opponent's card is forced to trigger the card's event, when playing a favorable card, they can decide whether to use it for its operation points or for the associated event. Whereas some cards are usually played for points, as the event is generally considered irrelevant, others have contextual uses that dictate whether it is preferable to trigger the event or use the operation points. The succession of cards played for operations – e.g. to place influence points or attempt a coup – and cards played for events produces a game flow in which mathematical operations such as adding points or rolling dice to subtract influence counters alternate with more narratively dense events. In this sense, the events dilute the mathematical approach of traditional wargames through the adoption of precise historical narratives and the possibility for players to execute disruptive moves such as forcing the opponent to reveal their hand or lowering the DEFCON status, which represents the current level of nuclear threat. The relevance of additive operations such as stacking influence points is thus lessened via the implementation of events that open diverse strategic avenues for players and, at the same time, reinforce the narrative dimension of the game.

While certainly allowing for deeply strategic play, *Twilight Struggle* relies heavily on aleatory components of luck and chance. In the case of coups or realignment attempts, dice rolls can dramatically shift the game's balance. Moreover, the use of cards, that are randomly drawn

from three sets of decks, matching three phases of the Cold War (Early War, 1945-1959; Mid War 1960-1975; Late War, 1976-1989) puts the players in the position of having to deal with unpredictable circumstances and forces them to adapt their strategy accordingly. If an expert player can, in most cases, infer what the opponent is holding in their hand, this prediction can rarely be completely accurate, as the cards are dealt randomly. Along with the rule that dictates that when playing an opponent's card the player is forced to trigger the associated event, the game's significant reliance on chance reinforces the perception that the course of a match can never be fully predicted nor their voluntary actions can account for everything that will happen in the game. Thanks to the implementation of arbitrary mechanics – dice rolls, random draws, etc. – *Twilight Struggle* always feels slightly out of hand and unpredictable, a condition of suspension that seems to hint at the subtle and often unintelligible balance of power of the Cold War.

Finally, *Twilight Struggle* uses two distinct 'paranoia devices', specific game mechanics designed to engender a paranoid and conservative play style. While paranoia is certainly one of the defining mindsets of the Cold War, its relevance to the experience of playing *Twilight Struggle* is certainly heightened beyond any historical accuracy. The implementation of paranoia for what can be defined as dramatic effect in the game is obtained through two specific game mechanics. The first is the DEFCON status indicator, representing the looming menace of mutual destruction. As players attempt to prevent the opponent's coups, DEFCON is usually set at two for most of the game, a situation in which an inconsiderate move may result in the end of the game through nuclear annihilation. The volatility of the DEFCON status promotes a conservative play style and a paranoid mindset regarding potentially disastrous combinations of cards. The second device is the card 'Wargames', that enters play in the Late War phase and allows a player to achieve sudden victory provided they have at least a seven points lead. This

card notably reshapes the game strategy, as both players will try to accumulate victory points in case they draw the 'Wargames' card or, conversely, to prevent the opponent from playing it. This card is an interesting example of a paranoia device and, at the same time, of the primacy of game mechanics over historical accuracy in *Twilight Struggle*. While the card openly refers to the film *WarGames* (Badham, 1983), in which a young hacker almost starts a global conflict, it might be said that implementing a rule that clearly evokes nuclear paranoia in the last stage of the game (1976-1989) is at least historically debatable. Whereas Wilson's preoccupations regarding nuclear war may have been justified in light of the Cuban missile crisis of 1962, Gupta and Matthews' *Wargames* card seems to point at a game design process that privileges playability and atmosphere over historical simulation.

Conclusion: The legacy of *Twilight Struggle*

Twilight Struggle is certainly an exceptional game. It situates itself within a long genealogy of wargames, while not really being one, and at the same time is often cited alongside other kinds of tabletop games such as *Pandemic* as one of the greatest accomplishments in contemporary boardgame design. Despite its exceptionality, Gupta and Matthews' work was certainly influenced by a number of games and forms a template for many other subsequent efforts in historical game design. While arguably being a unique game, *Twilight Struggle* has a past and a future. On the one hand, it seems to belong in a category of wargames-inspired contemporary boardgames that adapt the expansive nature of wargaming to the complex interlocking mechanics of boardgames. A game such as *Twilight Imperium* (Petersen, Fantasy Flight Games 1997), by conflating the scale and duration of traditional wargames with the layered mechanics of boardgames based on colonization, seems to aim at crystallizing this marriage of styles. Nevertheless, while similar in their mixed genealogies, *Twilight Struggle* and *Twilight Imperium* could not be more different. Whereas *Twilight Struggle*, with its historical theme and

the use of a realistic, although highly abstracted, global map, adheres to wargaming's inevitable liaison with speculative history, *Twilight Imperium* uses wargame-like mechanics in a scenario that does away with history, counterfactual or otherwise. Not only is *Twilight Imperium* set in a sci-fi context – which would not necessarily disqualify it from being a wargame – but more importantly it does not provide a map, but rather a series of modular hexagons that can be arranged differently in every game.

Whereas, as previously discussed, card-driven wargames such as *We the People* and *Paths of Glory* directly influenced *Twilight Struggle*, its roots may be also found in a less likely ancestor. Chris Crawford's computer game *Balance of Power* (Crawford, Mindscape 1985) aims at simulating the Cold War through a design philosophy akin to the one adopted by Gupta and Matthews twenty years later. As in *Twilight Struggle*, players control one super-power each, and can operate a number of different systems not just to wage war on their opponent, but also to increase their influence in an area or provide economic aid to certain countries. In this perspective, *Balance of Power* can be rightfully described, using the words of its creator, as an "unwar game" (Crawford 2003, 283), a game in which players try to prevent nuclear war through a series of actions of different scale and effect. The resemblance with *Twilight Struggle*'s DEFCON system is striking, and so is the consistency in the sets of political and historical assumptions informing the two games: in both cases the domino theory works, nuclear annihilation is a serious threat, and war is but one of the options. A later computer game, *DEFCON* (Delay, Introversion Software 2006) would build upon the model of *Balance of Power* by implementing a feature that is strikingly similar, although somehow reversed, to *Twilight Struggle*'s DEFCON status indicator. While in *Twilight Struggle* a greater DEFCON instability prevents players from conducting coups and other military actions, in Introversion

Software's game the closer players get to nuclear warfare, the more they can wage war on their opponents, progressively unlocking the ability to use battleships, bombers, etc.

Both the mechanics and the themes of *Twilight Struggle* have also consistently been adopted as templates for subsequent games. Most notably, the game *1960: The Making of the President* (Leonhard & Matthews GMT, 2007), designed by Christian Leonhard and Jason Matthews, adapts some of the mechanics found in *Twilight Struggle* (e.g. the peculiar use of a single deck of cards) to an even less war-like scenario, that of the 1960 American presidential elections. This specific adaptation seems to work in favor of framing *Twilight Struggle* as something other than a wargame, since its core mechanics, based on the deployment of influence, can be used in the context of a game that depicts a political confrontation.

Other recent games have adopted *Twilight Struggle*'s theme and used different mechanics to portray some of the intricacies and events of the Cold War. *Cold War: CIA vs KGB* (Gigaudaut & Rakoto, Edge Entertainment 2007) is a two-player card game based on a rather simple deception method. Players play several rounds of a blackjack-like game of cards, and the result of every round is modified by a card chosen in advance by the player. While mechanically the game has little to do with *Twilight Struggle*, it seems to revolve around some of the same assumptions regarding the relevance of hidden information and deception in the simulation of a Cold War scenario. *Twilight Squabble* (Mortimer, Alderac Entertainment Group, 2016) is an obvious parody of *Twilight Struggle*, which proves the popularity of the game in the community of gamers; while substantially different from Gupta and Matthews' game, *Twilight Squabble* incorporates both the DEFCON and the space race track, in an attempt to reinforce the connection with the parodied game. It bears mentioning that the title of the game itself seems to highlight *Twilight Struggle*'s ambiguous relation with wargames. This is not the long-

drawn struggle implied by a complex and deep strategical game, but rather a mere squabble. The box of the game reads "The entire cold war in 10 minutes", a nod at the exceptional complexity and duration of wargames, of which *Twilight Struggle* here is taken as a paradigmatic example. It might be said that, although loosely belonging to the neo-genre of card-driven wargames, *Twilight Struggle* somehow defines a genre in itself, as proven by the blurb of the recent game: *13 Days: The Cuban Missile Crisis* (Granerud & Pedersen, Jolly Roger Games 2016), which reads "Experience the dense Cold War suspense and scratch that Twilight Struggle itch in only 45 minutes" (*BoardGameGeek* 2018b).

Twilight Struggle has also spawned a number of expansions and a digital version. While expansions and reprints due to errata or modifications are pretty standard fare for successful board games, digital adaptations of analog games are still relatively rare. In the case of *Twilight Struggle*, the digital version, funded via Kickstarter and released by Playdek in 2016, can be taken as an example of how the implementation of rules in the digital realm substantially alters the game experience in the case of wargames or similar strategic games. In the analog version of the game, players will often find themselves doing relatively simple mathematical operations in order to determine, for example, the outcome of a coup, the digital version automatically calculates the result. While this is certainly a burden lifted off the shoulders of players, it somehow obfuscates some of the rhetorical assumptions of the game, an aspect also discussed by Björk and Bergstrom in this volume. For example, states with higher stability values are less likely to undergo a successful coup, something that players learn through the game manual. This, of course, ties into a set of assumptions about the stability of single nation states during the Cold War. When automatically calculated by the system, the historical implication of this rule gets somehow lost in the acceleration of the procedure, arguably making the designers' argument less clear. At the same time, learning to play the game via a tutorial, as it happens in

the digital version, is a significantly different experience than learning by reading the manual. The tutorial allows novice players to play a match against the AI, and offers explanations for the mechanical and strategic implication of every move. Players somehow 'learn by doing' as opposed to 'learning by reading'. While it might be argued that the tutorial makes the game easier to grasp for a novice player, as it presents a real scenario for play, it should be noted that it somehow, through its own procedural rhetoric, offers the player what are considered more feasible strategic alternatives, potentially hindering more experimental or unconventional play styles.

The relevance of *Twilight Struggle* in the context of contemporary boardgaming is undeniable, but its status as the result of a complex genealogy, spanning traditional wargames, political simulations, and card games has been rarely questioned or analyzed. The aim of this chapter was to offer a systematization of the historical influences and the design traits that contributed to give *Twilight Struggle* its unique appeal and characteristics. Furthermore, our work aimed at discussing the legacy of wargaming within contemporary boardgaming, by using *Twilight Struggle* as testing ground. This is particularly relevant for an anthology on board games, as a number of design strategies and tools commonly used in wargames have influenced certain areas of contemporary boardgaming; in turn, wargames are the result of a series of modifications and shifts in earlier practices. This complex weave of histories and influences seems to somehow crystallize in *Twilight Struggle*, a game that, as we have demonstrated, can be considered as both a compendium and a reconfiguration of earlier (war)game mechanics and themes.

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More than the sum of their bits: Understanding the gameboard and components.

Melissa J. Rogerson, Martin Gibbs, Wally Smith

Introduction

In this chapter, we will discuss the role of the game board and components, not merely as a conveyer of theme, a thing of material beauty and appeal, and a tool that enables play, but also as an artefact where information and calculations relevant to a game are captured, stored, and represented. We stress that, in order to understand the complex activities which play encompasses, it is essential to understand the board and components in all of these diverse contexts. They represent the game's theme, but they are more than empty theming; they look and feel beautiful, but they are more than simple ornaments; they enable and invite play, but they are more than merely toys; they represent information, but they are not purely a data storage or calculation tool. It is these multiple roles that we discuss in this chapter.

It is well-established that a game's components matter; the artwork, the weight and feel of the pieces, the noise of rolling dice, the spectacle of the assembled game have been discussed in both academic (Rogerson, Gibbs, & Smith 2016, Carter, Harrop, & Gibbs 2014, Woods 2012) and hobbyist literature (Wham 2007, 253, Moon 2007, 79). Boards, pawns, dice, cards, tiles and chits construct and embody a game by reflecting its theme through their design, and in what they represent. A game's components are the primary means by which its rules are enacted by the players. Although it is theoretically possible to play a boardgame with neither board nor components, like a player of "*Blindfold Chess*" or the protagonist in Stefan Zweig's *Schachnovelle* (1941), in practice this requires a mental model in which both board and components are recreated. Although the imagined game pieces may not exist as material

objects, they exist as a representation in the minds of the players. The positioning of the pieces matters and must be considered just as it would when played with physical pieces at a table.

Beyond this essential materiality, however, a game's board and components act as a site of *distributed cognition* (Hollan, Hutchins, & Kirsh 2000, Hutchins 1995), where cognitive tasks such as tracking, processing, calculating, comparing and remembering are off-loaded from the player's mind and distributed between the game pieces. Moreover, these cognitive tasks are distributed between the players themselves, as well as through time, as they discover, remember and even forget information. The board and components represent both the current state and the history of the play session – or even, particularly in the case of Legacy games, the history of *all* the play sessions to date. The components are an actor in the play session (Fuchsberger, Murer & Tscheligi 2013, Latour 1997); they may convey, conceal or reveal information; they hold critical information about the game's state "whose actual application will occur at some later time and place, if at all" (Wilson 2002, 629). More than simply being a tool to "make learning easy" (Smith 2007, 170), the board and components provide a processing environment where tasks are carried out, sometimes without the players' explicit awareness. For example, in *Agricola* (Rosenberg, Lookout Games 2007), round cards simultaneously provide new action possibilities and count the number of rounds played; in *Pandemic* (Leacock, Z-Man Games 2008), disease cubes spread infection to adjoining cities along lines printed on the board; in *Ticket to Ride* (Moon, Days of Wonder 2004) and other games with a scoring track, players' scores are represented through movement along the track rather than as a calculated number. Each of these tasks relieves players of the need to count rounds, calculate infection spread, or regularly calculate and compare scores.

In this chapter, therefore, we will discuss the game components as art; the practice of enhancing games through upgraded, special edition, or custom components; and how gamers protect their game components. We point to their function as a rhetorical device, directing players' perceptions and understanding of the game (Booth 2015, 12). We then turn to the instrumental role of the game components as cognitive tools, considering what they allow or afford, the ways in which they are used for calculation and randomization, and their use as a planning device. Lastly, we will consider what we can learn about other forms of game from this understanding. The research reported in this chapter is the result of five years investigating tabletop gaming by the authors; see for example, Carter, Gibbs, & Harrop (2014), Rogerson, Gibbs, & Smith (2015, 2016, 2018), and is deeply rooted in the practices and observations of hobbyist boardgamers.

Components as art

Modern boardgames are known for the attention that publishers pay to their components. Whether they are the oversized wooden cubes of *Imhotep* (Walker-Harding, KOSMOS 2016), the hundreds of individually illustrated cards of *Agricola*, the tiny, carefully molded plastic Imps of *Dungeon Lords* (Chvátil, Czech Games Edition 2009), the outsized three dimensional alpaca starting token in *Altiplano* (Stockhausen, dlp games 2017) (see Figure 4), or the oversized "miniature" monsters of *Blood Rage* (Lang, CMON 2015), boardgame players – and perhaps especially boardgame purchasers – expect care and attention to detail in the preparation and production of the game materials. This extends to the game components, the game board, and even to the game box; growth in the popularity of boardgames has led to increased boardgame counterfeiting and a corresponding increase in complaints about component quality (Jarvis 2018).

[INSERT IMAGE 4 HERE]

Figure 4: *Altiplano* starting token (art: Klemens Franz)

Oliver (we refer to people we have interviewed in this chapter by pseudonym), a committed boardgame enthusiast who has repurposed his family's dining room into a game room, describes his engagement with the game pieces:

> "There's the tactile nature of the components, the colors, the pictures and the in-jokes that people put in games, the shuffling of things, the moving things about, the tile laying, there's a lovely, dexterous, sensuous feeling you get from just interacting with the physicality of the game that I really love."

To enthusiasts like Oliver, play is not just about the game's rules, it is also about interacting with beautiful components. Similarly, in a study of players of *Warhammer 40 000* (Chambers et al., Games Workshop 1987), researchers found that the enormous numbers of dice players were called upon to roll constituted part of the enjoyment of the game: "It's just ridiculous how much dice you can roll … to me that's a lot of fun." (Carter, Harrop, & Gibbs 2014, 14). Proximity of the rolled dice to the site of play was important, as was the sound made by the dice as they fell (18). In related articles, the authors describe the importance to players of miniatures-style games of painting their "minis", with one player observing that "Creating the magnificent spectacle of a fully painted army is an accomplishment one can be rightfully proud of." (Harrop, Carter, & Gibbs 2013). For some, this painting might even be more important than the play itself: "the potential to show off particular painting or modelling skills was very influential on the units that [the players] selected for their army" (Carter, Gibbs, & Harrop 2014, 137); a small number of players even start businesses doing custom painting for others. *Games Workshop*'s July 2015 Annual Report describes "the Hobby" as consisting of

"modelling, painting, collecting, gaming" (Rountree 2015, 2) – reflecting the focus that its *Warhammer* branded stores place on providing a space for people to assemble and paint models together. Others find sociality in attending painting events, both in game stores and in club environments, and in painting miniatures to share with friends as highly personal gifts. Games Workshop's miniatures are "premium priced" and "premium quality" (Rountree 2015, 6); from *Warhammer* players, and from other crafters and makers within gaming communities, we learn that the "lovely, dexterous, sensuous feeling" that Oliver describes is not limited to the pieces as they come in the box or bag, but can be enhanced through custom painting and modding to make the pieces even more attractive, unique or thematic.

Game boards are important as the site where the action of the game unfolds. Boardgaming is situated; it occurs within a particular physical and cultural space (Brown, Collins, & Duguid 1989, Suchman 2007). The board is the part of the game that is most visible when it is played – not only to players but also to bystanders and casual onlookers. It must support the play of the game in its information design and layout; further, it must look attractive and reflect the theme of the game as well as the mechanisms by which it is played. Like a digital interface, the board offers perceived affordances and signifiers (Norman 2013). It must invite players to engage with the game – both theme and mechanisms – and contains and comprises the game's primary playing area. We use the singular "board" here but recognize that a game board may frequently be composed of multiple smaller boards, or may even – as is the case in *Carcassonne* (Wrede, Hans im Glück 2000) – be created as the game is played.

Game boards may be works of art in their own right, as well as providing places where the events of the game unfold. Simon describes this use of a game board as an art work:

I have the board from a game called *Warriors of God* which is about the Hundred Years

War - it's a map of Britain and France – I have that hanging in my living room because

it is a beautiful map.

Diana, who has a dedicated game room to fill with gaming paraphernalia, agrees: "We have a nice collection of original boardgame art. We've framed the premium *Caylus* edition (Attia, Ystari 2005), so we've got the original boardgame's art and it's limited edition, signed, we've got *P.I.* (Wallace, Treefrog Games 2012), we've got *El Capitán* (Kramer & Rösner, White Goblin Games 2007) – where there's beautiful art, we like to present it as art." Other players repurpose game art around their home and even around their bodies, in the case of gaming t-shirts and other clothing, jewelry, and tattoos.

Although it would be an exaggeration to say that boardgame artists are household names, many boardgame players are aware of different artists within the genre, with the better-known including Fernanda Suárez, Franz Vohwinkel, Michael Menzel, Klemens Franz, Beth Sobel, John Kovalic and Doris Matthäus. Some players, like Cora, actively avoid games if they don't like the art style, even if they find the game itself interesting: "it looks like a prototype to me, and I avoid prototypes." Oliver is a fan of Franz's style: "I'm looking at a copy of *Orléans* (Stockhausen, dlp games 2014) at the moment. It looks fantastic. That's Klemens [Franz]'s artwork. It's just beautiful." Rather than using an established boardgame artist for the game *Inis* (Martinez, Matagot 2016), publisher Matagot recruited artist Jim FitzPatrick, known for his Celtic-style art, commissioning some new work and licensing older pieces to reflect the game's theme. This recognition shows that for these enthusiasts, the game components may transcend the game to become art; they recognize that their beauty takes them beyond the purely functional. Like a book collector, their relationship to games "does not emphasize their

functional, utilitarian value … but studies and loves them as the scene, the stage, of their fate." (Benjamin 1969, 60)

A further material element of the game is the box itself. When filled with the game components, the box has weight. There is some evidence that players may use the physical weight of the box as one method for judging the relative depth or playing complexity – also known as the "weight" – of a game. A larger, more densely packed gamebox seems to suggest a longer and more complex game than a smaller or lighter box of "filler." Similarly, the box artwork rhetorically points to the game's theme (Booth 2015, 12), and supporting material on the back of the box provides additional information about the game, its setting or its gameplay mechanisms. In a shop, the box must represent the game and invite play; its appearance and artwork, its mass, and even its dimensions are meaningful considerations for the discerning purchaser. The *Scythe* (Stegmaier, Stonemaier Games 2016) "Legendary Box," which cost US$25, contains no game and no components, just three empty tuckboxes that might or might not be useful for storing game components – it has the same width and length dimensions as the original gamebox, with extra depth to accommodate expansions. Similarly, the *Power Grid Brazil/Spain & Portugal* expansion map (Friese, 2F-Spiele 2009) was released with a box – not because it was required to contain that single additional game board but because the number of expansions for *Power Grid* (Friese, 2F-Spiele 2004) had grown beyond the available space in the original game box. A second "collectors' box" was released with the *Power Grid: The Stock Companies* (Friese, 2F-Spiele 2015) expansion in 2015 to accommodate further game material. Although it would be perfectly possible to store the boards on a shelf, players embrace the opportunity to "Up your game" (Thrower 2018, 96) by investing in premium game storage.

Enhancing games and themes through components

Valuing game components leads players to invest in higher quality game components, even beyond painting and customizing miniatures. These components – which are often supplied by the publisher – may expedite play, as is the case with play mats for games like *Magic: the Gathering* (Garfield, Wizards of the Coast 1993) and *Century: Spice Road* (Matsuuri, Plan B Games 2017) which show players where to place game components; they may add or upgrade a game component, such as the *Sagrada* (Adamescu & Andrews, Floodgate Games 2017) dice trays that were available to backers on Kickstarter (Harkins 2016) or the metal turn order coins released at the *Spiel* game fair for *At the Gates of Loyang* (Rosenberg, H@ll Games 2009); or they may be unrelated to gameplay, as with the themed beer mats offered to purchasers of *Heaven and Ale* (Kiesling & Schmidt, eggertspiele 2017) at *Spiel* in 2017 or Meeple-shaped sweets offered by *Carcassonne* publisher Hans im Glück.

More frequently, though, as described in the *Tabletop Gaming Manual* (Thrower 2018, 96), it is the players themselves who customize and enhance their own games, echoing such productive leisure practices as IKEA hacking (Rosner and Bean 2009), quilting (Stalp 2006) and other forms of crafting. One interviewee, William, was excited to visit Germany during a federal election, as he collected election material to enhance his copy of *Die Macher* (Schmiel, Hans im Glück 1986). These pieces have their own aesthetic pleasures – they add to the beauty of the game – and serve to appropriate the game for its owner (Belk 1988), allowing them an element of ownership over the pieces and therefore the game's play experience, as well as a means of expressing the importance that the game has to them.

[INSERT IMAGE 5 HERE]

Figure 5: Mark O'Reilly's customized Lego minifig "Starting player" token for *Agricola*. Image © Mark O'Reilly, used with permission.

Whilst many players repurpose items found in shops and in their homes to enhance their games, for example by using a toy farm animal or Lego minifig as a starting token in *Agricola* (O'Reilly 2015) (see Figure 2), there is a healthy trade in after-market game components which include custom shaped pieces, draw bags, play mats, and storage solutions. These are sold through boardgaming sites – for example, *BoardGameGeek* sells collapsible silicone "bit bowls" (*BoardGameGeek* Store n.d.) – as well as through Etsy and other craft sites (e.g. epicycle designs n.d.), and specialist stores like *The Broken Token*, who specialize in boardgame storage organizers, and *Meeple Source*, who sell character meeples and "game upgrade kits." Publishers themselves may offer boardgame upgrades marketed as "Premium" editions. These are reprints, like Diana's *Caylus* set, or once-off special editions, often rewards for backers of crowdfunded games, which offer enticements to encourage purchasers to commit to buying the game (and to pay for it) before it is produced. Tasty Minstrel Games' Kickstarter page (Mindes 2017) for *Yokohama Deluxe* (Hayashi, Tasty Minstrel Games 2016), which raised nearly half a million US dollars, uses the tagline "+ metal coins + lots of wood" before detailing the "deluxe" edition's features: a plethora of wooden tokens and metal coins, as well as "stretch goals" including cardboard tiles that are 0.5mm thicker than in the non-deluxe edition, additional wooden pieces, upgraded graphic design on playing tiles, and gold foil text on the box – all for a mere $15 above the cost of the base game (see Fig.6). The Kickstarter page shows that, while 5,694 paid for the deluxe edition and a further 36 retailers took up the deluxe offer, a mere 15 backers pre-ordered the basic game – which will, admittedly, become available in future through a general retail release. Nevertheless, more than 99.7% of the backers of *Yokohama* chose to pay extra to buy a game with more attractive playing pieces.

[INSERT IMAGE 6 HERE]

Figure 6: *Yokohama* Kickstarter page screenshot (Mindes 2017) showing the core "Deluxe" edition before stretch goals were realized.

Similarly, the 2015 Kickstarter (Stegmaier 2015) for the game *Scythe* – which offered four different support levels, each with its own deluxe components, and raised $1.8 million US dollars – sold more copies of the $99 "Collector's" edition than it did of all the other available levels together. The base game, which featured metallic (silver) foil on the box for all copies ordered through the Kickstarter campaign, cost only $59 but sold well under half as many copies as the Collector's edition, which cost nearly twice as much. Other popular deluxe editions include the 1977 "Microgame" *Ogre* (Jackson, Steve Jackson Games 1977), which was re-released in deluxe form to celebrate its 35th birthday (Jackson, Steve Jackson Games 2012), in a box which weighed over 13 kilograms – around 260 times the weight of the original 1977 edition – and the *War of the Ring Collector's Edition* (DiMeglio et al., Fantasy Flight Games 2010), which originally sold for around $500 US and in February 2018 was available – in "lightly used" condition – through the *BoardGameGeek* marketplace for a cool 2,500 €. Not only do boardgamers value attractive components, they are prepared to pay significant sums for them.

Discussion amongst boardgame enthusiasts shows that some hobbyists are taking the time to learn crafting skills in order to make custom pieces to support their games. Elsewhere, we have described the use of FIMO modelling clay to create custom game pieces and enhance game play (Rogerson, Gibbs, & Smith 2016). As with the miniatures painters we described earlier, the "pleasures of production" (Maines, as cited in Tanenbaum et al. 2013, 2604) are here seen to improve on the base game, perhaps through the modeler's increased identification with the game and its components. Diane Close (2007) describes making drawstring bags for game tiles out of suitably-themed fabrics, a practice which led to men in her game group buying their own

sewing machines and learning to sew (Close 2009). By creating a more attractive game, the players create a more attractive gaming experience.

Protecting game components

Once game pieces have been sourced, upgraded, created, or invested in, it stands to reason that they must be protected. Many gamers attempt to keep their games in near-pristine condition – important for games where even accidental marks may reveal otherwise hidden information by providing a means of identifying a card. There is little formal literature on how to protect and preserve games and components; although there has been some interest in this area within the library sector, "Most of the information on tabletop game preservation is not library-specific and exists only on gaming blogs and in forum posts." (Slobuski, Robson, & Bentley 2017). Hobbyist gamers drive interest and practice in how to preserve and protect game components.

There is a significant after-market in add-ons to protect game pieces from wear and tear, as well as from accidental damage. It has become common for gamers to invest in card sleeves – plastic pockets to hold and protect their cards – which can add significantly to the cost of the game (Rogerson, Gibbs, & Smith 2016). Some retailers even offer a discount when shoppers purchase both game and sleeves together, or advertise the required sleeve size on their website together with the game so that gamers can buy them both in one go. A reference list on BoardGameGeek gives details of sleeve sizes from as many as 18 different companies for over 3,000 games (Kranzel 2013). These sleeves allow the game to continue to be played even while the pieces are protected from sticky or dirty hands or from a "Snacktastrophe" (Tannhauser 2004). Intriguingly, although card sleeves are widely used by gaming hobbyists, in much the same way as comic book enthusiasts bag their comics (Brown 1997), they do not (yet) appear to be widely used in libraries (Slobuski, Robson, & Bentley 2017). Unlike the bags for comic

books or folders for trading cards, which preserve their pristine contents against the potential for future capital gain (Brown 1997, 14), card sleeves explicitly enable the game to be used; they preserve and promote its play value.

Another level of protection is offered when packaging the game inside its box. "Bagging" components in small ziploc bags keeps similar components together and can help to ensure that they are all packed away inside the box. Ziploc bags are sometimes supplied with games, including *Spyfall* (Hobby World 2014), where the bagging of the game is essential to enable play, but may be obtained elsewhere – from hobby stores, from banks, or from specialist suppliers who produce bags in a range of colors to match the colors of the player or resource tokens in games (Bauer 2012). Some libraries separately barcode individual component bags of game pieces; an innovative solution in one library involved weighing the game pieces to identify any attrition (Slobuski, Robson, and Bentley 2017). Contributors to BoardGameGeek discuss optimal ways for bagging a game, to allow for quick setup for a preferred number of players (Santoro 2013), to fit the game into the box (Fuentes 2015), or simply to satisfy their own preferences for game storage (Alspach 2012). Indeed, some gamers will label individual bags to expedite packing up the game and to ensure that it is packed in their preferred configuration (Runolfsson 2012). Tuckboxes and other custom storage solutions allow for further protection and storage of game components and may be customized to match the game's theme or artwork – further emphasizing their importance to players (see Rogerson, Gibbs, and Smith 2016).

As we have seen in this discussion so far, the materiality of the pieces is itself important to the hobbyist gamer. Whether they are seen as pieces of art to be admired, as representations of a theme, or as an opportunity to express ownership through self-expression, game pieces and

objects appropriated as game pieces inherently provide part of the enjoyment of play and provide a connection to other work examining material culture (Highmore 2014, Miller 2009, 2010). But it would be a mistake to dismiss a game's components as "merely" material, as simply pretty pieces that highlight the game's existence in the material world; as we will show, a game's components afford the range of interactions that constitute the game, allowing players to make sense of a play experience, to understand the state of a game, and to create and amend plans of action.

Game components as cognitive tools

Just as playing games is inherently social (Eklund 2012), the ways in which we understand and make sense of the world are "fundamentally cultural" (Hutchins 1995). We make sense of our experiences by relating them to other things that we have experienced and by combining our own incomplete knowledge of a situation with others' (Hutchins 1995). It is through this social and collaborative process that we create meaning in gaming situations – but players do not only collaborate with the other people at the table. Instead, they make sense of a game and its state by combining the information that is encapsulated in and represented by the game's components with their own and their fellow players' cultural and historical knowledge and personal gaming capital (Consalvo 2007, Walsh and Apperley 2009). This gaming capital is the player's ability "to adapt to different types of gameplay, various games, and changing notions of what's important to know about games." (Consalvo 2007, 184); it arises from their overall engagement with gaming rather than from a single play, and includes their engagement with paratexts as well as with the games themselves (Consalvo 2007, 4-5).

"Much of what matters about human intelligence is hidden not in the brain, nor in the technology, but in the complex and iterated interactions and collaborations between the two"

(Clark 2001, 154, Sutton, 2005, 223). In the following section, we will explore the ways in which players and game components interact and create knowledge by describing and discussing the types of information and processes that the game pieces capture and represent and how they influence the game experience. We acknowledge the importance of the human body, which mediates between the player and the components, and provides additional tools for off-loading computation and memory processes.

What do the game components allow?

Even without considering the potential for game pieces to represent processes and calculations, it is clear that the pieces of a game indicate its current state. The behavior of components is constrained by the board or playing area, which signifies possible pathways, actions, and choices (Norman 2013, 132). In *Concordia* (Gerdts, PD-Verlag 2013), the player moves along their choice(s) of land and sea routes which are indicated on the gameboard; in *Agricola*, they select from the available action opportunities which are displayed on boards and cards; in *Carcassonne*, they choose where to place a tile according to the constraints of the neighboring tiles. More broadly, game components afford a wide range of activities which include collecting, trading, ordering, randomizing, placing, combining, passing, transforming, stacking, explaining, and directing. Collecting is seen, for example, in *Ticket to Ride* where players select from available train and route cards to form meaningful sets, as well as in simple games like *Enchanted Forest* (Matschoss & Randolph, Ravensburger Spieleverlag 1981) where players race to be the first to collect a particular fairytale object like a golden crown or magical boots. Trading between players – a cooperative activity that is often fundamental to the progress of a game and of a player's strategy – occurs in *Catan* (Teuber, KOSMOS 1995) as well as in *Bohnanza* (Rosenberg, AMIGO Spiel + Freizeit GMbH 1997), which introduces

the need for ordering and sequencing of resources (cards). Cards, tiles and resource cubes can be transferred between players and added to their personal playing areas. Randomizing is introduced into a host of games through shuffling and through dice, as well as through mechanisms such as variable setup (e.g. *Catan*) and random draws (*Carcassonne*). Placement of tokens in "worker placement" games like *Agricola* and *Caylus* is an action selection mechanism which allows the player to take a corresponding action; the number of tokens that can be placed on each space is generally limited, so the tokens both indicate which player has taken a particular action and show whether or not the action space (and, therefore, the corresponding action) is available for other players to occupy. Game pieces may be combined or ordered, as in word games, e.g. *Scrabble* (Butts, James Brunot 1948), passed to other players as in *Mystery of the Abbey* (Faidutti & Laget, Days of Wonder 1995) or *7 Wonders* (Bauza, Repos Production 2010), transformed into other types of piece as when a player takes the upgrade action in *Le Havre* (Rosenberg, Lookout Games 2008) or "Kings" their piece in drafts or checkers, or stacked, as they are in *Rhino Hero* (Frisco & Strumpf, HABA 2011) or *Water Lily* (Ehrhard, GameWorks 2010). Moreover, they may be used as a tool to explain the game, as in *Fear* (Friese, 2F-Spiele 2017), to add additional rules, as in *Fluxx* (Looney & Looney, Looney Labs 1997), or may be designed to support players' understanding of the sequence of play, as in *San Juan* (Seyfarth, Alea 2004) where the individual cards indicate when their effects occur or *Cosmic Encounter* (Eberle et al. Fantasy Flight Games 2008) where the phases of each turn are indicated across the foot of the card with the relevant phase highlighted. Game boards often include some form of spatial instruction – a variable sequence of play (e.g. *Power Grid*) which can be rearranged by resequencing the player tokens; directions or lines of movement (*Pandemic*); even spaces for card or token placement (*Concordia*, *Ticket to Ride*). Through the game components, the designer represents and enables the actions that comprise the game.

Game pieces as tools for calculation and randomization

Cognitive off-loading occurs when we use physical actions to reduce the cognitive demand of a task or activity (Risko & Gilbert 2016). For example, when we use our fingers to count, or to mark a place in a document, we are off-loading the cognitive task of counting or placeholding to our body. The process of off-loading allows us to concentrate on something else without dividing our attention between two or more activities.

There is a significant body of work on cognitive offloading in work situations, which identifies a variety of ways in which it may be manifested (Hutchins 1995, Turner 2016, Wilson 2002). These include the preparation of checklists and guidelines, investing mental and emotional effort when it is available to reduce the load in future (Schmidt & Simone, 21), as well as manipulation of the orientation of objects. An important function that is frequently offloaded to game components is that of calculation. Even the simplest roll-and-move games demonstrate this, as players "count on" from their existing position. A *Snakes and Ladders* player has no need for mental arithmetic; they can simply move on five spaces as shown by the die, counting them out rather than adding five to (for example) 16 to make 21. This is echoed on the scoreboards of many games, and in players' behavior; in our experience, it is rare to see players choose to add small incremental scores together and more common to see them count out a number of spaces on the game board. Of course, some games, particularly those where – as in *Stone Age* (Hans im Glück 2008) – significant scoring occurs at the end, require the use of more complex mental arithmetic or, more frequently, a calculator to add larger numbers together. Nevertheless, during the play of a game it is more common to see mental arithmetic tasks offloaded to game components; the effect of this is that players' attention is focused on their own strategies and plans rather than distracted by mental arithmetic.

Where the game rules do not explicitly allow for this cognitive offloading, it is common to see players appropriating the pieces to use for these tasks. For example, in *Power Grid*, players build complex power connections between multiple cities at highly variable costs. Assessing the cost of a single build action can be complex, particularly when the player builds connections to multiple cities. There is frequently a choice of pathways, each of which has a different cost, and a player's turn can involve several calculations to assess the optimal placement. An April Fool's Day joke on BoardGameGeek (Krizan 2014) proposed selling sets of calculators in the players' colors for use in calculation of *Power Grid* costs, with a special Optimal Bid function to improve players' success in auctions, to reduce the effort of calculation. We have observed players routinely aligning their placed pieces differently from the other pieces on the board while they take their turn, realigning them when they have finished their turn (Figure 7). This alignment supports the player's memory and understanding of where they are placing, allows the taking back of planned actions, and allows their opponents to clearly see what actions they are taking.

[INSERT IMAGE 7 HERE]

Figure 7: *Power Grid* house alignment. The player with the lighter tokens is currently taking their turn and has placed their houses on one side in Lübeck, Kiel and Flensburg, to show that they have not yet been finalized/paid for.

In *Puerto Rico* (Seyfarth, Alea 2002), tokens worth 1 and 5 Victory Points are used for scoring during the game, with additional scoring occurring at the end of the game. Like counting on a move on the *Snakes and Ladders* board, the tokens obviate the need for mental arithmetic during the game as they simply form a pile in front of the player. The actual value of the tokens themselves is obscured; although opponents can see that a player has a pile of tokens in front

of them, those tokens' value could be anything from 1 to 5 times their number. Not only is the function of calculation offloaded to the tokens, their materiality allows for limited, obscured in-game information to be shown to other players. This, in turn, reduces the cognitive load on those players, who no longer need to remember how many tokens the other players have, although an experienced player will likely retain a sense of the value of the other players' victory point tokens. Some reject this concealing of "hidden but trackable" information as increasing the cognitive load by requiring them to recall this information instead of simply recognizing it. In a similar approach, tokens are used for overt randomization in games like *Deep Sea Adventure* (Sasaki & Sasaki, Oink Games 2014), where players receive "treasure" tokens of varying (hidden) score values. The tokens hide the player's exact score in a way that would not be possible using a traditional scoreboard, with the game's material properties affording the provision of this inexact information.

Another calculation function that is frequently provided by pieces is that of timing or sequencing a game. In *Agricola*, a new card is revealed at the start of each of the game's fourteen rounds. These cards provide players with new action possibilities in a semi-randomized sequence. The same four cards are always played during the first four rounds, for example, but their order varies from game to game. Additional action spaces are printed directly on the board. Just as importantly, however, the round cards count down the fourteen rounds of the game; when the last card is revealed, the game's last round has started. There is no need for the players to monitor how many rounds of the game remain; they need simply to glance at the board to see which round is currently being played. Figure 8 shows the game board at the start of the third round; three action cards have been revealed, while others (to the right of the picture) are still face down. Those rounds have not started, so the actions they confer are not yet available.

[INSERT IMAGE 8 HERE]

Figure 8: *Agricola* round cards and action spaces. Available resources (here: wood, clay, and sheep) will be taken directly from the action spaces and cards that supply them.

Similarly, in *Hanabi* (Bauza, Asmodée 2010), players are able to access a limited number of clue tokens before they must start discarding cards to earn new ones. The game's rules appropriate the lid of the game box as a clue token container, to ensure that all players can clearly see how many guesses (tokens) are available. Just as tracking a player's score is routinely off-loaded to a scoreboard or to Victory Point tokens, rules like those we have described in *Agricola* and *Hanabi* off-load the jobs of timing and counting to the games' components, leaving the players free to focus on less routine elements of the game as described by Schmidt and Simone (1996, 21).

Game components as a planning tool

Just as Victory Point tokens in *Puerto Rico* are used to obscure detailed information, game tokens can be used to provide a level of granularity in play. We see this in the way that players use tokens, particularly when making plans for their future actions (see Suchman 2007, 31). Thus, a *Monopoly* (Magie & Darrow, Parker Brothers 1933) player might physically set aside £50 in case of an accidental visit to Mayfair, or the owner of the premium property might save £200 to buy a house. In *Concordia*, we have observed players physically moving five coins to sit with the other resources necessary to buy a valuable cloth city and even rearranging the cards in their hand to represent their intended order of play. In *Agricola*, players create piles of wood and reeds which represent the rooms they intend to build in their house, each of which costs 5 wood and 2 reeds. In *Tigris and Euphrates* (Knizia, Hans im Glück 1997), these

planning activities occur behind a player screen; in other games, they may provide public information and therefore be less desirable, potentially revealing information to opponents. The granularity of the pieces – the ability to separate them into different piles and mentally denote that they have a particular role – supports the player's planning processes by affording this physical manipulation. Once separated, the pieces act as a reminder of the player's planned actions; players do not need to remember their plan, as it is captured by the material components of the game. Like scoring, counting and timing, the job of planning – or at least, of remembering and implementing a plan – can be offloaded to the game components.

Lundgren and Björk (2012) describe the delights of "pottering" in a digital game; 'the placid but yet focused activity of arranging and rearranging things, taking care of them, "sorting them out"' (Lundgren & Björk 2012, 113). Similarly, in observing players of boardgames, we find a range of actions including sorting, ordering and re-arranging pieces, which are undertaken to better understand the game rather than for any formal gameplay purpose (Rogerson, Gibbs, & Smith 2018). Although Lundgren and Björk present pottering in a digital game as a relaxed and unproductive form of pleasant interaction that is neither gaming or playing, we suggest that these similar activities – at least in boardgame play – can be a form of epistemic task that is used by players to make sense of a game. Similarly, housework tasks that articulate the play of a game (Xu et al. 2011, Rogerson, Gibbs, & Smith 2015) inform the player's understanding of it. Rearranging *Scrabble* tiles in an attempt to form words (Klemmer, Hartmann, & Takayama 2006), arranging cards in *Hanabi*, grouping resources in *Agricola* and sorting train cards in *Ticket to Ride* all represent a form of planning for the future and an attempt to understand the current state of the game. Players of *Concordia* order their resource tokens and cards to support their understanding of or plans for the game; in one session, we noted that each of the four players set up the same set of starting resources in a different way. These

activities help the player to answer the questions "What resources are available to me" and "What can I do with my resources?" – and, from there, to consider the question of "What other resources do I need?" These activities are not aimless pottering but instead are a form of thinking through doing – an interleaving of cognition and execution (Langley, Magnani, Schunn, & Thagard 2005) – whereby the pieces support the player in building representations not only of the current state of the game but of potential future states which they might be able to influence or act upon.

The digital conundrum

Although players frequently present boardgames as unashamedly non-digital and may even consider playing boardgames to be a form of technology non-use, it is clear that the pastime of boardgaming incorporates both digital and analogue elements (See, for example, Björk & Bergstrom, this volume). Players valorize the materiality of the game, yet they also devote significant time to playing games online – as well as to other activities in the "digital hinterland" including researching, discussing, collecting, cataloguing and tracking their activity (Rogerson, Gibbs, & Smith 2017). Although the choice of online play offers convenience, access to otherwise absent opponents, and a broad selection of games (Rogerson & Gibbs 2018), we have demonstrated that key activities which are afforded by the materiality of a game are not available to the digital player. These range from playful interaction with the pieces – stacking and aligning them, a form of "pottering" that we have observed over many games – to productive leisure crafting practices, and include many of the epistemic actions that players use in making sense of the game. Although digital games make it easier to obscure information and to automate complex arithmetic calculations, the granularity of tokens that allows players to plan their actions by manipulating, sorting and ordering game pieces is lost in the typical digital interface which aggregates like objects together, providing a single number

to represent a player's store of a given resource, money or even points and a single method of sorting cards, tokens or tiles.

Conclusion

In this chapter, we have discussed game components as attractive material pieces which support the game's theme and provide players with the opportunity to appropriate and customize the game, and as artefacts which afford different types of interactions and calculations, assisting the player to make sense of the game state. Using a range of games as examples, we have demonstrated some of the many ways in which the components and board of a game support players' understanding of the game and enact the game, sometimes even without the players' explicit awareness. The materiality of a game is a fundamental factor that contributes significantly to players' enjoyment as well as to the ways in which they make sense of gameplay and of the game itself.

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A Mixed Blessing? Exploring the Use of Computers to Augment and Mediate boardgames

Karl Bergström and Staffan Björk

Since their invention, computers have been used to support games and particularly boardgames (Björk, 2013). While computers have been used to establish video games as a category of their own, boardgames have also been taking advantage of computational power to create new gameplay experiences or simplify supporting activities necessary for gameplay, while still retaining their image as boardgames (see Bergström & Björk (2014) for a discussion regarding computer-augmented games in general). Although the line between boardgames and video games may seem sharp at first glance, it blurs somewhat as one realizes that it is the same gameplay concepts that drive the two, in many cases as mirror images. Further complicating the distinction is that the categories inform one another in a reciprocal exchange, with boardgames influencing video games and vice versa.

This chapter will explore the meeting of analog and digital games, and a number of computer augmented and/or mediated boardgames will be used to ground the exploration. Some of these are so-called hybrid boardgames, e.g. *Alchemists* (Kotry, 2014) and *XCOM: The Board Game* (Lang, 2015), in that they have been designed to be played in conjunction with smartphone or tablet computers. Others, including *Lords of Waterdeep* (Lee & Thompson, Wizards of the Coast 2012), *Agricola* (Rosenberg, Lookout Games 2007), *Neuroshima Hex!* (Oracz, Portal Games 2006), and *Settlers of Catan* (Teuber, KOSMOS 1995), will be included since they have been remediated as computerized versions from their original versions. A particular case study will be *Mansions of Madness* (Konieczka, Fantasy Flight Games 2011; Valens, Fantasy Flight Games 2016), which in its second edition has become a hybrid game and thereby overlaps the two categories. Together, these games will be used to exemplify the new possibilities computer

augmentation provides, and populate a potential gameplay design space spanned by these interaction design concepts.

The chapter will explore computer-augmented boardgames through five theoretical concepts from interaction design. The selected concepts were chosen because of their explicit focus on end users' interaction and their perception of interaction, and are candidates for being so called "strong concepts" within interaction design; constructs on an intermediate knowledge level between design instances and theories of design (Höök & Löwgren, 2012). The first two concepts are Ekbia and Nardi's (2014) concept of "Heteromation" and the related concept of Excise (Cooper et al., 2014). The three remaining concepts come from Janlert and Stolterman's (2016) exploration of concepts for discussing the level of interactivity in designs. It should be noted that the concepts were developed within an interaction design context and have been repurposed for use with games. Heteromation was first introduced to explore how designers create systems which put specific tasks in the hands of users due to their ability to handle those tasks better (or more cheaply!) than computers can. Similarly, Janlert and Stolterman's concepts were originally introduced to be able to measure interactivity in different ways for systems.

Heteromation (Ekbia & Nardi, 2014), focuses on humans as "indispensable mediators". The concept of Heteromation was introduced to serve as a contrast to automation; instead of removing people from processes, which automation strives for, Heteromation strives to make use of humans in the places where they are most valuable or can do things better or cheaper than machines and software. In the author's' own words, Heteromation "push[es] critical tasks to end users as indispensable mediators" and the authors "contrast heteromation, which creates technical systems that function through the actions of heterogeneous actors, with automation, a paradigm oriented to the actions of machines" (Ekbia & Nardi, 2014). While Ekbia and Nardi

use Heteromation to critically analyze how systems can be designed to benefit those maintaining or owning the systems (rather than the end users), this chapter explores how Heteromation can be used for the players' sake. That is, it argues that Heteromation does not have to have the political undercurrent that its originators so far have used. Using Heteromation from a player's perspective instead becomes a way to think about what tasks players should have to do or not have to do when playing a game. As artifacts that support autotelic activities, it is not objectively clear what this should be, since different players may have different opinions on activities in a game. As a specific example, handling large numbers of units in games such as *Hearts of Iron IV* (Lind & Andersson, 2016) or all the individual objects in *Dwarf Fortress* (Adams & Adams, Bay 12 Games 2006) may be seen as unnecessary distractions or enforced micromanagement for some players, while others may see these tasks as interesting challenges to overcome. Heteromation in this perspective offers a way of focusing gameplay on certain types of activities by automating others.

Directly related to Heteromation is the concept of Excise (Cooper et al., 2014). It focuses on tasks that "don't contribute directly to reaching the goal, but instead represent extra work that satisfies either the needs of our tools or those of outside agents as we try to achieve our objectives" (Cooper et al. 2014, 272). When it comes to games, Excise tasks may be tasks that relate simply to updating the game state rather than signifying important choices or attempts at skillful actions. Excise tasks can also be tasks that users need to do because others demand it but that the users themselves do not see as meaningful towards reaching their goals. While players may prefer to not have excise tasks, such as setting up the game, shuffling cards, etc., as part of their gameplay, these tasks are necessary for gameplay to be possible. Viewed in this context, Heteromation offers a solution to this by automating some Excise tasks, while leaving the tasks deemed meaningful to the players, such as making relevant game decisions, to those players.

The remaining concepts, Interactivity, Interactability, and Interactiveness, are part of Stolterman and Janlert's (2016) trinity of concepts to understand how one could measure the amount of interactivity a system provides. Stolterman and Janlert observe that interaction in its everyday usage signifies two different things: the general phenomena of interaction, and specific ongoing interaction. Wishing to make a clearer distinction between these, they propose that Interactivity is reserved for the ongoing interaction or "[t]he activity of interacting" (Janlert 2016, 35). They then proceed to suggest Interactability as the potential for interactivity, or "[t]he ability of an artifact or system to engage in interaction; that intrinsic quality of an artifact or system with allows interactions with a user" (Janlert 2016, 35). For example, a person playing with a ball is an example of Interactivity, while the fact that the ball can be played with denotes that it has Interactability. Applying these terms on games allows a granularity that can for example compare real-time computer games and boardgames and notice that even if they might have the same Interactability (measured in possible different actions available to a player) they are quite unlikely to have the same Interactivity (since players tend to perform actions much more often in real-time computer games).

The third term related directly to interactivity (in the layman's sense) that Stolterman and Janlert introduce is Interactiveness. This is the ability of a design to force or encourage users to interact with the system, or "[a]n artifact's or system's propensity to engage users in interactions" (ibid, 35). A real-time computer game can be seen as having Interactiveness in the sense that things will happen regardless if the player(s) do anything on their own or not, and unless they are active their position or tasks may be in jeopardy. boardgames typically do not have this Interactiveness but can encourage users to perform actions by having compelling challenges or tasks. This is in line with Stolterman and Janlert's claim that "[t]here may be quite different causes of higher interactiveness, such as a more attractive and inviting interface, a more conspicuous or demanding presence, and so on" (Stolterman & Janlert 2016, 29). Note

that the three concepts introduced above can be applied both to the game and to the digital application in general, which may contain additional interaction possibilities; such as splash screens to be navigated, etc. For the purpose of this chapter, the concepts will be applied to the game and not the application in general unless otherwise noted and any additional interaction may be considered Excise.

The concepts above have been identified for the design of interactive systems, and the following analysis will apply to this take an artifact-centric stance. This leads to some other aspects of playing boardgames, such as the user experience of manipulating tangible game elements or non-mediated player interaction, which fall outside the scope of the chapter, but these should also be considered for a more comprehensive exploration of augmented and remediated boardgames.

Case 1 - *Lords of Waterdeep*

The first case explores computerized remediations of boardgames to smartphones and tablets. Remediation is, according to Bolter and Grusin (1998) "the representation of one medium in another", and while they argue that this is one of the defining characteristics of digital media, they also point out that the activity of remediation has been present long before digital media. While the remediation of games can be studied from several perspectives, e.g. the thematization or not of *Chess* or how the various *Civilization* games have moved between non-computer-based and computer-based versions, we here focus on an original tangible board game and its remediation into a digital application contained on a smartphone or tablet. This allows the study of two instances of the same game using different realizations, thereby allowing a comparison of how the two mediums affect the interaction. That the games were designed for one medium

and then remediated help point out challenges that the medium may have, which would most likely have been avoided in a game designed originally for that medium.

The prime example in the first case, *Lords of Waterdeep* (Lee & Thompson, Wizards of the Coast 2012) is a board game set in the Forgotten Realms campaign setting for the *Dungeons and Dragons* roleplaying game (Wizards RPG Team, 2014). Players take the role of the secret lords of Waterdeep trying to outmaneuver the other players through acquiring adventurers, developing the city, enacting intrigues, and completing quests. Mechanically, the game uses worker placement to let players perform actions, and the collection of the right types and numbers of adventurer tokens to suit one's quests and intrigue cards are vital. This leads to players having to handle many different game elements; their own agent tokens, the adventure tokens, score markers, a first player marker, quest cards, intrigue cards, building tiles, building control markers, gold tokens, and victory point tokens. This creates a certain amount of Excise during the game, primarily between game rounds as the players need to reset the game board.

An app for the game exists for iOS which allows the game to be played on smartphones and tablets. This app faithfully recreates the interaction with the game board and game elements from the original, such as cards and worker tokens, despite being able to be played on a device with a very limited display surface. Given that *Lords of Waterdeep* has a 20" times 26" game board, and players additionally need a personal space for their cards and tokens, the interface designers likely had a substantial challenge when remediating the game. The main solution to fit *Lords of Waterdeep* onto a smartphone screen is the use of panning and zooming, but to avoid introducing Excise (i.e. scrolling around the board) based upon the computer interface, these are automated whenever possible. Other boardgames, e.g. *Neuroshima Hex!* and *Settlers of Catan*, that have been computer mediated have used the same solution, while *Agricola* uses tabs and expandable menus to avoid zooming. However, exploration of the game state by

players as part of their planning may require Excise through panning and zooming (or changing tabs in the case of *Agricola*).

The computer versions of all the games above except *Neuroshima Hex!* replace resources with resource meters (e.g. adventures, money, material, animals depending on the games) except when these resources are placed on game boards or the personal player mats in *Agricola*. This removes most of the interaction with these resources which is necessary for the original formats of the games, and in addition, all the remediated games mentioned above also automate the movement of resources and other game elements when players have no choice on how they should be moved. This reduces some of the Excise inherent in physical boardgames. Only when players have to make choices in the games do the apps require players to interact with the game elements, e.g. through dragging worker tokens in *Lords of Waterdeep* to various parts of the game board to indicate which action the player takes. This automation of game element manipulation can be seen as a case of Heteromation which benefits the end user (player) rather than those designing and providing the game.

As remediations that try to provide an experience similar to their parent boardgames, all the examples previously given provide the same Interactivity, Interactability, and Interactiveness as their original counterparts regarding gameplay actions. That is, they fundamentally work the same way as their physical counterparts regarding gameplay. However, looking at the applications as a whole they limit Interactivity and Interactability somewhat, since players cannot freely manipulate the game elements and thereby the game state. While non-consensual manipulation of the game state outside the boundaries of the rules might be considered cheating, consensual manipulation is something that players might wish to do for social reasons; e.g. letting a new player take back a move or wishing to show an example of a game state or series of actions. The possibility of online play in *Lords of Waterdeep* and the other

examples allow the games to have higher Interactivity, in that players do not need to be where the physical game board is to play. Further, the aforementioned games can have higher Interactiveness in that the games can tell players when it is their turn through the notification systems of smartphones. Also, Interactivity could potentially increase when *Lords of Waterdeep* and the other games are remediated as players have less Excise.

Case 2 - *Alchemists*

Our second case study examines boardgames that are not completely remediated, but instead in some way "augmented" by the use of computers; creating something that is impossible or significantly more problematic to do without a computer. Examples of this may be taking care of tedious excise involved in learning the game, tracking, presenting and/or keeping information secret, showing audiovisual content, etc. (See Bergström & Björk, 2014). Note that this is different from games that are merely computer "supported", where players can use digital tools to make gameplay simpler by, for example, providing suggested decks of cards to use in a card game.

Our prime case of an augmented board game is *Alchemists* by Matúš Kotry (Czech Games Edition 2014). In this game, players take the roles of researching alchemists that try to determine the properties of various alchemical reagents through diligent (or not so diligent) experimentation, and by doing so can publish research results and gain fame. By taking two reagent cards and "scanning" them through an application via a mobile phone or tablet camera, the player gets information on what, if anything, the mixing of these two reagents creates, thereby receiving clues towards the ultimate goal. The cards "scanned" are matched against a secret mapping between reagents and the mixture of reagents results in a specific potion, which is different every time the game runs. Practically, a player doing this puts the cards behind a small cardboard screen provided in the game box where no other player can see them, does the

scanning and shows the result to the other players. The design solution combining physical card and screen design with software allows the other players to know that two cards have been chosen by a player and what combined effect they have without knowing what the particular cards are. Thus, an additional level of hidden information is possible via the use of the application than would be feasible in a fully non-augmented version of the game. The application also assists a couple of other actions, such as selling potions for gold, debunking theories and final scoring. Using the application is however not strictly necessary, since the game provides an alternative; its place can be taken by an additional, "neutral" player that does not itself play the game, but instead does the work of the application by creating a secret physical mapping between reagents and effects that is consulted when reagents are mixed.

The main purpose of the computer augmentation is keeping secret information and dispensing it at the right time (the "gimmick" of 'scanning' cards actually contributes very little mechanically, as it is faster and more accurate just to select the reagents, something which the application also has support for in case of camera failure). While *Alchemists* can be played without the app if one can find another person to participate, other similar games such as *Leaders: The Combined Strategy Game* (Kern et al, 2013) and *XCOM: The Board Game* (Lang, Fantasy Flight Games 2015) cannot, at least not without extensive reverse engineering by players to figure out rules hidden in the code of the apps.

Considering Heteromation, there is either little or an excessive amount of it in *Alchemists*; while the computer takes care of tasks that would otherwise fall on a human, it can hardly be considered "work" in a Heteromation sense. What it does do, is free up the "work" from a player that would otherwise be left out of the play of the game altogether, work that would otherwise likely feel less meaningful than actually playing the game. While there are examples of games with similar "umpire" structures, e.g. *Kriegsspiel* (von Hilgers, 2000) or roleplaying

games such as *Dungeons and Dragons* (Wizards RPG Team, 2014), where players still find it meaningful to participate in the interaction of the game without playing in the same fashion as all other players, the role in *Alchemists* is very limited in comparison. For *Leaders: The Combined Strategy Game*, Heteromation is more succinct – the application actually takes care of tasks that most players likely would find boring or tedious Excise. Interestingly, dice rolling and production point tracking is still in the hands of the player; likely because the first is seen as an essential and tactile part of the game, and the second because it is hard to implement in the application without implementing the whole map, which would turn the game into something more resembling a computer game. For *XCOM: The Board Game*, the computer is mainly used to keep track of the game flow, but since the game occurs partly in real time, it also helps keep track of time for the different phases. Here, it is mainly the timing of the various phases and the initial learning of the game that can be considered "work", few players enjoy reading lengthy manuals and would rather start playing right away (although most likely learn from another player). Keeping time during play also requires significant attention resources. All three examples have in common that the role of the computer is rather limited, but the main contribution in each game is different; in *Alchemists* it is hidden information, in *Leaders: The Combined Strategy Game* it is bookkeeping and gameflow, and in *XCOM*: *The Board Game* it is gameflow and learning the game.

When it comes to the Interactivity, Interactiveness and Interactability, it is clear that the augmentation does increase these parameters. In *Alchemists*, Interactivity and Interactability increases, given the fact that without augmentation, one of the players would have to sit out most of the interaction altogether (while this doesn't increase Interactability for each player, as in giving more options for interaction, it does increase overall Interactability). In *Leaders: The Combined Strategy Game* and especially *XCOM: The Board Game*, Interactiveness increases

as the application constantly prompts the players towards action, and with it, Interactivity. Where other games might have players with limited interest losing focus on the game with limited effects, this is unlikely to happen with constant prompts to action.

Case 3 - *Mansions of Madness*

Our third case has been selected since it provides us with the opportunity to compare two editions of the same game; one without computer augmentation and one later with digital support as an added (necessary) feature.

The first edition of *Mansions of Madness* was released in 2011 (Konieczka, Fantasy Flight Games 2011). It pits one to four players that play "investigators" against one other player, that plays "the keeper", as they explore the occult mysteries of a house or other environs. The house and its surroundings are created using tiles, and five different stories (scenarios) allow for five different houses to be explored, each requiring different solutions. For each game, the keeper has several choices related to what hidden background exists for the story, and these choices affect what game elements (e.g. exploration, obstacle, and lock cards) the keeper can then use to set up the game. Investigators have a limited amount of turns to figure out what their goal objective is as well as completing it. During the game, the keeper handles enemies and hazards, as well as keeping track of a large number of cards, detailing the progress of the story. There cards govern actions, the passage of time, the appearance of antagonists, items and spells to be found, locks to be forced, and much more. The keeper also has access to special actions with which to thwart the investigator players.

A second edition of *Mansions of Madness* (Valens, Fantasy Flight Games 2016) was released in 2016 and requires the use of a smartphone, tablet, or PC to run the game app. The main design changes when it comes to gameplay in the new edition is the removal of the keeper role

(which also makes it possible to play the second edition solitaire), and changing the action economy for the investigators slightly; in the first edition, investigators could make one move and take one action, while in the second edition they can take two actions, any of which may be move actions. Another change is what happens if investigators die; in the first edition a new investigator is introduced as long as the final objective hasn't been revealed, while in the second edition the remaining players only have one more turn to complete the game or they all lose. The app only enforces some of the rules. The phase order cannot be changed and it isn't possible to go back to previous phases. However, the app does not check how many actions each players has taken, and players can enter any number of successes to tests or damage to monsters, so players can effectively break the rules if that is what they want.

As a consequence of the automation of the keeper role many physical components are completely handled within the app; namely objective, keeper action, exploration, obstacle, and lock cards. This unavoidably decreases Interactability (and thereby Interactivity) with those elements. Explore and search tokens are however introduced to let players see on the physical game board what actions they can perform. While these can be interacted with (thereby increasing Interactability and Interactiveness) one can argue if this interaction is meaningful or not (especially since they are simply indicators for some of the actions that are possible on the app). In what sense the mediated cards exist or not in the second edition is irrelevant from the players' perspective; the app simply tells the players when things happen and what they should do. The app also mediates the puzzles completely, with the player interacting with them just like a puzzle in a computer game. Although not related to the interaction focus of this chapter, the app also provides voice acting (before and after actual gameplay) as well as sound effects and mood setting music. The app also instructs players how to setup the tiles and what is on them (e.g. NPCs, enemies, search tokens, and exploration tokens) as the game progresses. It keeps track of NPCs and enemies although in different ways; the location of NPCs is

determined by the app and need to be replicated through tokens on the physical board while the location of enemies is only kept on the physical board. Attacking monsters is done through choosing them in the "monster drawer" (a popup tab in the user interface) and selecting type of attack; the apps randomizes what is needed to succeed while players check if they actually succeed by rolling dice. The app never requires players to focus on it to notice or react to things developing over time; however, the app can be said to have a certain level of Interactiveness in that a player needs to tell the app that a phase is finished for the app to provide players with information regarding the next phase of the game.

Part of the Excise any game has is in the setup and takedown that takes place before and after the actual game. The first edition of *Mansions of Madness* has quite an excessive setup compared to many other boardgames, in that the keeper needs to make several choices and set up many small decks of cards on room tiles. This Excise is completely absent in the second edition. Further, mistakes by the keeper could make the game unwinnable for the investigators in the first edition and this risk is completely removed through the automation the game app provides. The introduction of an app in the second edition does remove some Excise (handling various types of cards) but adds other Excise since players need to indicate all actions in the user interface except for the actions of moving and trading items. The game could have removed additional Excise through not having exploration and search tokens that need to be placed and removed by players since the app provides the same information as they do; they can in fact be seen as an optional visual aid (although this is not the way they are presented in the game rules). As with other computer-augmented games discussed in this chapter, the use of dice is not automated. The use of cards is however partly automated in the second edition of *Mansions of Madness*, those used by the keeper have been removed but physical or mental damage as well as the after effects of spells casts by investigators as well as items for the investigators are still handled through the use of physical cards.

The question whether the second edition of *Mansions of Madness* has Heteromation compared to the first edition is dependent on what stance one takes. On one hand, the role of keeper is completely automated rather than "heteromated". On the other hand, this allows the person that would have needed to be the keeper to be a player instead and if the player choices are seen as more interesting than the keeper choices one can argue for Heteromation. While the app does add some Excise in the second edition much of this Excise can be divided between all players as who does what is irrelevant, a player doing a turn may for example move the physical miniature representing his or her character while another interacts with the app or vice versa. This is different from the first edition where actions are more often part of an interaction between one player and the keeper. This means that while the Excise has been reduced significantly in the second edition it is also easier to spread out between players and thereby reduce the time it takes from the overall time to play the game. While the latter is not a direct effect of automation but rather of changes in the game design as a whole, it can allow interesting choices for players more often. This is not Heteromation but has a similar effect to it, namely to put people in the position to make indispensable choices.

The second edition of the game has been more favorably rated by players on the board game website *BoardGameGeek*. As the time of writing, the first edition had a rating of 7.39 while the second edition had a rating of 8.29 (on a scale from 1 to 10) with more than 7500 votes for each edition. While the number of players voting for complexity was significantly lower (~700 and ~150) the second edition of *Mansions of Madness* is seen as less complex, 2.62 against 3.24 (on a scale from 1 to 5). Given that the rules are not simpler in the second edition, the voters have indicated the complexity they need to handle rather than the complexity of the game system as a whole. While the reasons for the different scores cannot be determined reliably without a detailed study of the voting players, it does point to a hypothesis that the

second edition has managed to increase the possibility for players to make interesting choices when they play. This may partly be due to the Heteromation but also partly due to letting all players handle the Excise, mirroring the co-operative gameplay with the possibility of co-operative Excise handling. Further, while the Interactability with tangible game elements has been reduced (since some game elements have been removed) in the second edition, it does not increase Interactiveness by forcing players to react to real-time events. These two things together may actually focus players on the Interactability between players in negotiating both gameplay actions and Excise actions. These assumptions are in line with explicit design goals stated by the designers: "[...] by adding a digital component to take the place of first edition's "keeper", we could make the game a truly cooperative experience that was more fitting for the setting and style of game we hoped to create. The digital component would also allow us to streamline a number of other aspects of the game to make it both easier to learn and easier to play." (Fantasy Flight, 2017a)

Discussion

From the examples above, it is clear that board game augmentation still is in its infancy, since there are still few computer-augmented boardgames available. This limited scope is also fully understandable when one takes into account the increased production costs involved, to this date yielding limited returns (augmented boardgames cost about as much as other boardgames for customers). It should however be noted that the exploration of computer support for boardgames that have been explored here does not include all types of support; as an example games such as *Magic: the Gathering* (Garfield, Wizards of the Coast 1993), *Dominion* (Vaccarino, Rio Grande Games 2008), and *Thunderstone* (Elliott, Alderac Entertainment Group 2009) have apps which help creating card decks, and the program *Tabletop Simulator* (Henry, 2015) allows players to simulate all physical elements of a board game.

The examples discussed are however important steps in exploring the design space and novel interactions that can occur in the new format. This is echoed by the following comment from Nikki Valens, one of the designers of two of the examples discussed above: "I leaned on my experience creating video games to create [...] the XCOM: The Board Game [and with] that experience, I moved on to design Mansions of Madness Second Edition, making full use of a companion app to bring new design elements to the game that couldn't be accomplished without it." (Litorco, 2017) Similarly, another designer of *Mansions of Madness 2ed* stated "I have super enjoyed exploring the huge design space the app gives us in using the components, [especially when we] found a new way to use map tiles, moving them around the board inside the app. That sort of mechanic feels so intuitive from a thematic standpoint, but can be a nightmare to implement physically." (Valens, Fantasy Flight Games, 2017b).

This means that it is difficult to judge if the observations made here point to design features that will become common, but it does point towards future possibilities. While computers offer powerful capabilities when it comes to computations and keeping track of information, we have only we seen examples of the latter above. This could be because the form is still young, but it could also be that calculations are something that should be left to the player, because understanding these are part of what makes a board game what it is (compared to for example videogames, where the game mechanics are often wholly opaque). Keeping information hidden from the players, on the other hand, likely has great potential as this is often somewhat of a hassle in contemporary boardgames (see e.g. the card-mixing and other steps necessary to hide the traitors in *Battlestar Galactica* (Konieczka, Fantasy Flight Games 2008) and *The Resistance* (Eskridge, Indie Boards & Cards 2009). The same goes for timing stages, and an early form of "computer" augmentation can be seen in *Space Alert* (Chvátil, Czech Games Edition 2008) besides what *XCOM: The Board Game* showed.

One example of what has not been done in the examples above, is how one can handle the so-called "action windows". These are the periods during a game when a player can interrupt the action of another player with another action. Compare for example the design of computer card game *Hearthstone* (Sakamoto & Donais, Blizzard Entertainment 2014) which has no action windows at all for the non-active player, and that of *Magic: the Gathering*, which has action windows for the non-active players not only every phase, but with every card that the active player plays. Face-to-face humans quickly get a feel for the opening and closing of action windows, even allowing minor backtracking of the game state to accommodate, but the computer requires either timers, which takes time and quickly becomes unfeasible, or constant prompting, which becomes a nuisance. Interestingly, this lowers Interactability for computer boardgames, and provides a niche for augmented ones. This means that games with significant action windows will likely place the management of these in player hands even in the future. Further compounding this is that that current designs assume the use of one device rather than many - each time a new player takes an action, or declines one, the device must be passed to that player.

Looking at the cases above, they seem to indicate a shift when it comes to the meeting between digital technology and boardgames. More titles are being remediated into the digital domain, and although still relatively few in number, both app-supported and app-augmented games are showing up with some regularity. Arguably, the third case - *Mansions of Madness 2nd edition* - is the current strongest example of digital technology being used to take care of game tasks that are complicated or tedious for the players. It also gives us some insight into what could be suitable to *not* automate, even if it's certainly possible.

In its original sense, Heteromation is more concerned with the cost/benefits of automation and labor (and perhaps most importantly - *who* benefits), and although this chapter uses the term in

a different sense, we do anticipate what could develop into Heteromation in the original sense in the future - namely in the creation of content. As digital tools make it easier to create "fan made" content, such as scenarios, companies will profit from these as they help drive sales towards the original game and/or platform. There currently exists no editor for *Mansions of Madness*, but this could easily be made available in the future.

This chapter has made use of Heteromation, Excise, Interactivity, Interactability, and Interactiveness in different contexts than they originally were used for. While this shows that they have a broader applicability it also shows how the concepts may need to be viewed differently in different contexts, or point to aspects that may be relevant to incorporate into an expanded meaning of the concepts. While the cases have shown that Heteromation can be used to discuss how a system can let players focus upon actions and choices deemed more interesting than others, the cases have also shown that it may not be enough just to look at what actions are available. Instead, to understand the effect of a redesign using Heteromation may also require discussing changes in who can perform what actions and if players can negotiate this; the cooperative aspect of a game such as *Mansions of Madness* may be strengthen by letting players have the responsibility of together handling Excise. For the terms of Interactivity, Interactability, and Interactiveness, these have typically discussed in relation to actions directed towards the system but the cases explored here point towards that it may be at least as important to discuss this in relation to other players as well.

Conclusion

This chapter set out to explore the meeting point between digital technology and modern boardgames, by looking at a number of case examples; covering both remediation (the wholesale transfer of a game from a non-computer-based to a computer-based medium) and augmentation (games that utilize computational power to enhance gameplay in some fashion).

In the analysis, we have used a number of concepts from interaction design: Heteromation, Excise, Interactivity, Interactability, and Interactiveness. The use of these concepts in new contexts have required new stances towards these concepts, for example requiring considerations of what is work and what is play when applying Heteromation on gameplay. Further, the cases have shown that just looking at available actions is limiting; understanding the effects of Heteromation may require exploring who can perform what actions and to what degree this is negotiable, while Interactivity, Interactability, and Interactiveness may need to include actions between players as well as those between a player and a system.

Looking at the cases - *Lords of Waterdeep* for remediation, *Alchemists* for augmentation, and *Mansions of Madness* as a special case, as well as some supporting examples - we find that although the use of digital technology still is limited, it is used in several cases to limit Excise, typically to manage information and keep track of the game flow. Heteromation is most evident in the case of reducing Excise, where the games take care of such things as setting up (which usually takes significant time for many boardgames), and moving pieces; but it is also interesting to note what tasks are left to the players, although easily automated, such as rolling dice in *Leaders: The Combined Strategy Game*. When it comes to Interactivity, Interactability, and Interactiveness it is less clear; in some cases Interactiveness increases compared to the original version, as the digital application prompts the players for action and keeps their focus on the game, and in the case of *Alchemists* one can see an increase in Interactivity as one player otherwise would be required to perform only Excise tasks. The digital applications also allow the games to support a higher level of Interactability for a given level of Excise, where the same amount of options in a physical game would lead to significant more undesired work for the players (*Mansions of Madness* and *Leaders: The Combined Strategy Game* are examples of this). The cases do not, however, present significant novel avenues of interaction to say that Interactability is significantly affected.

While the digital augmentation of board game experiences is still new, the cases presented hint at possibilities to harness the interactive potential of digital applications to both get rid of unwanted work, i.e. Excise, and provide unique possibilities such as managing information without the use of an "umpire" player. More player-focused research would be necessary to determine the effects on player experience, and to unveil more precisely what gameplay activities are preferable to give to players, and which to hand over to a computer.

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Materially Mediated: Boardgames as Interactive Media and Mediated Communication

Joe A. Wasserman

Mediated communication is typically conceptualized as technologically- or computer-mediated communication. For example, *The Encyclopedia of Communication Theory* lists an entry only for "*computer*-mediated communication" (Holmes 2009), while *The International Encyclopedia of Communication* entry for "mediated social interaction" is explicitly about *computer*-mediated communication (Lee 2008). Boardgames, however, typically do not involve the use of electronic devices. Nevertheless, in this chapter, I argue that playing boardgames entails mediated communication among players that is constituted by manipulating a boardgame's tangible components. In other words, while playing a boardgame, the components of the game *mediate* (some of) the players' communication with each other. First, however, it is necessary to characterize boardgames as interactive media to establish a conceptualization of boardgames that underlies these arguments. These particular understandings of boardgames as interactive media suggest a range of entities that may be productive grounds for exploration in research and analysis. Furthermore, conceptualizing boardgames as a form of mediated communication presents new opportunities and considerations for communication scholars, boardgame scholars, and game designers.

Boardgames as Interactive Media

Before arguing that boardgame play is a form of mediated communication among players, it is necessary to articulate the characteristics and components of boardgames as *interactive media*. Conceptualizations of media are diverse, contested, and vary by discipline (Jensen 2008). These conceptualizations tend to have three commonalities, however: media are (a) some thing—e.g., a tool, substance, device, or channel—that (b) carries, stores, transmits, communicates, or displays (c) some sort of meaning or information. Boardgames as physical

and textual artifacts seem to fit a broad conceptualization of media. Boardgames are (a) artifacts that when played (b) communicate (c) meaning to players. In a source-message-channel-receiver model (Shannon and Weaver 1949), the source of this meaning (message) can be a game's designers and artists, analogously to the author of a novel or creators of other media. The source can also be other players, a point to which I return below.

Rather than attempting to identify a more specific list of essential features shared by all media, and contrasting boardgames to this feature set (see Booth in this volume), I follow Elleström's (2010) suggestion to instead focus on the variability of media in terms of several categories of characteristics. This approach parallels the notion of family resemblance (Wittgenstein 1958): although media (and games in particular) do not all share the same essential characteristics, they *do* share a series of overlapping characteristics. These characteristics can be understood in terms of media *modalities*.

Media Modalities of Boardgames

Although characterizing boardgames as media may seem overly basic, it is necessary in order to (a) identify the locus of interactivity in boardgames and (b) understand what boardgames afford as a medium for communication. Elleström's (2010) explication of media modalities provides a useful framework through which media, including boardgames, can be characterized in terms of four modalities: the material, sensorial, spatiotemporal, and semiotic. Below, boardgames are explicated in terms of these modalities, supplemented by relevant empirical and interpretative work. These media modalities, in turn, will form the foundation for characterizing boardgames as *interactive* media and mediated *communication*.

Material modalities

A medium's material modality is the nature of its physical existence in the world, its "latent corporeal interface" (Elleström 2010, 17). As artifacts, boardgames have multiple material

modalities, including printed paper and cardboard, as well as shaped pieces of various kinds, e.g. wooden cubes, plastic miniatures, carved pawns. In many boardgames, communication among players is central or even necessary to the game. For example, in the cooperative deduction game *Hanabi* (Bauza, Les XII Singes 2010), players verbally provide each other information about their hidden hands of cards. As such, sound waves generated by other players, or even the corporeal bodies of other players expressing non-verbal communication, can also be included in the material modalities of boardgames. *The Mind* (Warsch, Nürnberger-Spielkarten-Verlag 2018) takes this element even further by making nonverbal communication the core game mechanic.

Boardgame materiality shapes players' experiences and practices. The tangible components of boardgames that are manually manipulated during gameplay are phenomenologically salient to both novice (Wasserman & Banks 2017) and expert boardgamers (Rogerson, Gibbs, & Smith 2016). Not only do players describe games in terms of their physical components (Wasserman & Banks 2017), but hobby boardgamers, those boardgamers whose enthusiasms "manifest…through active participation within the hobbyist culture, the acquisition and accumulation of games, and a degree of evangelism for the hobby" (Woods 2012, 120), may expend considerable time, effort, and money on upgrading or preserving these components (Rogerson, Gibbs, and Smith 2016). Entire fan communities (Rehwald 2017) and secondary industries ("Top Shelf Gamer" 2017) devoted to boardgames' tangible components have arisen. (See also Rogerson, Gibbs & Smith in this volume).

The tangibility of boardgames' material modality may have psychological consequences for players. For example, in an experiment in which participants arranged objects that were individually associated with unique news stories, manipulating tangible cubes led to greater recall of news story information than manipulating digital squares through a computer's

graphical user interface (Patten & Ishii 2000). This finding suggests the possibility that the mere tangibility of game components is relevant to the psychological experience of gameplay. In another experiment, individuals who played a tangible version of a game about disease and vaccination, but not a nearly identical digital version, performed significantly better on a post-gameplay systems thinking test (Kaufman & Flanagan 2016b). Moreover, players in the tangible condition performed better, spent more time on each turn, and communicated more about strategy with their teammates than in the digital condition (Kaufman & Flanagan 2016b). A potential explanation for this finding is that tangible material modalities trigger more holistic, abstract cognitive processing than digital material modalities (Kaufman & Flanagan 2016a). Given these findings, more research is needed on the role of tangibility in boardgame play.

Sensorial modalities

A medium's sensorial modalities involve the sensation of receiving nervous stimulation from a medium's "sense-data," or its "realized material interface" (Elleström 2010, 18). More simply, they are the mode(s) by which media are perceived, i.e. the senses of sight, hearing, touch, taste, and smell. Whereas a medium's material modalities exist independent of an observer, its sensorial modalities fundamentally involve an observer's experience of the medium. The tangible components of boardgames are perceived primarily visually and haptically, while verbal communication of other players is perceived aurally. In other words, boardgames are seen and touched, while verbal communication among players is heard.

Boardgames' sensorial modalities may have unexpected phenomenological consequences for players. For example, it has been argued that the heft and feel of a fistful of dice and their audible percussion when rolled on the table are contributors to tabletop gamers' experiences and enjoyment of play (Carter, Harrop, & Gibbs 2014). Thus, rolling two dice per turn in *The Castles of Burgundy* (Feld, Alea 2011) may be a substantially different phenomenological

experience than rolling handfuls of dice in *Quarriors* (Elliott & Lang, WizKids 2011). Recent research and more diverse perspectives further complicate the sensorial modalities of boardgames. For example, research that has found that individuals sometimes include their subjectively experienced feelings—including confusion, enjoyment, and fun—as central to their perceptions of boardgames (Wasserman & Banks 2017). It may, therefore, be important to include *interoception* as a sensorial modality of boardgames under certain circumstances. A frustrated player, for example, may disregard other goals to end the game as rapidly as possible, thus altering the gameplay situation for all players. Individuals with different abilities throw into relief the variety of boardgames' sensorial modalities. Although outside of the scope of this chapter, perspectives from individuals with disabilities, disability studies, and accessibility studies would complicate and enrich understandings of boardgame modalities. Boardgames are played by, for example, non-sighted individuals, who may substitute haptics and aural communication for what might otherwise be perceived visually (Reed 2013), individuals with limited hearing who may attend more to visuals and other players' nonverbals, and individuals with limited fine motor control who may not touch or manipulate components themselves. These variations on a boardgame's sensorial modalities that depend on a player's differing abilities have been considered in the development of the following arguments.

Spatiotemporal modalities

A medium's spatiotemporal modality is the "structuring of the sensorial perception of sense-data of the material interface into experiences and conceptions of space and time" (Elleström 2010, 19) that is comprised of its width, height, depth, and time. As such, spatiotemporal modalities involve experiential sensorial modalities and material modalities over time and in space. Temporality can be static (essentially unchanging or lacking the element of time), fixed sequential (changing over time but in the same sequence), or non-fixed sequential (changing over time and in a variable sequence). Boardgames can simultaneously incorporate multiple

spatial and temporal modalities. Printed components, for example, have width, height, and minimal depth. In combination with their material qualities, the spatial qualities of tangible components provide various affordances for players from stacking, rotating, and flipping to shuffling and rolling. The planar, uniform, ordinal, spatial, and textural characteristics of playing cards afford operations such as hiding information, shuffling decks, forming sets, and fanning hands (Altice 2014). Components such as cubes, pawns, and figurines have more depth than cards and provide different, and typically more limited, affordances related to positioning and stacking, or sometimes flicking and caroming. In *Flick 'em Up!* (Beaujannot & Monpertuis, Pretzel Games 2015) and *Catacombs* (Amos, Elzra Corp. 2010), for example, players flick wooden and cardboard pieces with their fingers.

In addition to multiple spatial modalities, boardgames also combine multiple temporal modalities. Textual game rules have a fixed sequential structure. Viewed as artifacts, other components such as printed cards or figurines are static. Boardgames as actually played, however, combine fixed sequential and non-fixed sequential temporalities. Gameplay is typically chunked into cyclical rounds with fixed sequences, during which the same types of activity occur repeatedly. These can be very short as in time-boxed games such as *Escape: The Curse of the Temple* (Østby, Queen Games 2012), or extremely long as is often the case in *Diplomacy* (Calhamer, Waddington's Games, Inc. 1959) games that span days or weeks between turns.

In contrast, the particular actions and events that occur during play are not fixed. Instead, they are subject to either the decisions of players or randomizing elements. As such, the player- and/or randomization-driven sequence of events in boardgames produces narratives that are *emergent* in that events are not predetermined. Rather, emergent narratives are driven by the idiosyncratic series of events that occur during gameplay due to the interactions of players and

game mechanics (Jenkins 2004). Some games, such as *The Lord of the Rings: The Card Game* (French, Fantasy Flight Games 2011), combine emergent narratives with more linear stories by presenting players with pre-determined sequences of events and challenges.

Semiotic modalities

A medium's semiotic modalities are the types of meaning underlying its interpretation. Elleström (2010) draws on Charles Sanders Peirce's trichotomy of sign-relations of icon, index, and symbol (Peirce 1998). Interpretations of icons are rooted in similarities between representations and their objects. Interpretations of indexes are based on spatiotemporal contiguity, including causality, between representations and their objects. Finally, interpretations of symbols rely on conventionalized meanings of signs. Semiotic modalities tie together material, sensorial, and spatiotemporal modalities, and are foundational to the conceptualizations of boardgames as *interactive* media and mediated *communication* below. As such, this section tacks between all four media modalities.

Interpreting boardgames involves all three semiotic modalities: iconicity (similarity), indexicality (spatiotemporal contiguity or causality), and symbolicity (conventional meaning). The components of many boardgames have iconic representative qualities. For example, cards can graphically depict images of characters or other beings in the world, boards can depict maps of real or fictional places, and miniatures can resemble anything from animals and warriors to natural resources and buildings.

Textual elements of games rely on the conventional, symbolic meanings of words—both normal language and conventional meanings particular to the game. Many games use abstract symbols to represent important game variables, which have conventional meanings only in the context of a game as defined in its rules. By translating game conventions to pictorial symbols, complex meanings can be conveyed in short form, and some of the difficulties in faithfully

translating game text between languages can be alleviated (Evans 2013). For example, *Terra Mystica*'s (Drögemüller, & Ostertag, Feuerland Spiele 2012) components contain no non-numeric text, instead representing information about all actions, buildings, costs, and rewards with pictorial symbols. Boardgame rules provide structure by delimiting rounds and phases, setting boundaries on the possibilities for and limitations of players' actions, and providing algorithms for resolving the consequences of the events that occur over the course of the game (Evans 2013). Rules delimit the roles of the tangible (and potentially iconic and/or symbolic) components of boardgames. As such, rules are necessary, for example, for specific cards to represent victory points in *Dominion* (Vaccarino, Rio Grande Games 2008). Additionally, rule-defined algorithms for resolving events instantiate causal relationships specific to the context of playing a particular boardgame. These causal relationships, in turn, are part of a boardgame's indexicality.

During play, indexicality is key to interpreting boardgames. In many boardgames, the spatial positions of pieces are of great importance—in some games, such as *Chess* or *Yinsh* (Burm, Don & Co. 2003), they are of primary importance. These spatial configurations are cognitively consequential. For example, linear configurations of spaces in simple roll-and-move boardgames support the development of numeracy and arithmetic skills among preschoolers more than circular configurations (Siegler & Ramani 2009). While this is a simple example, it is likely that spatial configuration contributes more generally to interpretations of boardgames. Moreover, players' interpretations of spatial configurations are likely to change as their understanding of a boardgame changes. Expert *Othello* (Mollett & Waterman, [game in public domain] 1883) players, for example, have been found to recall meaningful (but not random) configurations and to demonstrate different strategies for chunking configurations than novices (Wolff, Mitchell, & Frey 1984).

The interpretation of spatial configurations is supplemented by the symbolic, conventional meanings of the configured components and the rule-defined consequences of thereof. For example, in *Pandemic* (Leacock, Z-Man Games 2008), it is only because of the rules that three cubes of the same color clustered around a city on the map means that placing a fourth cube there triggers an Outbreak, involving placing cubes on neighboring cities. Temporal sequences of events and their consequences are centrally relevant to understanding boardgames. These events can be player-decided actions or randomized based on dice, cards, spinners, or other randomizers. Events cause consequences deterministically or stochastically as determined by the rules, or more precisely by players' interpretation and implementation of rules (Berland, Lee, & DuMont 2010).

Sequenced events can impart meaning to play of boardgames in multiple ways, for example, as emergent narratives of player-influenced events or as the lead-up to a rule-based determination of winners and losers. These sequences can be interpreted as processes by which some elements of boardgames influence others, although the turn-based nature of most boardgames means that these processes are comprised of discrete steps. As play advances, these processes temporally unfold. Players manually manipulate tangible game components, configuring and reconfiguring spatiotemporal indexical relations of iconic and symbolic game components. It has been argued elsewhere that as these processes are repeated, conceptual meanings are *laminated* onto a boardgame's tangible components (Wasserman & Banks 2017). Repeated enactments of spatiotemporal associations and causal relations contribute to players' interpretations of these objects in terms of both their role within the conventions of the boardgame (ludic meaning) and to the worlds, characters and processes that the game may be interpreted to represent (narrative meaning). In other words, the actions players perform with game components imbue them with conventional, symbolic meaning. This conceptualization attributes both ludic and narrative interpretations of boardgames to the same phenomena and

semiotic processes. This process is perhaps most transparent in the case of cards that contain text describing their effects (Evans 2013), as in *Dominion*, *Magic: The Gathering* (Garfield, Wizards of the Coast 1993), or *Caylus: Magna Carta* (Attia, HUCH! 2007). In these games, playing cards performatively instantiates the changes to the game that they describe through a combination of printed text and symbols. By repeatedly playing a card, its associated ludic and narrative consequences are laminated to interpretations of the tangible card itself. Although more research is necessary, evidence for lamination comes from the co-occurrence of tangible components, conceptual meanings, and player actions in novice's descriptions of *Dominion* (Wasserman and Banks 2017).

Throughout the above discussion of boardgames' media modalities, a range of entities have been described that vary not only in terms of Elleström's (2010) media modalities (material, sensorial, spatiotemporal, semiotic), but also in terms of the degree to which they are social, cognitive, affective, ludic, narrative, and human. Because of this variability, this set of entities is appropriately described as 'heterogeneous.' Given the inseparable interconnections of these heterogeneous entities during boardgame gameplay, boardgames—like digital games—can also appropriately be described as ontologically hybrid (Leino 2012). In other words, these diverse entities are intertwined so intimately that they cannot be fully separated. This intertwining of diverse entities suggests that altering one type of entity may have cascading consequences for others (see Hunicke, Leblanc, & Zubek 2004).

Boardgame Interactivity

As previously mentioned, boardgames are media that feature certain modalities. These modalities characterize the media environment that players interactively modify while playing a boardgame. The nature of this interactivity in boardgames has already been hinted at: players have a central role in influencing the events that occur over the course of a game. In this regard,

Steuer's (1992, 84) definition of interactivity as "the extent to which users can participate in modifying the form and content of a mediated environment in real time", although originally developed for digital media, is instructive. In most boardgames, players have a degree of control over their actions within the game, and these actions modify the state of the game. As such, players modify the 'form and content' of boardgames by influencing the occurrence of events and processes over the course of a game. Below, boardgames are characterized as interactive in terms of the three media determinants of interactivity identified by Steuer (1992, 84): speed, range, and mapping.

Speed is the immediateness of the effects of individuals' input on media content. In terms of real-time, boardgames can be relatively slow. When viewed in terms of their typical turn-based temporal structure, however, they are quite fast. It can potentially take players multiple minutes to resolve the consequences of a single player action. However, boardgames typically chunk real time into discrete, meaningful blocks of arbitrary units such as turns, rounds, and actions. Typically, the immediate consequences of player-triggered game events are fully resolved before any other events can occur. In this way, when time in boardgames is viewed in terms of turn-based blocks or chunks, boardgames, even those which take a resolution phase approach such as the lumbering *Diplomacy*, are relatively fast.

Range is the breadth of options available to individuals for influencing media content. In terms of range, boardgames tend to be fairly restrictive, although their emergent properties can broaden their range. The absolute number of options available at any given moment is often relatively small, and these options are typically discrete, e.g. play one of several cards, take one of several actions, move one of several pieces, place a piece in one of several spaces. These options are delimited by rules and the emergent situations that arise during gameplay, and often written on reference cards for players when there are more than three of them. For example, in

combinatorial boardgames like *Go*, *Checkers,* or *Chess*, the number of potential moves in a given turn is fairly small, limited by the spaces on the board and/or the pieces available. When player actions are considered cumulatively over time in terms of their non-fixed sequential structure, however, the number of possibilities can be quite large (Tromp & Farnebäck 2006).

Mapping is the naturalness and predictableness of the influence of individuals' input on media content. Little about player actions in boardgames is 'natural.' Rarely do players' actions resemble the events they represent, if they represent anything at all. The role of naturalness as a feature of interactivity, however, has been critiqued in studies of digital games that have found that push-button controllers are perceived as more natural than so-called "naturally-mapped" motion controllers (e.g., Rogers, Bowman, & Oliver 2015). The naturalness of games' inputs, then, may be in the eye of the player. In contrast, the immediate consequences of player actions are predictable because boardgames have explicit rules (Autenrieth 2015). Because boardgames require players to resolve the effects of all game events, it is necessary to supply players with the rules and algorithms to do so (Nicholson & Begy 2014). Even when the resolution of events is stochastic, incorporating randomizers like dice and decks of cards, the process for resolving events—i.e. rolling dice or drawing cards—is relatively transparent to players because they must enact it. This transparency contrasts to random number generators in digital games, in which only the outcome of this stochastic process is observed, but the generation of random numbers is obscured from players' inspection.

In summary, boardgames are a form of interactive media in which players instantaneously modify form and content by taking actions that reconfigure meaningful spatial relations among a boardgame's material components. When considering boardgames' temporality in terms of turn-based chunks of time, the speed with which player input is resolved is high. The range of boardgames' input varies, but can be large when considering the combinatorial possibilities

that emerge over sequences of gameplay. Although player input in boardgames is not naturally mapped, explicit rules make the consequences of player input moderately predictable, or at least available for inspection.

Boardgames as Materially Mediated Communication

One of the outcomes of players' interactive manipulation of boardgames is communication among players that is transmitted through the material channel of boardgames' components. Returning to the initial conceptualization of media, for communication to be *mediated*, (a) some thing—e.g. a tool, substance, device, or channel—must (b) carry, store, transmit, or display (c) the meaning or information being communicated from one actor to another. In a sense, all human communication is fundamentally mediated by perceptual apparatuses (Mack 1982), but this understanding does not advance understandings of the particularities of boardgaming as mediated communication. Boardgame play does involve communication that would typically be described as *non*-mediated, as when players communicate with each other through verbal and non-verbal channels, although some boardgames, such as *Hanabi, Gloomhaven* (Childres, Cephalofair Games 2017)*,* and *Battlestar Galactica* (Konieczka, Fantasy Flight Games 2008), explicitly restrict how players are allowed to communicate. At times, this non-mediated communication can have important consequences, as when verbal communication is used to make guesses in trivia games, bluff in gambling games, or deceive in social deduction games (Lee 2015). While players can refer to elements of a boardgame using specialized terminology that only makes sense in the context of a given boardgame (e.g. the robber in *Catan* (Teuber, Mayfair Games 1995)), specialized lexicons exist in many domains and are not unique to boardgames. More particular to boardgames, players can communicate with each other by manipulating the tangible elements that comprise the boardgame.

Beyond regular verbal and non-verbal channels, the primary media for communication during boardgame play are the *material, tangible components of the game*. As aforementioned, repeated engagements with and manipulations of tangible boardgame components to perform actions during gameplay laminate both ludic and narrative conceptual meanings onto these tangible objects. As such, further enactments with these tangible components communicate information and meaning among players. Even when an individual does not intend to communicate via gameplay actions, other players may nevertheless attempt to extract the meaning communicated by these actions. For example, competitive players may attempt to infer the motivations or strategies underlying other players' actions, as well as potentially hidden resources (e.g., cards contained in a hand) available to others. Indeed, even some novice boardgamers have reported observing and tracking the actions of other players in this manner (Wasserman & Banks 2017). While novice players may not extract the *same* meanings as expert players by observing other players' actions, they extract *some* meaning based on their current understanding of the game.

Competitive goals may motivate some players to engage in a particularly functional sort of communication: deception. Deception may be of particular importance in boardgames with shifting allegiances, secret information, outright 'traitor' mechanics, or hidden agendas (Robinson 2016), such as *Diplomacy*, *Shadows over Camelot* (Cathala & Laget, Days of Wonder 2005), or *Battlestar Galactica*. In these games, deceiving opponents while simultaneously secretly signaling to allies can improve an individual's (or a team's) position in the game relative to some goal. Navigating these tensions between collaborating with allies via covert cues while not overtly signaling betrayal to opponents demands subtle and creative application of tangible components by players. As players observe particular player actions that correspond with betrayal or fidelity, these particular actions may become conventionally understood as symbols of either. As a consequence, players may begin to strategically avoid or

employ these conventionally understood signs during gameplay. Because these conventions are specific to gameplay histories, different groups of players may develop diverging symbol systems, such that intermixing these groups would yield *mis*communication among players.

Even in strictly competitive boardgames, players may wish to deceive each other to improve their positions. In many wargames, for example, individual units are kept secret from opponents by recording information in secret or displaying unit information on only one side of the tokens or blocks by which they are represented, as in *Conquest of Paradise* (McPartland, GMT Games 2007), *Hammer of the Scots* (Dalgliesh & Taylor, Columbia Games 2002), or *Stratego* (Van Perlstein & Roeper 1944). In these games, hidden information enables players to bluff and feint by moving their pieces, potentially deceiving other opponents as to their intentions and tactics. These acts of deception are only possible because players ascribe particular meanings to particular manipulations of the tangible components of boardgames.

Mediated communication via manual manipulation of tangible boardgame components generates conventionalized, symbolic (in the Peircean sense as *conventionalized*) interpretations of these entities, their interrelations, and the actions that can be performed with them. A full understanding of this process draws on aforementioned understandings of boardgames as interactive media. Communication mediated by boardgames depends upon players manually configuring tangible components (interactivity and material modalities) into particular spatial relationships at particular moments in a game's segmented time (spatiotemporal modalities). These spatiotemporal configurations simultaneously activate indexical relationships including causal relationships, iconic aspects of tangible components, and rules-based symbolic aspects of their interpretation (semiotic modalities).

The meanings of particular manipulations of particular tangible components are unstable while simultaneously introducing dependence of future meanings on past meanings. The lamination

of conceptual meanings to tangible boardgame components occurs through particular uses of these components in particular situations toward particular ends with particular consequences. Therefore, differences in this constellation of particularities yield diverging conceptual understandings of (a) these entities, (b) their interrelations, and (c) manipulations of these components during gameplay. Players' understandings of the meanings of these entities, relationships, and actions in a given boardgame are expected to shape players' subsequent decisions during gameplay. A player with a particular understanding of a game would likely choose a different action in the pursuit of some goal than another player pursuing the same goal, but who has a different understanding of the game. Consider, for example, three groups of *Catan* players whose uses of the robber, which prevents resource production on a single space, follow three distinct patterns. In these three groups, players always move the robber to the space that most reduces the expected resource production of either (a) the last player to move the robber, (b) all other players collectively, or (c) the player who is leading in points. Thus, in these three groups, the robber may acquire distinction connotations related to revenge, utility, or attacking the leader, respectively. These distinct meanings of the robber may influence players' subsequent uses of the robber in pursuing goals related to revenge, utility, or attacking the leader. These uses may in turn reinforce already-established meanings. Thus, by shaping subsequent events of gameplay, existing interpretations of boardgame entities, interrelations, and actions shape future (re-)interpretations of these very same entities, interrelations, and actions. This example should be considered as an idealized case, as in practice boardgame players most likely both interpret components and actions in multiple ways simultaneously and use the same components or actions toward different ends at different times. These divergent meanings and ends introduce potential instability to boardgame mediated communication.

These meanings can shift over the course of a particular gameplay session, over players' histories with a particular game, and over players' histories with boardgames in general. As aforementioned, players' gameplay decisions influence the particular actions and interrelationships among entities that occur during gameplay, and these decisions are informed by players' existing understandings of a given boardgame. However, encountering novel situations, attempting different actions in different contexts, playing different boardgames, and playing with different people all introduce potential sources of variability to players' gameplay options and observations, and thus to the raw materials that inform their interpretations of boardgame mediated communication. This process shares the context sensitivity and importance role of *precedence* in referential communication, in which communicators identify particular objects in their environment by sharing information (Fay et al. 2018).

Implications for Scholarship and Design

Through an exploration of the media modalities of boardgames, they have been characterized as interactive media comprised of a range of types of entities that constitute a medium for mediated communication among players. Specifically, tangible components of boardgames serve as a *material medium* for communication among players as they manipulate these objects during play. This conceptualization of boardgames and mediated communication has implications for their study, analysis, and design. Given the variety of entities that comprise boardgames besides their rules and mechanics, it is important not to a priori exclude them from analysis and research. This is not to suggest that all research and analyses need to include all potential entities and their interrelations. Rather, this discussion is intended to sensitize boardgame scholarship and design to these issues.

Although mediated communication and face-to-face communication are often contrasted (Berger 2005), materially mediated communication during boardgame play is both face-to-face

and mediated. Players sitting across a table from each other communicate with each other as they manipulate the tangible components of a boardgame. This notion of mediated face-to-face communication may make strange more usual conceptualizations of both face-to-face and mediated communication, suggesting that this dichotomy is false. As interfaces, communication, and games become increasingly hybrid, integrating the tangible and intangible (Tyni et al. 2016; see also Bjork and Bergstrom, this volume), understanding and exploring the role of the material in mediated communication will become increasingly important. As an established locus of play, interaction, and communication, boardgaming is a good place to start.

For empirical research, it is recommended that pilot studies are used to identify potential elements of relevance. These pilots are useful for identifying entities that inform participants' experiences and understandings of games that may be unanticipated (e.g., Wasserman & Banks 2017). This recommendation is similar to the common first step of generating a catalog of relevant entities as a part of methods designed to elicit individuals' mental models (Kearney & Kaplan 1997). Depending on the study aim, unique lists can be generated for each individual participant, or a shared list can be generated for all participants (Gray, Zanre, & Gray 2014).

For interpretative research, the implications of this chapter's conceptualization of boardgames as interactive media that integrates heterogeneous entities parallels critiques of proceduralism's overemphasis of rule and mechanic systems (Sicart 2011) by highlighting the central role of players and interactivity. Furthermore, this conceptualization motivates not only considering diverse elements of boardgames, but the interconnections among them. Interrogating these interrelations, and the manner in which players and other agents can influence each other and shift these connections, should yield fruitful analyses of boardgames.

For communication and linguistic researchers, boardgames may provide a fruitful laboratory for investigating the emergence of shared meaning within small groups, how those meanings

change over time, and how those meanings may be carried forward to other contexts. These processes could be observed in naturalistic or controlled settings. In parallel with action video games, playing a boardgame is a complex task that could be used as a laboratory for understanding human behavior, cognition, and communication (Gray 2017). In contrast to videogames, boardgames are eminently modifiable and manipulatable. Altering a boardgame's rules and components requires minimal technical skills in comparison to the programming and graphic design skills necessary for creating or substantially altering a video game.

For designers, the conceptualization of boardgaming as a form of mediated communication may provide additional entrée to a design in addition to more usual starting points like mechanics, theme, or goals (see Brathwaite & Schreiber 2009). Materially mediated communication during boardgame play presents an additional design space. Desired game aesthetics and dynamics can be designed by shaping more just game mechanics and their interrelations (cf. Hunicke, Leblanc, & Zubek 2004), but also by structuring player communication that is mediated by a game's tangible components. Designers of boardgames that include hidden information or social deduction likely already consider how boardgame components mediate communication among players. Indeed, game designers may intuit many of the claims developed in this chapter. Nevertheless, the present systematic articulation of boardgames as forms of interactive media and mediated communication hopefully provide productive structure for exploring this design space.

Throughout this chapter, empirical and interpretative work on boardgames has been marshaled to conceptualize boardgames as interactive media and a form of mediated communication. Areas for further research and analysis, as well as potential design spaces, have been suggested. As journals like *Game Studies* broaden their scope beyond digital games (Aarseth 2017) and associations like the Digital Games Research Association include boardgames in their calls for

participation ("DiGRA Nordic 2018" n.d.), it is my hope that the conceptual work initiated by this chapter will be taken up, critiqued, and refined as scholars and designers continue to engage with boardgames.

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Gamifying Salvation: *Gyan Chaupar* Variants as Representations of (Re)Births and Lives

Souvik Mukherjee

The Shastree's Game of Heaven and Hell: From Philosophy to Race-Game

In 1831, a British officer of the East India Company, Captain Henry Dundas Robertson, sent a unique gift to the Royal Asiatic Society, London. The society's inventory of contributions lists this as 'a colored drawing of the Shastree's game of Heaven and Hell'. The game was accompanied by playing instructions, twenty-five pieces of five different forms and colors; two ivory dice of two inches each completed the set. To anyone from the present day, this enigmatic game of 'Heaven and Hell' would have resembled a slightly ornate version of a *Snakes and Ladders* board. Perhaps a longer description from the Society's archives will help explain the enigmatic reference to Heaven and Hell:

> It appears to be founded on a careful examination of the metaphysical systems of the Hindus. The game is divided into a number of squares of which a part represents the systems of the different philosophers. The plan of the game exhibits the most highly approved methods that have been laid down by Hindu theologians for gaining beatitude. It contains two heavens and two hells. The Great Heaven or *Mucsha* [Moksha] is in fact the Divine essence itself at which the souls of the good arrive by two different roads one of which is short that of Capila and the other long that of Patanjali. ("Miscellanies, Original and Select" 1831, 85)

Kapila is regarded as the founder of the rationalist Samkhya philosophy within Hindu thought and Patanjali is a renowned physician and exponent of ancient Indian yoga. The game traced

the human being's journey to Heaven or Hell through stages, of good action and bad, marked in the squares on the board, and it seems that the player could follow either of the two philosophical pathways. The 'Shastree' (a title granted to a scholar of the Hindu scriptures) concerned is one Tiruvenkata (sometimes spelt 'Trevangadacharya' in the British colonial archives) Acharya Shastree is famous in the history of chess for writing a comparative treatise on Indian and Western chess problems. The so-called *Game of Heaven and Hell* that he had shared with Robertson was variously called *Moksha Patamu* [study of *moksha* or spiritual liberation], *Gyan Chaupar* [the dice game of knowledge] or *Parampada Sopanam* [steps to highest place] in different parts of India. *Chaupar* is the name of the dice game from which *Ludo* and *Parcheesi* derive. The literal translation of *Gyan Chaupar* would be the '*Chaupar* of knowledge'. Other known variants are the mid-nineteenth century mentions of the game *Golok Dham* in Bengal and the Tibetan / Nepalese game of Rebirth and Liberation. While common in nineteenth century India, the game seems to have been a source of wonder to Robertson's contemporaries in the Royal Asiatic Society.

A good fifty years after the Shastree's gift to Robertson, one finds yet another mention and similar admiration of the game in the *North Indian Notes and Queries* by W.H.D. Rouse (1896). Here, among a motley list of oriental curiosities compiled in colonial India, including charmstones and taboos, is the following description:

> A Primitive Game, played upon a board having seventy-two squares. Two players; nine cowries used as dice. The squares have curious designations: such as the three heavens, truthfulness, virtue, villainy, &c., and a player getting in one of these goes up to heaven or down very far back, as the case may be. A diagram of the board is given. [It seems to be a most excellent game.] (Rouse 1896, 207)

Where the author seems to be making rather pejorative or neutral observations about the other things in the list, the high praise for the game is noteworthy. The description also mentions the exact number of squares on the board and the number of dice. For some reason, it also counts 'villainy' among the three heavens (whereas the earlier description lists two heavens and two hells).

Subsequently and quite surprisingly, however, these games and their variants are far less known in India, especially after independence, although most Indian children grow up playing their European race-game version – *Snakes and Ladders*. In this, a clear transition can be observed in the games from an activity that was about individuals learning about the complex routes of *karma* to the spiritual liberation from the cycle of rebirths that all the Indic religions (Hinduism, Jainism and Buddhism) posit. After being imported into Europe in the 1890s, *Snakes and Ladders* has seen many further iterations such as *Chutes and Ladders* in the post Second World War United States, and as the rather unique *Sleds and Toboggans*, or *Cats and Ladders* games. Its Indian origins are mostly forgotten, and as a commentator writes on her website, even *Snakes and Ladders* is a version unknown to "many Americans [who] haven't even heard of it, and think it's a "wrong" name for *Chutes and Ladders*" (Dodd 2017).

Viewing the game as a simple childish race game takes away the rich ludic and semantic content coded into the squares, often including carefully crafted philosophical pathways or possibility spaces. In fact, even the early Victorian imports of the game contained a moral progression of virtues and vices, which although far less complex, was still closer to the original philosophical use of the game-board that has now been removed altogether. This essay aims to rectify this omission with the current research tools available in Game Studies contexts, and uses these to re-examine the original versions of *Snakes and Ladders* in terms of their

application of Indic philosophies to life situations. In sum, it argues for these games being tools for making the complex mechanics of *karma* in these religions accessible to quotidian religious practice. As such, it views this as a form of gamification that much predates the very formulation of the concept in Game Studies and other discussions of games and culture in Western philosophy.

A Note on Karma and Gamification: The Specific Usage of These Terms

As a necessary but hopefully brief digression, both Karma and Gamification are concepts that need to be unpacked in the specific context of this chapter before proceeding with further analysis, given the controversies surrounding both. Hindu, Buddhist and Jain beliefs are very diverse and there are many divergent sects within these religions. All of these religious communities believe in a rebirth-cycle as constituting their soteriology but how karma is understood by each of them is very distinctive. A fuller discussion of the nuances of karma in all three religions is beyond the scope of this discussion. Instead, it will be helpful to draw on the expertise of anthropologist Gananath Obeyesekere, to formulate a notion of karma common to all Indic religions:

> Jainism, Buddhism and later Hinduism are individual religions which nevertheless share the following common set of eschatological features:
> - A theory of rebirth that postulates a cyclical theory of continuity, so that death is merely a temporary state in a continuing process of births and rebirths.
> - A theory of karma then postulates that one's present existence is determined for the most part by the ethical nature of one's past actions.

- A theory of the nature of existence known as *samsara*, which includes all living things in the cycle of endless continuity.

- A theory of salvation *(nirvana),* the salient characteristic of which is the view that salvation must involve the cessation of rebirth, and must therefore occur outside of the whole cycle of continuity, or *samsara.*

(Obeyesekere 1999,139)

Philosopher Jonardon Ganeri describes karma thus: "Let me be clear. The idea of karma is that every human action has consequences, but it is not at all the claim that every human action is itself a consequence. So, the idea of karma does not imply a fatalistic outlook on life, according to which one's past deeds predetermine all one's actions" (Gutting 2016, ch.9). Karma, unlike in John Lennon's song or indeed in videogames is not 'instant'. The gaining and losing of karma is intrinsically entwined with past actions, lives and even the actions of others. In the Buddhist text, *Milinda* Panha, when asked by King Milinda (Menander) whether karma is transferred from one life to another, the sage Nagasena replies with an allegory:

"What do you think about this, great King? Is it possible to point to the fruit of Trees which have not yet produced fruit, saying: 'The fruit is here or there'?" "No indeed, venerable Sir," "Just so, great King, while the continuity (of life) is uninterrupted, it is not possible to point to these acts, saying: 'These acts are here or there'." (Ganeri in McDermott 1999, 168)

In this particular Buddhist context, it is impossible to understand how karma manifests itself; until it actualizes, karma is only perceivable as a mesh of potentialities. In *Gyan Chaupar* and its variants, however, karmic results are quite clear cut – actions lead to specific results or states

of being. To clarify further, certain squares have the ladder or the snake leading to another square so in that sense, the karmic result is clearly told in terms of a cause-effect relationship. For example, on one of the boards, "Jealousy" in square 28 contains a snake that takes the player to square 10 that is reserved for the greatest sinners. Nevertheless, the complexity and aleatory nature of karma is not forgotten, and the fact that dice-throws are influential in determining karmic states reflects the fact that karma is not fully understandable and predictable. The player can only move up to square 28 *depending on the throw of dice*, which is the aleatory part.

Different game boards have projected the movement of the player on the plane of karma reflecting their varied respective philosophies and a closer examination of this is necessary to comment on how they 'gamify' their belief systems. Before that, it is necessary to briefly clarify what is meant here by 'gamification'.

Gamification has recently been heard as a marketing and management term. Another definition of the term, which is of greater interest for this chapter, is that of:

> [A] general process in which games and playful experiences are understood as essential components of society and culture. From this perspective we could look at how practices and rituals, belonging to different historical and cultural contexts, might take the form of or resemble a game. (Fuchs et al. 2014, 7)

Mathias Fuchs et al. go on to comment on the work of Johan Huizinga (1949) who argues that the play element is an integral part of societies, and Roger Caillois (1961) who "has shown how the playful might in fact belong to living beings of any kind, and not be limited to the human sphere" (Fuchs et al. 2014).

Gamification is a term connected to digital media for a process that Deterding et al. describe as "the *use of game design elements in non-game contexts"* (2011, 9; original italics). For the purposes of this chapter, the game and non-game binary is not regarded as one that is watertight. Following an earlier discussion (Mukherjee 2015) and observing the peculiar ways in which the game in *Gyan Chaupar* cannot be clearly dissociated from life activities outside the game, as the game board and its pieces clearly inform quotidian events of life, the relation might be better described as supplementary in Jacques Derrida's terms (Derrida 1978). Instead of a center-margin binary, Derrida proposes the centrality of the margin and vice versa, where each of the elements add to and simultaneously inform the very existence of each other.

Gamification has been roundly criticized by scholars such as Ian Bogost (2011) for whom it has less to do with game design and using games to problematize social and cultural issues than being used as a tool to exploit consumers. Bogost provocatively describes gamification as "bullshit". Niklas Schrape also sees gamification in this sense as a potential danger that might bring in total surveillance via the manipulation of the biopolitical behavior of players where positive feedback from these games will ensure their loyalty: "Points, badges and leaderboards are more pleasant than prisons and executions. The carrot beats the stick. The only price to pay is total surveillance" (Schrape 2014, 21). He also astutely notes that in such marketing contexts, games are more about influencing how people behave, rather than how they think. The usage of this term in this chapter is mindful of these criticisms and eschews the marketing context in favor of seeing games as a way of understanding society and culture. *Gyan Chaupar* and its variants existed long before the term was coined and before Huizinga, Caillois and later theorists of games and culture.

Mathias Fuchs (Fuchs 2014, 119-141) identifies many instances in European history where games have been used to understand religion, music, magic, learning, lifestyle and even killing.

Such connections have been made for ages. Huizinga mentions the *halsratsel* (literally, 'neck-riddle') that one had to solve or forfeit one's head. He also mentions the Indian sage, Yajnavalkya, playing a game of riddles where one of his fellow sages loses his head when he cannot answer; Huizinga observes that sacred lore is having a game with itself (Huizinga 1949, 109). The Indian poet, Bhratrihari, writing in the 3ʳᵈ Century AD, says: "The house where one lived is with many filled//Where once lived many, Death his spite has spilled//Who joined with time, with us pieces plays//On the vast board, the ancient game was willed". (Shah 2010, 16). This very ludic description of the cosmos as a vast gameboard is also found in the Persian descriptions of backgammon as having cosmological significance where the pieces represent humans and the twelve zodiac signs (Daryaee 2002, 289).

Fuchs speaks of religious gamification with the example of Gerhard Tersteegen, who designed *Pious Lottery*, a card game from 1769 that contained words of wisdom and advice for believers. *Gyan Chaupar* and its variants certainly teach religion but they do much more. In fact, the game's basic idea (or is it 'ethos'?) is one that has been adapted across three quite different religions and then again in Europe, in conjunction with the Protestant work ethic, as is evident in the early European boards or variants such as the *Game of Life* (see Perinbanayagam 2007). The *Chinese Promotion Game*, which is about how to gain promotion in the complex workings of the mandarindom, is yet another gamified variant of *Gyan Chaupar* (or even more of the *Tibetan Game of Rebirth*, which will be discussed subsequently) that is designed for a very different and this time, non-religious context. Although, *Gyan Chaupar* is rarely played in Northern India (if at all) today, in Southern India, the variant called *Paramapada Sopanam* is played by the worshippers of the god, Vishnu, on the night of the religious festival *Vaikuntha Ekadasi*:

Traditionally, Parama Pada Sopanam is played on the night of Vaikuntha Ekadashi (the 11th day after the new moon in the Tamil month of Margazhi). […] Hindus also believe that dying on Vaikuntha Ekadashi will take them directly to the abode of Vishnu, liberating them from the cycle of rebirth. On this day, the devout stay up all night fasting and praying and playing the game helps them pass the time till dawn, when the fast is broken. (Sudhagee 2010)

What is obvious from this is that play, religion, social and cultural practices have a rather unique relationship here and this is more supplementary and affective than something that can be analyzed in discrete parts. It is in this sense of the blurring of boundaries between the game and social practices that this chapter understands gamification.

Gyan Chaupar: **Previous Research on the Game Boards.**

[INSERT IMAGE 9 HERE]

Figure 9. *Gyan Chaupar*, Late 18th Century Jain game board on cloth in the decorative arts gallery of the National Museum, India. Acc. No. 85.312. Attribution: By Nomu420 (Own work) [CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

[INSERT IMAGE 10 HERE]

Figure 10. Jain version Game of Snakes & Ladders called jnana bazi or Gyan bazi, India, 19th century, Gouache on cloth. Attribution: By Jain Miniature. (http://www.herenow4u.net/index.php?id=72923) [Public domain], via Wikimedia Commons.

For a game that is hardly played in its original form, many examples survive in different parts of the world. The basic rules are, of course, easy to learn and the game has been passed down generations - albeit in its rather denuded form. Unlike the *Royal Game of Ur*, not much

difficulty presents itself in the learning curve. Before speaking further about the boards, the absolutely indispensable research of Andrew Topsfield must be acknowledged. Topsfield started his comparative analysis of the game with twenty boards and then continued to add more boards that he found later. His description will reveal the vast range of socio-religious contexts that the game was involved in:

> A provisional classification of the Hindu, Jain, and Muslim versions of the game was outlined, based on the size and format of the playing area, the numbering and nomenclature of the squares, and the configurations of snake and ladder patterns. The most common types are the 72-square Hindu (predominantly Vaisnava) board and the 84-square Jain board, followed by their expanded variants, which in Pahari (Punjab Hill) versions of the Hindu game can run to about 360 or more squares. An example of the 100-square Sufi Muslim game was also described. (Topsfield 2006, 143)

The Vaishnava tradition is linked to the god Vishnu and the Saiva tradition is the Hindu tradition in which the boards are made. The other mentions are self-explanatory. Following Topsfield, Jakob Schmidt-Nielsen has undertaken an extensive study of the *Gyan Chaupar* boards. He believes that although "no scholar has so far attempted an explanation of the reference to *cauparr* in the name of *gyān caupar* beyond the mere invocation of a popular game, […] that such an explanation could and should be undertaken not only on the level of similarity in design and mechanics, but also and more importantly on the level of similarity in representational value" (Schmidt-Nielsen 2013, 6). Given the popularity and significance of *chaupar* in Hindu mythology (and presumably the fact that it predates the other dice game given its mention in earlier sources), it is likely that people would start calling the later game the chaupar of knowledge. The variants have many other names as have been indicated earlier.

Schmidt-Nielsen describes *Gyan Chaupar* as "essentially a race game [where the] squares are inscribed with terms relevant to the religious orientation expressed by the board in question (Jain, Hindu, Sufi, etc.), and usually incorporate cosmological and karmic themes" (Schmidt-Nielsen 2013, 6). He addresses the relational nature of the terms in the square and also the significance of their positions on the board where the lower squares deal with lower states of being and vices while higher squares deal with higher states of being and virtues. He also states that "[t]he winner is the first player to reach the designated winning square which is usually the central square of the top row, but sometimes (especially on Jain boards) a square *above* the top row" (Schmidt-Nielsen 2013, 6). Writing a century earlier, Frederick Eden Pargiter describes a 124-square game that he assumes is from the Vaishnav tradition. Pargiter, a competent Sanskrit scholar and Orientalist, is able to read the board thus:

> The lowest compartment, containing squares 1-4.1, deals in its squares with what may be called generally physical and social conditions, virtues and vices. The second, containing squares 42-88, deals rather with moral and spiritual virtues and vices. The third and highest, containing squares 89-124, deals with celestial objects and the highest spiritual attainments, but contains no vices, for the saint in reaching this stage has presumably passed beyond all such defilements. (Pargiter 1910, 539-540).

Pargiter also notes the presence of a side compartment or side-game which the other descriptions do not address. The divergence in the readings of the game is evident when one compares the different descriptions. David Parlett echoes Topsfield's observations while commenting on a modern version of an eighty-four square gameboard that he has procured, which proclaims that "all creatures are molded in eighty-four genes or moulds" (Parlett 1999, 94). There is an attempt to translate the game into modern English: the translations, for example, "divine mother to fulmination (61-42)" or "aloofness to illumination (48-10)" seem

rather convoluted and do not contribute to understanding the game. The game also features in R.C. Bell's *The Boardgame Book* (1979) where he refers to *Moksha Patamu* as game used for religious instruction and one which taught that good and bad exist side by side. Some of these descriptions need to be reassessed in the subsequent sections once both the Western and Indian observations of the game are compared.

Indian commentators of the game are surprisingly few. Nevertheless, unnoticed by earlier researchers, G.N. Somani published a commentary on the game where he described a 108-square board as the "Chess of Knowledge of Human Life". Somani attempts to link religious beliefs of all kinds to the board and his interpretation of the squares also includes references to Western philosophers and events in Indian history as well as a fairly detailed but loose interpretation of the squares. For example, in describing square 32, which is about *Grihastha ashram* or the life of a householder, he brings in the caste system in India, how it did not exist in ancient India, how a husband and wife should live together and finally, Shakespeare's advice to women! (Somani 1953, 10) Somani's idiosyncratic work nevertheless recognizes the multiple planes of being and the fact that each has its virtues and vices. He also quite astutely notices that not all virtues are represented with ladders and many vices occur in squares without snakes in them. Those virtues without ladders are, according to him, stages where the soul is at rest. Harish Johari, writing mainly for an international audience, is more restrained in his interpretations but his book, too, is based more on personal opinion than on research. For Johari, "playing the game is playing with manifestly divine knowledge found in the aphorisms and doctrines of yoga, of Vedanta, and samkhya, which flows in the body of the Hindu tradition as a philosophy and a lifestyle. [...] After a few minutes of playing, the game board starts to play with the mind of the player" (Johari 2007). Johari, however, is one of the few commentators to describe in detail how the game should be played. He says that the players begin on square 68, the square of Cosmic Consciousness and also the final point of the game.

Whoever throws a six gets to enter the game on square 1 (birth) - to enter the game is to enter the world of karma and the objective is to get out of it again. The player(s) move(s) according to the throw of the dice and the objective is to reach square 68. It is possible to overshoot the objective and in this case the player has to cast the dice to reach square 72 (or *tamoguna*, which is loosely translated as the quality of darkness and inertia) where a long snake will be the route back to the world of karma again. The game goes on and players learn about the workings of karma until they are able to escape the world or *samsara*. More recently, a Calcutta-based boardgame collector, Aman Gopal Sureka, has started making this game again and he sees in it "the essence of a thousand years of self-exploration [and] the heart of Indian tradition" (Mukherjee 2015b).

In the face of such disparate styles of analysis and often very different interpretations of the gameboards, it is important to come to some careful conclusions. It is important, first, to note that the boards come from different religious traditions as Topsfield demonstrates and varying interpretations are only normal. Next, the game is not a 'race-game', although in standard classifications it seems to be so. There is no race intended in the game and unlike *Snakes and Ladders*, in *Gyan Chaupar* the point is not to see who reaches nirvana first. Rather, it is to learn the different pathways and obstacles to reaching nirvana through the karmic cycle of rebirths. It is not about winning or losing as Schmidt-Nielsen seems to claim. Neither is it a "pilgrim's progress" as Topsfield calls it, if one considers the phrase's Puritan and Bunyanesque connection. Instead of starting at birth or square 1, Johari's alternative of starting in the level of cosmic consciousness is more acceptable because this is also what happens in some of the variants. Any claim that snakes indicate evil and ladders good is also problematic because the Judaeo-Christian stigma of the serpent does not apply in Indic religion. Indeed, Vishnu is depicted resting on a snake-king and many naga kings are found in both Hindu and Buddhist mythologies. Incidentally, the Nepalese variant of *Gyan Chaupar* is called *nagapasa* (Snake

dice) and has red and blue snakes to indicate promotion and demotion. It might be better to call it snakes and snakes rather than *Snakes and Ladders*. A final caveat would be against the absolutist claims that the Indian commentaries make about the efficacy of the game to change behavior and of course, the lack of well-researched arguments in favor of personal opinion greatly reduces their research credibility. It might be argued, therefore, that a fuller commentary on how these games gamify karma might be sought elsewhere. Actually, one only need look at two variants of the game.

Enter the Variants: The Ludic Proto-Hypertext

[INSERT IMAGE 11 HERE]

Figure 11. The *Golok Dham* game - a Bengali variant of *Gyan Chaupar*. (Author's personal collection).

The subheading is no exaggeration. Just as not all *Gyan Chaupar* boards contain ladders, these adaptations do not contain either snakes or ladders. *Golok Dham* from Bengal and the Tibetan *Game of Rebirth* use a complex choose-your-own-adventure type hyperlinking instead. Mark Tatz and Jody Kent's classic on the Tibetan game remains an unparalleled source for analyzing such games. *Golok Dham* from Bengal has a similar (if less complex) game mechanic and is also a part of Bengali culture. Both *Golok Dham* and the Tibetan *Game of Rebirth* also include place names besides the names of virtues and vices on their game boards. In the Tibetan game, this is explained easily. The place names are directly connected to the cosmic geography presented in Buddhism where Mount Meru is at the center of the cosmos surrounding by circular realms; the highest of which are the planes of Buddhahood and the lowest are the hells. These geographical locations also correspond to states of karmic being. Tatz and Kent describe the *Game of Rebirth*, thus:

The Tibetan Buddhist vision of the universe, comprising both samsara and nirvana, is represented in outline by the squares of the board. The scheme of the game is in fact a combination of several overlapping systems. Beginning from the bottom are the regions of the world with its karmic destinies. From the fifth row upwards are the paths to Buddhahood. The aim in playing the game is to move from the degrading round of rebirth among the lower states, from hells to gods and back, into one of the paths of the Greater Vehicle - the Mahayana proper or its tantric subdivision - and to continue on it, past the irreversible stage to the Dharma body of the Buddha. From there one performs the various tasks of the fully Awakened, gradually moving to nirvana, the top left square. (Tatz and Kent 1977, 32)

They also mention that the game has scope for players different and lesser levels of existence in other religions, namely Hinduism and the Tibetan religion Bon, and even the Lesser Vehicle (Hinayana) Buddhism. In the upper levels of the game board, there are two distinct paths to achieving nirvana, the Tantra track and the Sutra track. Unlike *Gyan Chaupar*, here, the objective lies in the last square of the board or the top-left square (104). The game achieves the multiple possibilities through an innovative hypertextual plan. Just as in the choose-your-adventure series books or the hypertext fiction of recent times, the squares provide multiple possibilities based on the player's throw of dice. For example, the game starts on square 24 or the 'heavenly highway' and on the throw of one, the player goes to square 27 or the heaven of the four great kings while on throwing 6, the result is a stint in one of the lower hells. There are instructions for all the six possible throws and hypertext-like, that each throw links to a different destination. Perinbayanagam also attributes to the game a lesson on the causation of phenomena. Again, despite structural differences with *Gyan Chaupar*, the game seems to be one that "represents the vicissitudes of the self's journey through life and seeks to provide a moral and ethical understanding of these changes" (Perinbayanagam 2006, 182). There seems

to be another variant that Siegbert Hummel and Paul Brewster describe as *Sri-pai-khor-lo'* and state that it depicts places such as Lhasa (the Tibetan capital), the fabled Shambala, the Western paradise of the meditating Buddha and lastly, the hot and cold hells. They also say that it is played with a wooden six-sided die with the Buddhist chant 'Om Ma-ne Pad-me Hum' written one syllable per side. It might be mentioned here that the hypertextual nature of the game has been quickly picked up on by games enthusiasts and recently the game was built in digital media using the hypertextual game-narrative design tool, Twine (Porpentine 2013). The Twine game is now unavailable but an Android version of the game is available on the Google Playstore.

The *Tibetan Game of Rebirth* is said to have been planned and invented by the 12th century Buddhist monk, Sakya Pandit, who was one of the key teachers of Tibetan Buddhism. Learned in Sanskrit texts, he journeyed to India but presumably cut short his journey due to the Muslim invasions of the country. Nevertheless, given the similarity of the games, there might have been some influence of *Gyan Chaupar* or an earlier variant on Sakya Pandit's game. The reason given behind his creation of the game was to educate his illiterate and ailing mother on the finer points of Buddhist philosophy. As Fuchs comments in his essay, such use of games would likely be called gamification or even edutainment. With a similar didactic purpose, another game that is almost unknown now, became popular in Eastern India in the nineteenth century. The game is called *Golokdham* after the Bengali word for the divine abode of Vishnu and this is also the last square in the game. Although a clearly Vaishnavite game, it differs significantly from the *Gyan Chaupar* boards associated with that sect. There are no snakes or ladders; the squares often portray places associated with Hindu mythology or virtues and vices. The movement in the game is also hypertextual like the Tibetan game and depends on dice throws.

Like Sakya Pandit, the hugely popular nineteenth century Bengali mystic, Sri Ramakrishna, endorsed the game of *Golokdham* as a means of teaching his disciples. In the *Gospel of Sri Ramakrishna,* there is mention of the game: "The devotees were engaged in a game of 'Golok Dham'. Hazra joined them. The Master stood by, watching them play. M. and Kishori reached 'heaven'. ... Hazra fell into 'hell'" (Sarkar 2002, 94). There is a clear indication here that the landing in hell has deeper significance that extends beyond the game. The game seems to have been popular in the mid-nineteenth century and yet, strangely, an essay on Bengali pastimes and games published in the *Calcutta Review* in 1859 does not mention the game at all. A well-known novel set in nineteenth century Assam in Eastern India, *A Saga of South Kamrup* (Goswami 1953), mentions women playing *Golokdham* and writing his memoirs, *When I Was a Boy in India* (Roy 1923), Satyananda Roy writes that "one very interesting game called *Golokdham* or 'journey to Heaven' has a very ancient origin" and adds that "to me it seemed an instructive game which impresses on the minds of the players the good and bad side of life with their consequences." The author Nirad C. Chaudhuri also remembers playing the game and compares it to the *Divina Commedia,* wherein there is an ascent from Inferno through Purgatorio to Paradiso. If indeed it is so, then it is one where the rules and the gameplay make it a hypertextual Divine Comedy.

The rules of the game are as follows:

> Two or more persons can play this game at a time, but each of them takes differently colored pieces. Seven 'cowries' (counters resembling a miniature conch) are necessary for this game. The game starts from the left lowermost block in the chart marked 'Samsar' (meaning world), but, after the cast, unless four of the seven cowries of a player fall on their reverse sides (i.e. with split surface up) simultaneously, his piece cannot get entry into the Samsar block. After the cast, the piece will move, as per

instruction written in the blocks of the chart. If there is no written instruction, or if the number of cowries with split surface up does not coincide with the number written on the block, the piece will move according to the number of cowries with split surface up. If none of the cowries falls flat, the cowries should be recast. (Sarkar 2002, 94)

This description illustrates the hypertextual nature of the game and it also brings up an issue that was not noted in earlier research. With the cowrie shells as dice, it is eminently possible that the dice throw amounts to null because none of the seven cowries have fallen on their flat side. In the karmic scheme of things, it is possible to exist in a state that has no direct consequences and one needs to wait for the next throw where there is a karmic consequence. Much time may be spent even in waiting to get into the game. Once inside the game and starting the life's journey through samsara, the objective of the game is to reach heaven and effectively, stop playing the game. The end of the game is where the karmic events fall away and the player has attained salvation.

The Many Conclusions of *Gyan Chaupar*: How to Gamify Salvation

Whether it is Sakya Pandit teaching his mother or others playing these games to learn the ways of karma (and by extension, lead good lives), all of these games recode the various soteriological systems of Indic philosophy in ways that present their own version of karma and salvation. The number of squares in *Gyan Chaupar*, whether 72, 108 and 124 squares all have a numerological significance in Indian mythology where the number nine (all of these numbers are either multiples of nine or add up to nine) is considered sacred. In the versions of *Gyan Chaupar*, the *Snakes and Ladders* are laid out quite carefully to indicate specific results (*phala* or 'fruit') for individual karmic events.

In the Vaishnav board, for example, in the second plane of being, which is relatively low in the scheme of the cosmic scheme, a square which represents 'jealousy' contains a snake that leads

to the square in the lower plane that signifies 'greed', which is one of the six major vices (called the 'six enemies' in Hindu scriptures). This seems to be an attempt to indicate that jealousy leads to greed. Similarly, 'mercy' takes one up to the highest plane but not to Vaikuntha or the divine abode of Vishnu (and thereby also the achievement of salvation and the end of the game). Square 54 is that of 'spiritual devotion' or *bhakti* and landing on this square takes the player straight to Vishnu and to salvation. Those familiar with the history of religious reformation in India will be aware of the *bhakti* movement, a widespread religious ferment that affected vast sections of Hindu society in medieval India. Wendy Doniger describes the movement thus: "[m]any, but not all, *bhakti* movements were open to people of both genders and all castes. Devotional practices included reciting the name of the god or goddess, singing hymns in praise of the deity, wearing or carrying identifying emblems, and undertaking pilgrimages to sacred places associated with the deity" (Doniger n.d.).

In yet another example, *Golok Dham* combines various place names from Hindu mythology, including the two epics, where the character-traits described in each square and the movement from one square to the other are clearly influenced by contemporary moral norms. For example, if the player lands on square 20, which is about visiting brothels, then the result is that the player moves down to square 7 or hell and there is no escape from there until the player is able to get a throw of one, which is quite difficult to achieve and which also signifies a fresh beginning of life.

The Tibetan *Game of Rebirth* has already been discussed at length, illustrating the movement of the player according to the schemes of Mahayana Buddhism. The gamification in both of these games involves a sort of proto-hyperlinking whereby the same square can be linked to different outcomes depending on the throw of the dice. Again, this illustrates how karma works

in inscrutable ways (symbolized by the throw of the dice) but also that there is a connect between each action and its karmic outcomes.

Topsfield makes an important observation about the end of the game:

> So, when playing Gyan Chaupar, is it by chance or luck that we win? Well, yes, since it is only a game. (Unless, of course, it is believed that quasi-divinatory karmic forces determine the fall of the dice and thus the outcome of the game.) Even so, the implicit message is an encouraging one. Eventually the game will end, the goal will be attained. Through right effort or devotion, karma is expunged, the ego transcended, ignorance vanquished. Snakes and Ladders, as mere manifestations of maya, will fall away: moksha or salvation will be won. (Topsfield 2006)

The only way to achieve salvation via the game is to reach the position where the game and other trappings of karma fall away. Topsfield is not wrong to mention the quasi-divinatory karmic forces because many of the players and commentators would indeed believe that there is a relation between karma and the throw of the dice. The karma here is certainly not "instant karma"; playing the game is more about learning the pathway to the cessation of karma, without the pressures of winning or losing or even striving for success through hard work. The notion of the race will come to the game later - from other cultures and geographies. Even in the Western adaptations, although the original intent maybe absent, the urge to teach life through the game persists. Repeatedly, *Snakes and Ladders* revives its gamifying element and takes on a pedagogic form. The Scottish Parliament's game that combines *Snakes and Ladders* and chance cards (as found in *Monopoly*) to teach whether someone can become a Member of the Scottish Parliament is one such innovative use. (Scottish Parliament, 2018)

If one is to think of gamification, or call it what you will, then *Gyan Chaupar* and its hypertextual variants have certainly been brave pioneers. They have set out to gamify no less

than an entire set of philosophical systems and how these approach life itself. When any consideration comes up of whether and how games influence cultures and ideologies, these early versions of Snakes and Ladders need to be redeemed to their original status as worthy precursors of present-day game-design and narration. Such an example of gamification is one that is not about leaderboards, points or even winning. Rather, here playing the game is about introspecting into the soul and learning about the divine play of karma and salvation.

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Guilt Trips for the Cardboard Colonialists: The Function of Procedural Rhetoric and the Contact Zone in *Archipelago*

Dean Bowman

Whilst boardgames are less studied than videogames and lack the commercial and cultural penetration of their digital cousins, they serve an important function as meaningful cultural objects that can construct or reinforce our understanding of the world through the communal act of play. One such way is through the construction of our perception of the past, what Astrid Erll refers to as cultural memory. For her, media is a crucial 'switch board' between personal and collective remembering, constantly maintaining or undermining the national or cultural perception of the past and its meaning to the present. Essential to this process are the specific technological affordances of the medium and how these allow "specific modes of remembering" (Erll 2011, 113-114). This essay will explore some of the affordances of boardgames as a medium and how they go about constructing cultural memory through play as both a socially embedded practice and as a material object.

Anyone who has scanned a shelf of modern boardgames must have been struck how regularly they evoke real historical eras and settings. On this point, Sebastian Deterding observes how the war game audience overlaps with devotees of military history, demonstrating a vibrant interest in the recreation of historically contextualized simulations of real-world battles (Deterding 2009). Such a historical focus also exists in the Eurogame, the specific subsection of hobby games the popularity of which has, in the last three decades, spearheaded a renaissance in tabletop gaming (Woods 2012). Eurogames typically have a more zoomed out focus than war games, which tend to focus on a single battle or campaign in minute detail, whilst Eurogames often span a broader historical period. They are often anchored in a specific locale during a disruptive historical moment of crucial social and technological transition such

as the renaissance, which is understood as a crucial origin point for modern Western culture (Brotton 2006), and remains a perennial setting for such boardgames as European designers constantly return to and work through a pivotal moment of their own cultural history, for instance *Medici* (Knizia, AMIGO 1995), *Genoa* (Dorn, Ravensburger 2001), and *Florenza* (Groppi, Elfinwerks 2010).

Jason Begy, who has applied Erll's theories of cultural memory to a series of games set during the emergence of the modern railroad, sees the tendency for such games to ground themselves in transitional, historical moments as affirming their role in maintaining and circulating broadly held cultural memories about those periods:

> 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. (Begy 2017)

Following this lead, this chapter proposes to explore in depth how a specific board, *Archipelago* (Boelinger, Ludically 2012), explores, subverts but ultimately reinforces our cultural memory of colonialism, a political ideology that underpinned the emergence of the modern European nation state and afforded many of the advancements in art and culture that the renaissance is famous for, partly through funneling huge amounts of wealth from the colonies to the imperial centers in Europe (Osterhammel 2005), but also in enacting radical forms of bureaucratic experimentation and social engineering on a grand scale (Pratt 1992).

In order to unpick the ideological meanings of the game, Ian Bogost's influential notion of procedural rhetoric (2010), which describes how games can enact social critiques through their systems, will be mapped onto the field of hobby boardgames, demonstrating its relevance to their study. In the process of exploring how procedural rhetoric functions in this game I make the argument that *Archipelago* succeeds in mounting a systemic critique of colonialism, largely in spite of its author's intent. Furthermore, it does so precisely through the uniquely social affordances of boardgames. In so doing the game allows us to think through the ideological obfuscations and contradictions of colonialism, particularly its self-justification as a humanitarian 'civilising mission' (Osterhammel 2005, Pratt 1992). By using procedural rhetoric as a frame, it is possible to show how *Archipelago* functions as a material depository of cultural memory, informing and questioning our understanding of the period of colonialism and the ideologies that underpinned it.

Introducing procedural rhetoric

With his notion of procedural rhetoric, Bogost combines traditional rhetorical structures and the procedural nature of video games to demonstrate that games, "represent how real and imagined systems work," and how, "[t]hey invite players to interact with those systems and to form judgements about them" (Bogost 2010, vii). Bogost explores how simulations map onto real world systems and thus mount implicit arguments about them, implicating the player in that process via interactivity.

Although procedural rhetoric was conceived with digital games in mind, applying this natively digital theory to the analogue space of boardgames and identifying the gaps and slippages could help us to better articulate the similarities and differences between these two media, as well as the potential gaps in the theory itself. Although in doing so, we should be careful to avoid the

potentially technocentric nature of such discourses; after all, boardgames, though similarly systems driven, can be linked to a far longer tradition of gaming that stretches back thousands of years prior to the invention of the transistor (a pedigree that is explored by Mukherjee in this volume).

The core of Bogost's theory rests with the ability of games to provide simulations of real or historical systems, a position that is equally valid for boardgames. From chess to the geopolitically located releases of strategy publisher GMT, boardgames have often attempted the simulation of real conflicts into playable systems (Deterding 2009). According to Bogost real world ideologies are also hidden procedural systems that underpin society (Bogost 2007, 72) in much the same way that video game code or tabletop rule systems underpin the social act of play. Deconstructing and exposing such hidden systems in games, and exploring how they function to conceal or naturalize ideology (Barthes 2009), might teach us about the ideologies outside of the magic circle of the game space. Games thus, according to Bogost, perform an important pedagogical function for their players.

Colonialism remains a recurring theme in Eurogame design as has been observed by Celia Pearce (Pearce in Flanagan & Nissenbaum 2014). Prominent examples of games which explicitly address the core processes of colonialism, such as the exploration and settlement of the new world, include: *The Settlers of Catan* (Teuber, KOSMOS 1995), *Puerto Rico* (Seyfarth, Ravensburger 2002), *Age of Empires III: The Age of Discovery* (Drover, Tropical Games 2007), *Colonialism* (Leibbrant, Spielworxx 2013), and *The Colonists* (Puls, Lookout Games 2016). There is also a popular tradition of civilization building games, which contain a strong colonial flavor via themes of dominating a map through military and cultural influence, one of the most famous examples being Francis Tresham's *Civilization* (Tresham, The Avalon Hill

Game Co 1980), which purportedly inspired Sid Meier's long running video game series of the same name (Meier, Microprose and Firaxis, 1991-2018), which is one of the few games that has been extensively analyzed in an academic context for its implicit imperialistic and Western-centric ideologies (Friedman, 1998, Ford, 2016).

Simulating a land grab on a chain of tropical islands in the colonial period, *Archipelago* by French designer Christophe Boelinger (2012) falls squarely into this tradition. Although, like many Eurogames, *Archipelago* takes place over a long span of time, it largely fits the model of what Osterhammel refers to as a 'colony of exploitation,' characteristic of a Caribbean plantation colony which, "Between the middle of the 17th and the end of the eighteenth centuries, [became] the historical center of colonialism" (Osterhammel 2005, 31). Aside from its clear colonialist setting, *Archipelago* was chosen due to its reputation of being a hybrid game, fusing elements of two key boardgame genres: the Eurogame, a genre marked by indirect forms of conflict and an emphasis on mechanical depth (Woods, 2012); and the American style boardgame (euphemistically known by the folksonomic (Wal, 2007) term 'Ameritrash' which I shall use despite its negative connotations since it is in general circulation) a genre that stresses a narrative richness of theme, a strong aspect of randomness and an emphasis on direct player conflict (Booth, 2015). This crossover appeal not only gained the game high scores from many reviewers (Vasel n.d.; Bolding 2014; Smith & Dean 2013) but combined elements from both genres to meaningful effect, something which I will argue is crucial to its portrayal of the paradoxical ideology of colonialism. *Archipelago* is also significant in that it utilizes so called 4X mechanics (a genre predicated on the conquering and exploitation of space, whose four eponymous X's stand for 'eXplore, eXpand, eXploit, eXterminate), which Dom Ford has linked to a Western centric historical viewpoint and the process of colonialism and in which, "the player rehearses the development of Western civilization" (Ford, 2016).

The game utilizes a complex interlinking range of mechanics, all of which Woods characterizes as core to the Eurogame genre (Woods 2012, 88-99). The core of the game is the action selection board, where players place workers (a mechanic referred to as 'Worker Placement' and popularized by *Agricola* (Rosenberg, Z-Man Games, 2007)) to compete for a limited range of actions. These include exploring (laying out hexagonal tiles to represent the discovery of new land), harvesting (exploiting those lands for six unique resources), transaction (buying or selling goods on the dynamic import and export market), recruitment (hiring workers from a surplus labor pool), migration (moving workers around the board), and construction (building infrastructure like churches, ports and towns). Crucially, players must resolve crisis cards that threaten to engulf the colony in rebellion if a certain amount of goods are not collectively surrendered. The health of the colony is embodied in the colony stability board, where a black marker represents unrest and is moved up for each failed crisis, and a white marker represents the population of the colony. If ever the black marker overtakes the white marker then the colony collapses and all players lose (the obvious racial overtones of this mechanic will be explored later).

In this endeavor, players abstractly take on the roles of European powers, tasked with working together to build and maintain the political infrastructure of the colonial administration on which they all depend (as evidenced by the crisis resolution phase), whilst also competing to amass the largest fortune. Each player has a screen to hide their resources and a secret role with a hidden scoring condition and end game trigger. One of these roles is the separatist which allows the player to achieve a solo win if they can sabotage the colony. The presence of a potential saboteur and the threat of a collective loss makes *Archipelago* a prominent example

of the 'semi-cooperative' subgenre of boardgames, which also inflects its theme as I will show later.

That *Archipelago* is a reflection on historical instances of colonialism is rendered explicit in the opening passage of the rule book:

> *Archipelago* recounts the great Age of Discovery, an era of intensive exploration and colonization of the world by European explorers. The game covers the period from 1492 (discovery of the Antilles by Christopher Columbus) to 1797 (colonization of Tahiti). (Boelinger, 2012a)

This blurb frames the players actions within a romanticized Western cultural memory of the period as one of discovery and endeavor that neglects the violence that underpinned these processes. The box artwork by Vincent Boulanger reinforces this notion, showing a scene of a ship making landfall on an Edenic new world beach, the conquistador (presumably Columbus) striding forwards with a hand held open in friendship and the native reception gathered to meet him at the jungle's edge comprised of smiling women bearing baskets of fruit. The overwhelming impression of this bucolic and peaceful scene is one of curiosity and commerce, rather than subjugation and disease, which historically marked the Spanish first contact with native populations (Diamond 1998). Ford summarizes how, through such processes of abstraction and simplification, in which complex historical events are homogenized and obfuscated into a few key mechanics, events or images, such games tend to offer an unassailable Eurocentric view of the world. As we will see in the next section, a detailed analysis of some of the game's mechanics and procedural rhetoric problematizes this simple reading of the game.

No Man is an Island: encountering the colonial other

Post-colonialism is a complex term that simultaneously describes an academic field dedicated to exploring the power relations between colonies and the imperial center (Mukherjee 2017), an umbrella term for the oppositional strategies of colonized peoples towards their oppressors (Ashcroft 2002), as well as describing a period following an actual historical-political process of decolonization (White 2014). It is a highly complex field studying deep and traumatic historical structures, the legacies of which are still felt today:

> The devaluation of African slaves still haunts their descendants in metropolitan societies, the inequities of colonial rule still structure wages and opportunities for migrants from once colonized countries or communities, the racial stereotypes that we identified earlier still circulate, and contemporary global imbalances are built upon those inequities that were consolidated during the colonial era. (Loomba, 1998: 129)

Reading the above comment in light of Erll's theories of cultural memory, it's clear that colonialism persists not only in a material sense but in a highly symbolic one, in which our shared national conception of the past can be still seen to influence our supposedly modern outlook.

The application of these post-colonial discourses has only recently started to systematically applied to video games (Mukherjee 2017), even though there are articles which stress the importance of the area for research stretching back much further (Fuller & Jenkins 1995; Friedman 1998). Without wanting to oversimplify this crucial area of thought Jürgen Osterhammel provides a concise definition of the general ideological process:

Colonialism is a relationship of domination between an indigenous or (forcefully imported) majority and a minority of foreign Invaders. The fundamental decisions affecting the lives of the colonized people are made and implemented by the Colonial rulers in pursuit of interests that are often defined in a distant Metropolis. Rejecting cultural compromises with the colonized population, the colonizers are convinced of their own superiority and of their ordained mandate to rule. (Osterhammel, 2005: 16)

In her book *Imperial Eyes: Travel Writing and Transculturation* (1992) Mary Louise Pratt alternately characterizes the colonies as contact zones, "social spaces where disparate cultures meet, clash, and grapple with each other, often in highly asymmetrical relations of domination and subordination" (Pratt 4). Furthermore, the contact zone is the space in which a process of transculturation occurs, which Pratt describes as the process by which, "subordinated or marginal groups select and invent from materials transmitted to them by a dominant or metropolitan culture" (Pratt 6). This two-way flow of ideas characterizes the contact zone as a complex amalgam of subjectivities is more in line with modern conceptions of power established by Michel Foucault, in which power is seen to be dispersed throughout the links within a social system (Foucault 1978), rather than exerted from the top-down.

The possibility for transculturation was partially enabled by the somewhat schizophrenic nature of colonialism itself, which tended to morally justify itself as fulfilling the notion of a civilizing mission, even as it plundered the resources of the colony and enslaved its people (Osterhammel 2005, 109; Pratt 1992, 6). Osterhammel and Pratt both explore colonialism as a complex and drawn out process carried out by a range of social actors with multiple conflicting goals and ambitions. Thus, unlike in games like *Civilization* where your nation's monarch is seen to have

absolute and omniscient control over all aspects of the empire (Friedman 1998), the view of colonialism held by Queen Victoria in the imperial center might have differed from the outlook of a colonial administrator dealing with pragmatic issues thousands of miles away in the periphery.

Despite the overall asymmetry of power relations in favor of the European colonists, there is some inevitable flow of culture to and from the colony, characteristic of the process of transculturation, and this ambiguity is embodied in *Archipelago* by the complexity of its semi-cooperative nature, which requires players strike a balance between cut-throat one-upmanship and collaborative administration. Just as colonial administration required alliances to be formed with the native inhabitants (Osterhammel 2005, 64), *Archipelago* demands such uneasy alliances to be made between players. In terms of its procedural rhetoric, *Archipelago* perversely places personal and collective goals in opposition not only to create dramatic tension and mechanical depth, but to dramatize the contradiction between the European narrative of the civilizing mission and its brutal reality. These aspects, drawn out through player interaction with the mechanics and one another, make *Archipelago* a more nuanced take on colonialism than many boardgames that barely even acknowledge a colonial other. For instance, *The Colonists* sees players expanding into seemingly empty, virgin land, untroubled by any encounter with an aboriginal society.

As Ford points out, despite its positive overtones of "detached study," even the first X in the 4X system, 'exploration' is problematic, since it paves the way for the other three (Ford 2016). Indeed, Pratt is very clear that the emergence of a new European 'planetary consciousness' was bound up with colonialism and depended on both a disinterested scientific discourse (such as the emergence of Carl Linnaeus's *System of Nature*, which began the process of reducing the

world's species into a complete hierarchical taxonomy (Pratt 1992, 25)), and a highly interested pursuit of wealth, which saw rulers sponsoring scientific endeavors in the hopes they would turn up valuable resources. As Pratt's account of the colonial travel narrative shows, exploration in this context was a highly politically charged process that laid in place much of the basis of our cultural memories around the age of discovery and the myth of expanding into empty terrain that underpins the imperialist notion of manifest destiny (Mukherjee 2017, 10-11). This explains in part why games like *Puerto Rico* and *The Colonists*, despite striving to depict colonial expansion, completely erase the presence of any natives that might resist it. As Pratt says:

> The landscape is written as uninhabited, unpossessed, unhistoricized, unoccupied even by the travelers themselves. The activity of describing geography and identifying flora and fauna structures an asocial narrative in which the human presence, European or African, is absolutely marginal, though it was, of course, a constant and essential aspect of the traveling itself. In the writing, people seem to disappear from the garden as Adam approaches—which, of course, is why he can walk around as he pleases and name things after himself and his friends back home. (Pratt 1992, 51-52)

The common mechanic of a fog of war, of which the hex tile placements in *Archipelago* can be seen as a variant, serves a similar purpose in many games, narrativizing this process as a masculine unveiling of, or penetration into, a virgin land. Indeed, the colonies were often characterized as richly adorned females to be conquered by male explorers (Mukherjee 2017, 42) and Pratt observes that the gaze of the disinterested naturalist was invariably male (Pratt 1992, 56). As the game mechanically reduces the deeply nuanced, gendered and politicized process of exploring as a simple strategic choice of tiles; a complex real-world narrative of

exploration and discovery is unraveled by a reductive mechanic. Just as the historical and social realities of the subjected peoples, what Pratt calls their 'lifeways,' were erased by the systems of colonial power and administration, laying the foundations for a new imperial narrative, this is the same process of abstraction, homogenization and simplification of complex historical contingency that Ford also sees being undertaken in *Civilization* (Ford 2016). The function of the map reminds us of its evolving import as a tool of imperialist machinery (Mukherjee 2017, 33). The spatial construction of the *Archipelago* map is, therefore, bound up with the historical process and ideology of colonial exploitation that the game represents.

Within the internal logic of *Archipelago,* the native populace is not only erased but systematically rendered as commodities. When new tiles are revealed it is the number of huts depicted on them that determine the availability of new workers in a shared labor pool. This process sees the natives treated in much the same manner as the natural resources that can also be claimed by the players (indeed the rules remind us that each tile will always possess a combination of five goods and/or native huts, a brutal algorithm that explicitly codifies the native as a resource). Whilst it's true that the nature of the worker placement game is to treat workers as pawns of the player, the representational theme here reframes this exploitation in colonial terms. This simple absorption of the natives from their huts into a general and amorphous labor pool from which players may later recruit them as citizens, abstractly codifies the painful process of conversion. Inherent in this process is a perception of the native, from the colonial point of view, as a cultureless being whose history and traditions are not worthy of consideration (Pratt 1992, 53). A strong impulse of the civilizing mission was to elevate natives from their backward state to one closer to the European ideal (Pratt 1992, 152). Natives, whichever part of the world they resided, were seen as a kind of universal, fungible good that could act as fodder for the imperial machine, and with this in mind it is less surprising that the

game's artwork draws on a caricature of Maori tribesman from the Polynesian islands, even though the game is set thousands of miles away in the Caribbean. Whilst natives are thus rendered interchangeable within the aesthetics and mechanics of the game alike, the player/colonists are active agents in the game world, acting through their loyal citizens. The behaviors undertaken within the game, and afforded and encouraged by its systems, thus cleave closely to the structures of colonialism as summarized by Osterhammel and Pratt.

Gaming in the contact zone

After analyzing the play culture of Eurogame enthusiasts Woods makes the salient point that for the majority of players victory comes second to maintaining the experience of the game: "thus, as much as the formal game structure prescribes the pursuit of goals, players are simultaneously called upon to engage in competition while at the same time maintaining the sociability that is at the heart of the Encounter" (Woods 2012, 172). *Archipelago* complicates this considerably through its status as a semi-cooperative game and the mechanics of betrayal outlined above. The threat of the separatist creates a culture of suspicion and accusation, leading players to scrutinize every action of their opponents, a condition which challenges the sociability Woods observes to be at the heart of the Eurogame encounter.

It's important to point out that the behavior of the player isn't inherently enshrined in the rules, rather it is a procedural outcome of the player's interaction with the game's systems and one another. Nowhere in the rulebook does the game extol the virtues of selfishness, or recommend that players backstab one another (quite the opposite in fact, as we will see below), but the intersection of specific rules, which by themselves seem fairly inert, produce such selfishness as an emergent result, in spite of the typical form of sociability the Eurogame often encourages in players.

To explain this sociality, Woods explores how Eurogames culturally evolved in the context of a postwar German 'media ecology' that valorized board gaming but discouraged violence; an ethos embodied in a model of economically focused *Gesellschaftspiele*, or 'Society games,' which, "are not about the lawlessness and disorder of War, but the normal operations of civilized Society" (Heli 2004, quoted in Woods). According to Woods such an approach to gaming "serve[d] to establish an overall sensibility of creative endeavor rather than destructive confrontation" (Woods 2012, 104). If it is a Eurogame, then, *Archipelago* must be seen as highly subversive of the form. In many ways it is a modern hybrid game that sees a convergence of Ameritrash's rich themes, lush aesthetics and confrontational nature, combined with the Eurogame's rigorous design, lack of chance and abstracted forms of indirect conflict. But rather than the two forms working together in harmony, the two essentially antithetical genres productively destabilize one another.

Bogost argues that game systems can create a simulation fever in the player by "oscillat[ing] uncertainly between… two rhetorics, uncomfortably positing one against the other" (2010, 274). Like Brecht's notion of alienation, this simulation fever forces the active engagement of the player and inspires critical thought. Thus, in *Archipelago* the residual German origins of the *Gesellschaftspiele* jar with the notion of conflict freshly imported from American style games. As Heli's words above suggest, the foundations of the Eurogame self-image is fundamentally one of a highly civilized form that rejects violence, which links it to the enlightened colonial self-image of the civilizing mission, a form of cultural superiority that acted as an engine to colonialism (Osterhammel 2005, 16).

This is defined by Pratt as a form of 'anti-conquest', a hypocritical ideological sleight of hand in which, "the strategies of representation whereby European bourgeois subjects seek to secure their innocence in the same moment as they assert European hegemony" (Pratt 1992, 7). *Archipelago* thus muddies the waters of the Eurogame by emphasizing in its mechanics the destructive confrontation inherent in colonialism, but forever denied by its perpetrators, just as this violent encounter is effaced by the Eurogame genre itself, with its emphasis on indirect conflict and personal accumulation. In this contradiction it brings to light this notion of the anti-conquest as an historical alibi. Colonialism may have been driven by the self-serving notion of a civilizing mission, but the underlying mechanisms were brutally exploitative, merely showing this mission to be a flimsy moral pretext for an otherwise indefensible act of domination. The fusion of these two genres thus produce a procedural rhetoric in in the form of a simulation fever, in which mechanics destabilize theme and the 'civilizing' hypocrisy of colonialism is revealed as a sham.

If we accept that the material and technological reality of the media platform is vital to the production of meaning, as both Erll and Bogost argue, then we must acknowledge that the material aspects of boardgames (the tactility of pieces, the aesthetics of the tiles and cards, and the construction of the board) plays a similarly vital role in the experience of play. A case in point in *Archipelago* is the player screen, which serves to conceal the player's carefully hoarded riches, creating a dynamic of uncertainty that builds on that promoted by the threat of the separatist.

Although the flimsiness of the player screen can be seen as a shortcoming in production, especially in light of the high quality of the rest of the game, it can also be seen an extension of the game's already manipulative design, simulating in the players the behaviors of

covetousness and suspicion. Human centered designer Donald Norman calls these designed qualities of objects affordances, properties of the object that allow and invite certain uses but not others, and sees such objects as part of, "complex sociotechnical systems." Or perhaps it can be considered more of an "anti-affordance," something that specifically forbids or prohibits a certain action (Norman 2015). Actually, the player screen exists somewhere between the two, affording players a way to hide their resources, but making it difficult to do so successfully in such a dynamic social environment, where players are constantly reaching over the table. Players eager to keep their resources secret from their opponents must zealously guard their space, whilst being constantly alert to fluctuations in their opponent's play areas. To consider the metaphoric as well as the procedural and material dimension of the screen, one might also reflect on it as embodying the thin veil between imperial notions of respectability in the Victorian metropole and the unethically obtained wealth from the periphery that underpins it.

The tactile nature of the player screen, and its role in the bluffing and shielding of resources, speaks to the absolute necessity of the game being played in a collocated physical space. Woods echoes the thoughts of many gamers, who continue to meet and play games in person rather than concede to the convenience and cost saving of virtual platforms, when he places the social element as an essential part of the act of play: "the very act of sitting together to engage in competitive play establishes as a framework for social interaction that can never be entirely separate from the play of the game itself" (2012, 206). Incidentally, Bogost also identifies a strong social element to procedural rhetoric, which extends into the community beyond the game object: "Procedural rhetoric exposes the way things work, but reflection creates and prolongs this process" (Bogost 2010, 334). The simulation fever that Bogost identifies as essential to criticality is thus often a shared experience that expands into the surrounding social

discourse and is worked through as a social group within the sphere of the gaming encounter acting as a kind of microcosm of Pratt's contact zone.

Decolonizing the Author

Thinking about the boardgame as such a safely contained contact zone, a space in which players subjectivities clash within the magic circle of the game, helps us to see it as an opportunity to collectively work through aspects of cultural memory in a safely cordoned off space. One such subjectivity players will inevitably grapple with in their encounter with the game is that of the designer. The notion of the auteur as the "distinguishable personality" and as a "criterion of value" to the work (Sarris 2009) has become an ingrained aspect of the hobby in recent years. More so than video games, boardgames are understood as the works of individual creators with a high degree of freedom and a recognizable style or set of thematic and mechanical concerns. Designers like Stefan Feld or Uwe Rosenberg are featured prominently on boxes and treated as important selling points by publishers and players alike.

Christophe Boelinger, the designer of *Archipelago*, has been known to chime into fan discussions on the forums at *BoardGameGeek*, and in one such insertion into a debate about whether Archipelago was problematic, shared his intentions behind his depiction of colonialism. Boelinger sees the condition of colonialism as inevitable because, "expanding is human nature," but the incalculable suffering that was caused in the process could have been avoided if we (the Europeans he speaks for) had only, "done that in a nice and gentle way, instead of using slavery and barbarism and trying to make a maximum profit without regarding anything else..." (Boelinger, 2012). Such a stance is further struck in the rulebook, which encourages players to treat the natives "fairly":

A balance must be found between expansionism and humanism, between commercial goals and respect for local values, between knowledge sharing and unbridled industrialism. Such balance can only be achieved through each player's commitment to make the *Archipelago* a happy and productive colony. (Ludically, 2012)

Indeed, his final assessment of the game's procedural rhetoric was, "to teach a peace [sic] and sharing culture feeling [rather] than to encourage racism and slavery!!!" (Boelinger, 2012) Despite the designer's intended message differing vastly from the procedural rhetoric discussed in this chapter, this need not undermine my thesis.

Whilst poststructuralists like Barthes and Foucault have influentially argued, the author should not be considered the font of all meaning for a work (Barthes 1993; Foucault 1998). Rather than efface the author's intent altogether, it might be valuable to consider it as yet another voice of the contact zone; a modern-day remnant of the kind of colonial ideology analyzed by Pratt in the form of the travel writer and naturalist, who infamously enacted a kind of anti-conquest by constantly asserting their own innocence and neutrality from the events observed and described. By stubbornly focusing on the flora and fauna, the good naturalist was able to overlook any trauma and not take any culpability for it, whilst simultaneously participating in and paving the way for the colonial programme of expansion. Just so the designer (and to some extent the player, if they adopt an uncritical position) is able to overlook the thematic problem of the natives, provided they are sufficiently hidden in the undergrowth of the game's abstracted mechanics.

Boelinger likely is sincere in his desire to see native populations treated fairly (he at least acknowledges the brutality in which colonialism was carried out), but his belief that this can

be accommodated by any form of colonialism (and particularly the form portrayed by the game) represents an uncritical internalization of a specific, romanticized cultural memory of imperial history. *Archipelago* is clearly not enforcing hegemony in as overt a sense as a text of the actual colonialist era might, but this rather naïve 'what if' scenario is drawing on residual traditions that attempt to portray a certain ideal of colonialism as progressive; an inheritor of the kind of ideal of colonialism observed by Pratt in her survey of imperial travel fiction, even if the lived/played experience of it is anything but.

The language of awkward binaries used in the rulebook, in which a balance is to be supposedly found between the wildly antithetical positions of 'commercial goals' and 'respect for local values,' enacts a rhetoric of balance that tallies with the central concern of balance in the design of Eurogames. As noted earlier, Eurogames minimize chance in favor of strategy, and operate on the assumption of skillful play and the necessity of a balanced experience, even if this sense of balance is anathema to the theme of the game. So long as games like *Archipelago* priorities balance as an ultimate ideal of game design on an abstract systems level, they risk proposing that the systems they procedurally represent in reality also possess such an inherent fairness, but as Celia Pearce has shown from her analysis and reworking of *Monopoly* (Pearce in Flanagan & Nissenbaum 2014), this is far from the case. Unlike the boardgame, colonialism didn't take place on a level playing field. Perhaps ultimately Boelinger's words can thus be contextualized as those of a designer, concerned with the balance of systems at the cost of the narrative those systems underpin.

The popularity of colonialism as a theme in boardgames perhaps reflects a significant social anxiety around the modern globalized, multicultural world order. Indeed, Mukherjee sees this trend as, "symptomatic of the ambiguity with which contemporary (particularly Western)

society views the imperialist system" (Mukherjee, 2017,30), an ambiguity that is readily apparent in Boelinger's statement. Much as Pratt colors the European attitudes towards the colonies as a form of nostalgic pastoralism in a period of profound social and economic change (i.e., Industrialization), digital natives perhaps find something attractively escapist in boardgames; a premodern fantasy of un-networked, analogue and collocated social interaction within a highly technologically dependent, globalized world (Dyer-Witheford and de Peuter, 2009).

Boardgames, and their designers, also find in colonialism's process of empire building the ideal canvas to explore their central mechanical concerns of strategic resource management and the building and maintenance of efficiency engines, whilst being ill equipped or reluctant to confront the inconvenient issues of the fates of the aboriginal inhabitants or the unpalatable brutality of the system. As with the colonial bureaucracy, building an efficiency engine is a core aspect of boardgame play, and depoliticizing or dehumanizing game themes to abstract administrative tasks, just as colonial bureaucracy sought to, "reduce all human affairs to questions of 'paper administration,'" (2005, 111) can be seen as a key strategy for sidestepping claims of political insensitivity. Such abstractions and erasures must be avoided if meaningful debate is to occur.

Conclusion

Archipelago, like all games, is a somewhat abstracted representation of its real-world referent; an aspect of games Bogost refers to as the simulation gap (2010, 43). But as a text that draws on traumatic historical events, what it says is important. It assembles and perpetuates certain elements of a shared cultural memory about colonialism and the golden age of discovery as a series of romanticized tropes, which leads to Boelinger's somewhat paradoxical statement of a

'friendly colonialism'. This is a game about players in western Europe, the places where such games are predominantly designed and consumed, confronting the machinations of their country's colonial past, or rather the cultural memory of it (Erll 2011).

However, on the level of procedural rhetoric, the simulation gap here also opens a productive tension between the ostensible humanitarian mission of colonialism and its brutally contradictory lived reality that undercuts the designer's stated aims. The player behaviors modelled by the game's systems (greed, suspicion, betrayal, secrecy) potentially force a critical attitude to the theme along the lines of Bogost's simulation fever; an attitude far removed from the notions of peaceful cohabitation, respect and balance the game's motivational text encourages. Whilst the rational, strategic elements of the game so typical of the Eurogame genre might stand to represent the idealized self-image of the European colonial enterprise, as an act of bringing order to chaos, the violent and chaotic elements typical of the Ameritrash genre violently undermine these ambitions, revealing them to be hollow and hypocritical.

Boelinger's own attempt to color his game with positivity embodies the exact impulse of the colonial rulers to instill a system of dominance that benefited them, whilst rhetorically suggesting that they were saving the native populace – what Pratt refers to as the self-justifying 'anti conquest'. Indeed, that the game's systems themselves, when analyzed through the lens of procedural rhetoric, seem to tell such a different story to the author's stated intent can be seen to mirror the contradictions between the stated aims and political realities of the colonial project itself. This is testament to how political realities can seep through even the most ardent attempts for ideology to paint over the cracks of history (Barthes, 2009).

This wouldn't be so much of an issue if colonialism was dead and buried, but as Loomba noted in our opening, its legacy continues in the form of the neo-colonial globalized world order. Here a similarly overt humanitarian aim (bringing economic development to the world), masks a brutal reality in which western multinational corporations, unfettered by regulation, exploit the asymmetrical relations of power to take advantage of cheap labor, lax environmental and labor laws, and unevenly distributed resources of the world (Hardt & Negri, 2001). Just as in the colonial period, the periphery is left to create the wealth and products that flow inexorably into the Western metropoles. It seems, then, that the nature of the messages expressed by games like *Archipelago*, rather than some dry and irrelevant historical commentary, are as relevant as ever and must be critically exposed.

The strength of Pratt's notion of the contact zone is that it not only influences the culture of the native, but influences European consciousness in turn: "borders and all, the entity called Europe was constructed from the outside in as much as from the inside out" (Pratt 1992, 6). It is on the table top that the system of colonialism plays out through a procedural rhetoric within a contact zone where the subjectivities of the players clash with one another and that of the designer. It is the physical and metaphorical site in which the process of colonization, embodied in the rules and systems of the game, encounters and transforms the colonial subject. In this contact zone players, acting as colonists but also potentially as natives, must negotiate their responses to the game's themes within a wider social context as a form of transculturation.

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Playing games, splitting selves

C. Thi Nguyen

The phenomenon of social game playing highlights a remarkable human capacity. Game players can sometimes manipulate their psychology and their phenomenal experience of their motivations during gameplay. That is to say, game players can decide to play a game for one purpose, but sometimes need to ignore that larger purpose during the course of actually playing the game. For example: we decide to play a game for mutual pleasure and enjoyment, but in order to achieve that pleasure, we must partially forget about that larger purpose during the course of the game and concentrate, instead, just on beating each other. We must ignore our interest in pleasure to achieve pleasure. Thus, game playing often involves a curious motivational two-step, where the players radically manipulate their motivational state in order to experience the desired experiential states of game playing.

Furthermore, the social experience of boardgaming highlights a peculiar feature of that motivational two-step. In a paradigmatic gaming context, players can run two different motivational sets simultaneously. Game players can be absorbed in competition in a boardgame, while simultaneously engaging in cheerful and entirely non-competitive socializing. The social phenomenology of boardgaming puts in stark relief the complex psychological achievement of some gameplay.

Social competitive and wholly competitive play

For comparison's sake, let's start by considering some less motivationally complex forms of play. In some gaming practices, such as the Olympics, professional e-sports tournaments, and the World Championship of Poker, the players' motivational structure is usually quite

straightforward. The typical player in those contexts is competitive through and through. They want to win because winning itself is valuable in some way.

In other contexts, however, players may have little to no interest in winning at all. A party game, like charades or *Spyfall* (Ushan, CGE 2014), may be happily played even if the players have relatively little interest in winning by the internal standards of the game. If everyone ignores the goals implied by the scoring structure and plays to amuse others, or even chaotically, it is perfectly possible for all to have a good time.

But for the practice of social competitive gaming, the motivational structure is significantly more complicated. Here, I mean the practice of playing games with friends and family, where we decide to play the game for some social reason – fun, passing time together, breaking the ice – rather than primarily as a vehicle to winning. Many games, I think, are made primarily for the purpose of fulfilling this practice – party games, many family boardgames and Eurogames. But different games can be played in different ways. Limit poker, for example, can be played in some contexts as deadly serious and wholly competitive affairs – at high-stakes casinos and at the World Championship of Poker. It can also be played entirely social reasons, as friends might play poker for pocket change, while drinking heavily and teasing each other. Many sports are also played flexibly. Basketball is played in deadly seriousness in the professional, collegiate, and varsity level, but can also be played for social reasons between friends and family.

In the social competitive gaming practice, we may not actually care about winning in any particularly lasting or resonant way, but we need to try to win to access what we value about a game. It will be helpful here to first distinguish between the *goal* we pursue in the game and our *purpose* for playing the game. Sometimes those are very similar: the professional poker player wants money. Money is both the goal they pursue in the game and their overall purpose

for taking up the activity. But many game players have a different motivational structure: their goal in playing is *winning*, but their purpose for playing is something else. Perhaps it's having fun, or exploring an interesting design — perhaps it's even a pursuit of an aesthetic experience of play. I will argue that, in some cases, game players must partially forget that our purpose is having fun in order to have fun. Players need to devote themselves to winning in order to reap the various experiential rewards of the game, even if they don't particularly care, in any enduring sense, about winning. Players submerge themselves in alternate and temporary interests.

Think of the mood in a typical boardgame night, where friends come over and settle in for a playful night of strategy boardgaming. Let's start with some theoretical idealizations. Let's say, for the moment, that the goal in such a setting is *collective enjoyment*. (The actual motives for social competitive gaming are far more varied than that phrase might imply.) This motivational state is quite different from what we might call *wholly competitive gameplay.* When a player engages in wholly competitive play in a *Chess* or a *Magic: The Gathering* (*M:tG*) (Garfield, Wizards of the Coast 1993) tournament, they may not be concerned with their own enjoyment — they may simply wish to win for the status, the accomplishment, or the money. Even if the player is entirely in it for their own enjoyment, they may not be particularly concerned with their opponent's enjoyment. But in social competitive gaming, players adopt the goal of winning for the purpose of collective enjoyment.

Note that social competitive gaming and wholly competitive gaming are categories of motivational states and not categories of games. It's perfectly possible to play *M:tG* with a social competitive or a wholly competitive motivation, and perfectly possible to show up to a chess tournament with a social competitive motivational state, or play in a boardgame night with friends in a wholly competitive manner. Furthermore, this distinction is not intended as a

pair of binary and exclusive categories, but rather the theoretical endpoints on a continuum of possible motivational states. It is certainly possible to be partially interested in both collective enjoyment and winning, but the states are conceptually separable.

Moreover, these play states are linked (though not with the force of conceptual necessity) to certain social practices. Contexts like game tournaments seem intuitively linked to wholly competitive gaming. If I go to a *M:tG* tournament, and somebody asks me how it went, I'd respond with a description of how well I did: I'd be happy if I placed well, and unhappy if was defeated early. But if somebody asked me how last night went, when I had some friends over to play the new Reiner Knizia game, my positive or negative response would typically track a number of factors to which achievement was largely irrelevant. I might report that it went well because we all had a great time, or that it went badly because one player behaved belligerently and disrupted game-play for everybody else. I might even immediately start talking about what a good game design it was, and how interesting people thought the play was. But for the usual practice of social board gaming, it would seem quite strange, and even fairly childish, to hinge my view of the success of the board game night simply on how well I did.

Conversely, social competitive boardgaming is more competitively involved than other gaming practices, like those we might call party gaming. Party gaming requires no competitive impulse at all. When we play, for example, charades or *Spyfall*, it's not requisite that the players try to compete. A player acting erratically from the ludic standpoint — that is, not trying to win by internal standards of the game — does not thereby ruin the game. If most of the players simply try to amuse each other or act goofily, the activity might still succeed. Consider, for example, designer Douglas Wilson's description of the design and intent of the video game *WarioWare: Smooth Moves* (Intelligent Systems, Nintendo 2006).

> *Smooth Moves* features a collection of zany "micro-games" that only last a couple of seconds… None of these micro-games would work very well individually. Rather, they work together in series, synergistically…. The focus is shifted away from the game-delineated reward system of winning and losing, towards the human beings performing and willfully making fools of themselves. (Wilson 2011)

Party game designs like *Cards Against Humanity* seem like the board game and tabletop equivalent of micro-game style compilations such as this. In *Cards Against Humanity* (Dillon et al. Cards Against Humanity, 2009)*, Apples to Apples* (Kirby & Osterhaus, Mattel 1999)*, Funemployed* (Conta, IronWall Games 2014), and similar games, points are scored by a rotating judge's decision about which entry is funniest. Such a scoring standard is blatantly arbitrary, and, like *Smooth Moves*, weighs against the players' making against any significant emotional investment in in-game success. As Wilson (2011) comments, "…Because *Smooth Moves* fires off these micro-games at such a manic pace, it is difficult to get too emotionally invested in any one challenge." The patently arbitrary judging seems to play the same role in defusing highly competitive state. The best implementation, to my own taste, is the earlier and lesser-known game *Why Did the Chicken?* (Heath, Play Again Games 2004), in which a judge randomly generates through card draw a joke-type. For example, the judge might first draw the joke format card, "What do you get when you cross a _____ with a _____", and then the noun cards, "cookbook" and "lawyer". The rest of the players have exactly two minutes to generate as many punchlines as possible. The judge then reads all the proposed punch lines aloud and picks what they judge to be the two funniest, awards the authoring players each a point. The role of judge rotates between each round. Once again there is a scoring system which incentivizes the players to play to each particular judge's sense of humor, but players can ignore this and follow their own sense of humor, or play to the crowd instead of the judge. All of these

strategies result in amusement. Failure to compete by the in-game standards does not block the collective enjoyment engendered by the game.

In social competitive gaming, however, things are different. For most strategy board games, the players genuine attempts to win are required for the activity to come off. It is the very competition itself, as structured by the game design, that is enjoyable. Usefully, Bernard Suits distinguishes between two ways to fail to properly participate in a ludic activity: cheating and trifling. A cheat breaks the rules on the way to the in-game goal. A trifler doesn't even pursue the in-game goal. Consider, says Suits, somebody moving the pieces of *Chess* around by the rules, but only interested in making pretty patterns (Suits 2005, 57-60). They are a trifler; such a player makes the various specific pleasures and enjoyments of chess impossible for their opponent. A cheat, on the other hand, may unfairly beat their opponent, but the cheat is still participating in some sense in the game of chess. Their opponent can take part in the various specific pleasures of *Chess*-play.

Note that trifling, as we've seen, isn't a problem in party gaming. But trifling is a significant problem for social competitive gaming, which reveals something important about the nature of the activity. First, social competitive gaming requires that the players act as if they were interested in winning or else the desired game-experience doesn't come off. Second, social competitive gaming often goes better if the players are emotionally invested in winning for the course of the game, even if they don't, globally, value the win. The desired motivational state in much social competitive gaming, then, is an interesting middle-ground. It's possible to miss this motivational state in two ways: one can play the game too seriously or not seriously enough. Notice that for, say, Olympic sports, it's easy to imagine how one might trifle with the game, but hard to imagine how one might be faulted for taking the game too seriously. With charades and other party games, it's the other way around. Each of wholly competitive game play and party game play only have one of these modes of failure; social competitive game

play has both. Why, then, does social competitive game play have both failure modes, and what sets those standards?

Two motivations for play

Let's give a more complete picture of the motivational complexity of game-play. This is a fairly complicated story. The best place to start is Bernard Suits' analysis of game playing. The "portable version" of his account is this:

> …Playing a game is the voluntary attempt to overcome unnecessary obstacles. (Suits 2005, 55)

In other words, we don't play basketball in order to get the ball through the hoop. We take up the activity of trying to get the ball through the hoop, and the various restrictions of basketball – the dribbling rule, the opponents – in order to create the activity of playing basketball.

Games, in Suits' analysis, are a complicated motivational structure. Here's a bit of a simplification: in normal practical life, we take the means for the sake of the end. We undertake this journey to get to this independently valuable destination. But in gaming activity, we take up the ends for the sake of the means. We take up this artificial destination, which is not valuable for its own sake, and we take up artificial restrictions on how we get there in order to create the activity of struggling to get there. In a marathon, for example, we typically do not care about being the particular spot designated as the finish line. We proceed to forbid ourselves from taking the most efficient means there – we forbid ourselves shortcuts and taxis. We do all of this in order to shape the particular struggle, the form of activity, which is *running a marathon*. Games, then, are something of a motivational inversion.

Suits offers a more technical version of his thesis. First, any game has *pre-lusory goals*. A pre-lusory goal is the description of some state of affairs that players pursue in the game, described without reference to any of the constraining rules of the game. For example, the pre-lusory goal of basketball is passing a ball through a particular hoop. Then, the game offers *constitutive rules*, which place constraints on the player, specifying the means they can make use of the game. In basketball, the constitutive rules are, for example: that one can only move while dribbling, that one must have opponents on the court, that one cannot kick or punch those opponents. This allows us to specify the *lusory goal*, which is achieving the pre-lusory goal via the constitutive rules. The lusory goal of basketball is "making a basket", which is conceptually distinct from passing the ball through the hoop. One only makes a basket when one passes the ball through the hoop while playing within the rules. It doesn't count to come to an empty basketball court with a ladder and pass the ball through the hoop; nor does it count if one knifes one's opponents and then makes baskets over their bleeding bodies. Finally, a player must have the *lusory attitude* — that is, they must take up the pre-lusory goal and the constitutive rules for the sake of the activity it makes possible (Suits 37-56). In short, one doesn't play basketball in order to get the ball through the hoop. One acquires an interest in passing the ball through the hoop in order to engage in the activity of playing basketball.

Suits has often been criticized for offering an incomplete account of game-play. I have argued elsewhere that there are at least two ways of playing a game — Suitsian play, and make-believe play. Many forms obstacle-oriented game-play are precisely described by Suits' account, but other kinds of game-play, such as children playing House, are best described as acts of imaginative make-believe. And that many forms of gameplay are hybrids of the two — like, for most people, tabletop *Dungeons & Dragons* (Nguyen forthcoming b). This may remind some readers of Roger Caillois' view of the plurality of modes of play. I take my view here to be a defense, using contemporary aesthetic theory, of Caillois' pluralism. A bit of backstory:

some key early accounts of gameplaying attempted to offer a singular and unified account of playing. Most famously, Johan Huizinga argued that all play shared one common characteristic: it occurred in a 'magic circle', separated from normal life (Huizinga 1955; Stenros 2012). Caillois argues, against this unifying tendency, for a plurality of play forms. Caillois suggests that there are at least four: *agon*, the play of competition; *alea*, the play of chance; *mimicry*, the play of make-believe; and *ilinx*, the play of vertigo (Caillois 1961). Children's games of make-believe, for example, are not competitive, they are collaborative storytelling. Similarly, children spinning around, or adults going on roller coasters, is neither competitive, nor does it mimic anything.

I do not take Suit's account to be a complete one for all game-play. There are many different kinds of play, and none of them are entirely reducible to one another. But, unlike some other theorists (Upton 2015, 16; Juul 2006), I do not take this plurality be a reason to discard Suits' account entirely. Suits' account turns out to be a very good account of one specific type of play — obstacle-oriented play – and we should treat Suits' account as delineating one specific type of play among many.

But notice that merely because a form of gameplay is obstacle-oriented doesn't mean that the value comes from actually overcoming those obstacles. Suits' definition only requires that a player take up the goals and rules of the game to make the activity possible. He does not specify why the player is interested in making the activity possible. This is by design; the account is compatible with taking up the game in order to win at the game, or taking up the game and the interest in winning, for, say, pleasure. Suits wants to account for both casual and professional play (Suits 2005, 132-5).

Let's distinguish between two sorts of Suitsian play. We can play games for the sake of winning Let's call that *achievement play*. People who play games for the money or honor that results from winning are achievement players, as are people who play simply to win, full stop. On the other hand, some people take up an interest in winning for the sake of the activity of struggling for the win. (Let's call that *striving play*). People who play games for the sake of fitness, the therapeutic effects of the focus, or simply for the experience of the struggle, are involved in striving play. Notice, also, that the distinction between achievement and striving play is not the same as the distinction between intrinsic and extrinsic value. Achievement and striving play are two different locations in the game where value may accrue. That value may be intrinsic or extrinsic. If I play simply for the sake of winning itself, I am an intrinsic achievement player. If I play for the sake of the money that follows from winning, I am an extrinsic achievement player. If I play for the fitness that results from the struggle, I am an extrinsic striving player. If I play for the sheer value of struggling itself, I am an intrinsic striving player.

This analysis widens the space of possible reasons we might play games. Thomas Hurka has argued that the primary value of games arises from the difficulty and complexity of the tasks we overcome (Hurka 2006, 221). Jesper Juul, similarly, has argued that the reason we take up difficulties, and so court failure, in games is for the achievement of overcoming those obstacles (Juul 2013, 1-66). But both of these arguments presume that achievement play is the only sort of motivational state available. They leave out the possibility of the motivational inversion of striving play. This account of striving play stands in stark contrast to a standard view from the philosophy of sport, which is that the value of playing games comes primarily from the value of things like developing personal excellence, displaying personal excellence, or other skill-based achievements (d'Agostino 1981; Russell 2004; Simon 2014, 2000; Kretchmar 2005; Nguyen 2017a). I've argued, instead, for pluralism about game-playing motivations: one can

pursue achievement for its own sake, or take up a temporary interest in achievement for the sake of the activity of struggling.

But why think that striving play is even possible? Let me give a few brief arguments. Social competitive gaming, in particular, highlights the normality of striving play. First, consider the social circumstances of much board gaming. Many times, the players are socially fixed – we are frequently playing with the same people. Suppose, for example, that my wife and I discover a new game that we very much like, and we happen to be evenly matched. The games are exciting, tense, and interesting. I, scrolling through the *BoardGameGeek*, discover an excellent-looking strategy guide. I could read it, rise in skill, and proceed to win every time against my wife. She would never read it — she doesn't have the time for that kind of thing. But she'd keep playing, even if I won all the time — she's good-hearted that way. If one thought that achievement play was the only legitimate kind of play, one would think that the only reasonable thing to do in this case, all else held equal, was to read the strategy guide and become more skilled and win more often. But it seems utterly reasonable to do the opposite: to avoid the strategy guide, precisely because it would reduce the excitement and interestingness of our gameplay. And one could avoid the strategy guide for two reasons: either to selfishly maximize one's own enjoyment of the game by manipulating the level of challenge for maximum enjoyment, or to unselfishly maximize mutual pleasure. In either case, the only explanation for the one's reasonably avoiding improvement in skill is that achievement play is not the sole correct motivational state for play — striving play must be a possibility. When I avoid reading the strategy guide, I must be aiming, not at maximizing my own wins, but at certain experiential qualities of struggling to win.

Notice that this explains a particular puzzle about the nature of competition in gameplaying. Social competitive gaming can be a very curious phenomenon: it seems, for so many games,

that the players have to try to beat each other to have fun. In competing in this very specific context, the players are also doing something together — they're trying to have a good time by playing a game. But the cooperative act of having an enjoyable game requires that they genuinely compete while in the midst of the game. Imagine if, after a hard-fought game, I find out that, rather than trying to win, all the other players had been going easy on me and quietly manipulating the game by texting each other in order to show me a particularly good time for my birthday. I would be disappointed; I am disappointed precisely because the experience I want is one of struggling in a competitive state. Such potential disappointment is characteristic of social competitive game play; the possibility of such disappointment shows that the players are, in fact, in it for the experience of struggling in competition.

But how is this peculiar nested motivational structure even possible? The story of striving play we've seen above gives us an answer. Our interest in winning is temporary, not enduring or deep. It is acquired temporarily, for the sake of the experience of a struggle. When others oppose us inside a game, they are actually helping us achieve the experience we wish. They are cooperating with us *by* competing with us inside a structured environment, designed to provide specific types of desirable experiences of struggling. Games can thus effect a moral transformation. In a game context, hostile acts can become transformed into something positive — variously, into fun, entertainment, catharsis, training, or various aesthetic qualities. Social competitive gaming is a paradigmatic example of such a transformation. We're having fun precisely by competing with each other.

Notice some details of this account. First, the transformation of competition into cooperation isn't automatic, nor is it guaranteed merely by the fact that we're playing a game. It is dependent on *structural features* of the game design and the particular playing context. This structural account of transformation here is significantly different from some other accounts of

the strange moral status of competitive game-play. First, consider Steven Weimer's consent-based account of gaming morality (Weimer 2012). Weimer argues that oppositional behavior in games — like, say, punching your boxing opponent — is good, precisely because the opponents have consented to play the game, in pursuit of some other goal. (Weimer suggests that the other goal is, in fact, developing our skills and excellences). Two opponent boxers, then, are engaged in a sort of trade — we each want somebody to fight us in order that we may improve our skills, so we agree to fight each other. We've formed a miniature social contract. Thus, says Weimer, during a game we're each *obligated* to strike the other, since we've agreed to expend the effort as part of this trade. When one of us strikes the other, we're doing something that is, in fact, good — we are discharging our obligations. The difference between the structural account presented above and Weimer's is in the variability of moral transformation. If Weimer's view is right, then the transformation should be the same in any and all situations of game playing. If the structural account is right, then the transformation should vary, depending on what and how we play. The transformation of competition into cooperation then depends on the actual achievement of a desirable experience of struggling. And that will only happen if a number of factors align, beyond merely the players having consented to the game. The players must be appropriately matched in skill, they must be trying appropriately hard, and the game must be a good fit for them.

The structural account of transformation also differs significantly from what's been called the magic circle view. The magic circle view arises from Johan Huizinga's suggestion that there is a specially bounded space of play, which is morally separated from normal life (Huizinga 1955). In the most radical interpretation of the magic circle view, actions committed inside the magic circle of play cannot have any moral weight outside the circle. But notice that there is no such morally impermeable boundary in my view. Striving play can *transform* the moral valence of in-game actions, but they do not put those actions outside the realm of morality. In-

game actions are still knit into the moral fabric of the rest of life; they are just sometimes morally altered. The structural account doesn't relieve in-game actions of their moral load; it merely reverses the moral valence in the right circumstances. This means that a player can be morally blameworthy for failing to properly compete, because it actually counts as a failure to cooperate. A simple example: if you have driven a long distance in hopes of having a good exciting game of a profoundly competitive game, like *Android: Netrunner* (Garfield & Litzsinger, Fantasy Flight Games 2012), and I spend the entire evening texting with people on my phone and playing listlessly, I have failed to do something that could have been good; I have failed in my social obligation to you to give you a good game.

So: striving play makes possible the transformation from competition into cooperation. This explains how social competitive game playing can work and also explains the peculiar relationship of competition to fun and enjoyment in social competitive game playing. And it gives us the basis to make our first stab at our guiding question. What is it to play too seriously and what is it to play not seriously enough? What sets the sweet spot in the middle? The answer is going to be: the sweet spot is the spot where competition does actually result in a desirable experiences of struggle. Where is that sweet spot exactly? That can't be answered a priori — it'll be a context-sensitive matter dependent on the exact psychologies and interests of the players. Some players may most enjoy brutal, all-out, take-no-prisoners competition. Some players may most enjoy a more genteel and forgiving style of play. But this analysis offers two prescriptions. First, unlike the simple version of the magic circle theory, merely the fact that we are playing a game doesn't offer a perfect, blank-check moral excuse. One might be blameworthy for seeking out bad players to crush and humiliate, if one knew that the process wouldn't give them their desired experience of striving. Similarly, failing to attempt to provide the kind of play suited to the other players is in fact blameworthy. But notice that the failure can go in both directions. Failing to be appropriately genteel in with fearful novices is one kind

of failure, but failure to be appropriately brutal in a game where the players are in it for the harsh competition is another sort of failure.

Second, note that successful transformation depends on a number of delicate, context-sensitive matters. What this analysis reveals is that getting players who have similar and aligned interests in the type of struggle is, in fact, a morally laudable activity. It may be a relatively minor one in the scope of moral affairs, but it is not outside of moral consideration.

The peculiar experience of social board gaming

We've learned that we have one peculiar capacity — to submerge ourselves in a temporary alternate practical identity. This is a capacity that's exercised in many forms of striving game-play. But the particular social circumstance of board-game play exposes another capacity of us, as complex agents. We can run multiple practical identities in parallel — we can not only create an alternate practical identity for the sake of the game, but we can run it in parallel with our standard identity. Take, for example, the simple practice of table chatter during a boardgame.

First, the practice of table-chatter is necessarily confined to boardgaming. Similar chatter in multiplayer videogames, particularly when the players are physically present with each other, as in classic local multiplayer games like *Super Mario Kart* (Nintendo EAD, Nintendo 1992) and *Super Smash Bros. Melee* (HA Laboratory, Nintendo 2001). But the phenomenon seems most common in multiplayer strategy boardgames: A bunch of players will sit down to a strategy boardgame. Suppose the game is not of party game variety — the various intricate mechanisms and rules of the game seem built for competitive, strategically absorbed play. Let's say it is a typical heavy strategy Eurogame, like, say, *Brass* (Wallace, Warfrog Games 2007), *Agricola* (Uwe, Lookout Games 2007) or *Hansa Teutonica* (Steding, Argentum Verlag 2009). Some groups will play in total silence, heads down, absorbed in the intricacies of strategy.

Other groups will engage in table talk of various sorts. Some table talk is clearly part of the competition of the game — trying to sway each other's actions, either by explicit in-game negotiation rules or simply freely. Let's call that intra-game table talk. One sort of intra-game table talk is *interference trash talk* — that is, various forms of insult or criticism meant to humiliate, embarrass, distract, deceive, or otherwise interfere with the quality of another player's play. I'll leave intra-game table talk largely to the side for the remainder of this chapter, because the phenomenon doesn't illustrate the motivational complexity this chapter seeks to analyze.

Players also engage in extra-game table talk. This comes in a number of varieties, including:

Game-irrelevant talk: Players discussing topics disconnected from the game — their social or professional lives, the news of the day, etc.

Game-commentary talk: Players discussing aspects of the game without competitive intent — noting good or bad moves in this playing of the game, discussing strategic considerations emerging in a new game, evaluating game design.

Role-playing talk: Players spontaneously role-playing elements of the game, such as acting out elements of the imaginary lives of the playing pieces.

Playful trash talk: Players engaging in various forms of insult and criticism meant to increase the collective enjoyment of the game.

All of these forms of extra-game table talk should be very interesting to us, because they are another way we pursue collective enjoyment. This is most obvious with game-irrelevant talk and game-commentary talk. We gossip pleasantly about our work day, we engage in the enjoyable activity of collectively appreciating game design or each other's excellent moves. Notice that what's happening with such extra-game table talk: we are simultaneously pursuing

collective enjoyment through both direct and indirect cooperation. We are pursuing collective enjoyment indirectly by engaging in the competitive game itself: we are trying to beat each other in order to have a good time together. We are indirectly cooperating by competing in the game. And, simultaneously, we are pursuing collective enjoyment by directly cooperating to have a pleasant social exchange.

This shows us how psychologically complicated gameplay can be. Extra-game table talk is done, not in the temporary practical identity of the game, but in our ordinary practical identity. Thus, the existence of table talk shows that we can flit easily between our various practical identities — submerging ourselves in our temporary competitive practical identity for a while, and then popping out to make a friendly social comment. But notice that the right story here isn't simply that we can *alternate* between these practical identities. We must be able to run them simultaneously, or so practically close as to make no difference. I take it that an ideal player for social competitive board gaming is capable of *noticing*, during competition, any relevant extra-competitive social consideration. For example, if another player becomes utterly miserable during the game, I can (and ought to) notice and address their misery in some extra-game way. Perhaps they need an ibuprofen for their headache; perhaps they are despondent over their love life and the game ought to be suspended. But the fact that I can treat a fellow player straightforwardly and non-competitively as a friend, while simultaneously competing on the board, shows that both these practical identities can be inhabited simultaneously. Otherwise it would be impossible for my observation of my friend's misery to penetrate and interrupt my competitive attitude. Similarly, I may be sympathetic to my friend's various emotional difficulties, but I undermine our collective activity of enjoyable competition if I throw the game to make them feel better.

Notice that the structural moral transformation that applies to in-game actions doesn't necessarily apply to trash talk. In a competitive game, I can unleash essentially unlimited competitiveness and in-game aggression, and trust that the game's transformational capacities will turn it, in the right circumstances, into mutual pleasure. I can find the harshest maneuvers, take the most aggressive line of attack. The rules of normal socializing are relieved. But for trash-talk, that doesn't apply. For trash-talk to be morally acceptable, it has to be guided by the subtle moral and social norms of non-game life. I can push you, but not too far. I can needle you, but not slam you where you're too sensitive. I need to be watchful, in order to see that I haven't gone too far. I need to adjust my level of aggression and mockery to be in line with my fellow players, and modulate myself accordingly. Pro-social behavior in the game-moves is easy; just try to win. Pro-social behavior in the trash talk that surrounds the game is hard; it is subject to a demand for nuanced social understanding.

There are two primary reasons for this. First, in competitive games, we are usually attacking artificial ends. Since your resources in *Agricola* aren't a part of your lasting self, it doesn't matter if I cannily block you and prevent you from successfully developing your farm. But in trash talking, what we're playing around with is not artificial ends, but with each other's actual egos, self-respect, and with our actual relationships. We are free to be wild and destructive with each other's temporary in-game practical identities, but we must be more careful with each other's actual identities.

Second, game-interaction occurs in a carefully structured environment. Games are designed environments, made specifically to transform competition into cooperation. Trash talk occurs outside that designed environment, in the normal un-designed world, where there is no special social architecture devoted to turning our aggression into mutual pleasure. We trash-talkers must do that for ourselves, by carefully modulating our aggression to produce pleasure. In other

words, in a designed game, the heavy lifting of moral transformation is offloaded to the design of the game. Outside of the game, that heavy lifting is up to us.

Norms of play

So, we've learned something of some interest about the motivational state of gameplaying. Now it may be possible to draw some normative conclusions for ideal social competitive gaming practice that will be more useful than the overly simplistic view that 'anything goes in a game.' First, if the structural view of the transformation of competition into cooperation is correct, then the moral license to compete which we're granted is very specific in the social gaming practice. The transformation only happens if one's opponent actually desires a striving experience, and only if one successfully provides the sort of competition that would create that experience. Suppose that my friend and I have begun a four-hour game of the political war-game *Twilight Struggle* (Gupta & Matthews, GMT Games 2005). Suppose I know the game well and they do not, and I take an early lead and begin to slowly steamroller them, and the process is miserable for them; suppose that they have come to the firm conviction that this sort of game is just not for them, and they have no intention of playing it again. In this case, my account indicates that going on is a bad thing to do on my part. I have a reason to suspend the game. The fact that my friend has consented to a game does not change the fact that they're miserable. The moral status depends, not on consent, but on the quality of their actual experience. Furthermore, I have reason to make sure that the striving experience is actually the players' desired one. This doesn't mean that I ought to, say, go easy on an opponent or regulate the difficulty of my play to meet their skills. As noted earlier, in the practice of social competitive gaming, often a player's interest is in an activity of striving against committed opponents; going easy on them would make that impossible. Instead, this may mean that, in

order to achieve moral transformation, players must engage in careful pre-game choices about which game to play and which opponents to take on.

Notice that this also yields some prescriptions for trash talk. It depends, on whether the trash talk is intra-game or extra-game. If the trash talk is intra-game, then its moral status hinges on whether or not the players and the game are appropriately aligned to create a moral transformation, as I described above. But if the trash-talk is extra-game, then the prescriptions that apply are the normal social ones for any rough jesting talk. We have to make sure that it is, in fact, all in good fun. No special rules about magic circles apply.

Note these consequences are in conflict with several standing accounts concerning the ethics of trash talk from the philosophy of sport. Nicholas Dixon has argued that trash talking is unethical because it is unsportsmanlike, and unsportsmanlike because it fails to achieve the end of promoting physical excellence and achievement (Dixon 2008). Similarly, consider Chuck Summers' defense of trash talk. He argues the trash talk is part of process of the development of excellence and achievement. Specifically, it develops mental toughness and coolness under fire (Summers 2007). Summers may be correct regarding some intra-game trash talk, but his view can't account for the moral status of extra-game trash talk. The problem, again, arises from the presumption that achievement play is the only sort of play. The account presented here offers us a different possibility. If the goal is collective enjoyment, then we're achieving this in two ways — by competing in our temporary practical identities and by simultaneously joking around in our permanent practical identities. Extra-game trash talk doesn't need to be justified in terms of a developmental story. It can simply be part of the complicated, and motivationally layered, process of creating collective enjoyment through social game play.

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Designing Analog Learning Games: Genre Affordances, Limitations, and Multi-Game Approaches

Owen Gottlieb and Ian Schreiber.

Introduction

The *Lost & Found* games series (2017-present) is a product of iterative design of "games for learning." The goals of its design are twofold: design gameplay that promotes the teaching of religious legal systems and make that experience an engaging play and learning experience. The authors are professors of game design and development at the Rochester Institute of Technology (RIT). Owen Gottlieb specializes in games, interactive media, and learning and Ian Schreiber is a game designer from industry. This collaborative project involving faculty at RIT and a number of other universities and dozens of graduate and undergraduate students has produced two tabletop games, *Lost & Found* (a strategy game) (Gottlieb & Schreiber, 2017a), *Lost & Found: Order in the Court – the Party Game* (Gottlieb & Schreiber, 2017b) as well as a digital prototype of the strategy game for the iPhone.

You may be asking, "Why teach games about religious legal systems?" Gottlieb's research and design work includes learning games in the areas of religion and culture, and he set out to develop games that would expand learners' understanding of religion and law. This goal is born out of combination of factors, most prominently, the relationship Gottlieb noticed during research between religious legal systems and game systems – both are rule-based systems. It was also obvious that there is a lack of knowledge in the public about religious legal systems. Though Gottlieb had found Jewish legal systems fascinating in graduate school, he knew that outside of specialized schools, most people knew little about them. At the same time, he watched increasing coverage in the news of "Sharia law" and was dismayed by how little people actually understood about religious legal systems; systems that must be understood in

context. For example, few people understand that religious legal systems have been critical throughout history for promoting what evolutionary biologists and anthropologists call the "prosocial" aspects of religion (Wilson, 2013), such as collaboration and cooperation. Religious legal systems were key for promoting community sustainability and governance, and dealing with tragedy-of-the-commons situations. With the goal of promoting better literacy around these topics, Gottlieb set out to build a team to develop games to address these concerns. Schreiber joined the project soon after Gottlieb arrived at RIT and the two have collaborated closely since.

This chapter explores what we discovered about analog games and game design during the many iterative processes that have led to the *Lost & Found* series, and how we found certain constraints and affordances (that which an artifact assists, promotes or allows) provided by the boardgame genre. Some were counter-intuitive. What choices would allow for the modelling of complex systems, such as legal and economic systems? What choices would allow for gameplay within the time of a class-period? What mechanics could promote discussions of tradeoff decisions? If players are expending too much cognition on arithmetic strategizing, could it alter the characteristics of those trade-off discussions? Could the designers devise a game system that promoted consideration not just of the difficult decisions made in a community that has to balance the needs of the community with individualized needs, but could they help find a way for students to discuss legal reasoning as well? The design examples in this chapter provide a case study in the exploration of these questions as well as the resulting published games.

Game Mechanics, Core Mechanics, and Learning Mechanics

We begin with a few definitions of terms used throughout this chapter. Game mechanics can be defined in a number of ways; here we refer to an action the player takes that has an effect in

the game system. Following Fullerton's definition, core mechanics are "the actions that a player repeats most often while striving to achieve the game's overall goal" (Fullerton 2014, 210). Learning mechanics is a term coined by Plass et al. (2011). Plass and colleagues tie core mechanics to desired learning activities in the following way: "Learning mechanics are patterns of behavior or building blocks of learner interactivity which may be a single action or a set of interrelated actions that form the essential learning activity that is repeated throughout the game" (2011, 4). It is this notion of "essential learning activities" that we concentrate on in our investigations with *Lost & Found* in this chapter. Plass and his colleagues further note that designers should ensure that learning mechanics maintain mental effort, but they must not introduce extraneous cognitive load (roughly, how much simultaneous thinking a player has to do) nor unnecessary confounds (such as mechanics in a mathematics game that stresses motor skills over mathematical problem solving). Games and Learning scholars are also aware that games for learning should be wrapped in curriculum such as direct instruction, or discussion to contextualize the gameplay, and reflection of various points of play (see for example, Squire 2010; Bauman & Games 2011). Learning games are to be understood as part of a broader curriculum (Hays 2005; Sitzmann 2011).

Those who are consciously designing game mechanics aligned with essential learning activities have often focused on a disciplinary approach (Barab, Ingram-Goble & Warren 2009). For example, in history games for learning, learners must examine primary sources, hear multiple points of view, and ask challenging questions (Gottlieb 2015, 2016, 2017; Mathews & Squire 2010). In mathematics, learners apply mathematical principles to solving problems, such as in *Noobs vs. Leets* (Plass et al. 2012) in which determining angles in geometrically arranged puzzles helps to free imprisoned allies. In *Environmental Detectives*, learners gather environmental data in the field (Klopfer & Squire 2008).

In the *Lost & Found* series we sought to have players perform trade-off behaviors based on cases generated from cases implied and referenced in religious legal systems, specifically laws relating to torts (damages and liability) regarding lost and found objects. We chose these laws because they include resource management and aspects of cooperative living, suggesting a strong fit with Euro and hobby game mechanics. The games take place in Fustat (Old Cairo) in the 12th Century, where these law codes and texts were written. The look and feel of the games were designed to evoke the cultural milieu of that time. This milieu is important for context as part of curriculum developed for the games. Moore (2014) makes it clear that religion can only be understood in context, and that context is critical for teaching about religion in the public.

Drawing Characteristics and Mechanics from Euro and Hobby Game Genres

For designing *Lost & Found*, we were confronted with the tasks of designing a model that would place players in trade-off decision making and provide adequate systems modelling the laws, set in historical and cultural context. Because games in these genres often use resource advancement and resource circulation systems, mechanics for collaboration, historic themes, and time constraints (which would be important for use in a variety of learning environments), we looked to Eurogames (which include games such as *Catan* (Teuber, KOSMOS 1995), *Carcassonne* (Hans im Glück 2000), *Bohnanza* (Rosenberg, Rio Grande Games 1997), and *Puerto Rico* (Seyfarth, Rio Grande Games 2002)) and the broader Hobby Game genres, including other games such as *Cosmic Encounter* (Eberle et al. Eon Games 1977) and *Pandemic* (Leacock, Z-Man Games 2008).

The term 'Eurogame' as understood by Woods refers to a set of generic characteristics found in post-war, non-direct-confrontational German-style tabletop games which blossomed more widely by the early 2000s (Woods 2012, 78-79). We sought to use particular characteristics for

Eurogames, as we knew some would not serve our design goals. We did not restrict ourselves to non-confrontational mechanics, nor did we divorce theme from mechanics, a characteristic which historically, has been common in Eurogames, though there are more recent examples of Eurogames with stronger themes, e.g. Spiel des Jahres nominees *Terraforming Mars* (Fryxelius, FryxGames 2017) and *T.I.M.E Stories* (Chassenet & Rozoy, Space Cowboys 2016). We designed the events of the game primarily around tort laws, and the win states such that they relate to underlying principles of the laws. We did include certain elements common to the Eurogame genre that we felt would assist in bringing our model to life. These included: resource accumulation, resource management, and distribution systems; the presence of elements of chance that can be mitigated; and constrained play time. (Woods, 2012, 108-16) We also drew from the broader category of "hobby games" (Woods's term) or tabletop games - card and boardgames from a variety of genres including the Eurogame. This gave the design team a broad palette of mechanics to choose from, in order to craft the most effective game possible.

Below, we discuss a selection of the characteristics and mechanics that we drew from these tabletop genres in the process of building a playable game model of the legal system.

Emphasis on Advancement over Destruction

Eurogames provide a variety of examples of mechanics and systems for players to deal with different kinds of resource management, be it accumulation, distribution, combination, or other means to strategize and use resources towards goals and win-states (Woods 2012, 84-88). Players often build towards victory, rather than racing along a track or destroying their opponent's pieces. We felt that players building rather than tearing down was a fitting metaphor for a legal system created for the purpose of allowing families as well as broader society to thrive.

In addition, in Eurogames the primary goal is often layered over a variety of sub-goals with resources, and it is this layering that provides depth of play from a set of relatively simple rules (Woods 2012, 99-102). In *Lost & Found*, while the primary goal is to accumulate resources and use those to fulfil the requirements on responsibility cards, the game has a number of secondary goals, including survival of negative random events, hand management to prevent forced discards of key resource cards, and negotiating with other players.

Chance Elements/Imperfect Information

The game state in many Eurogames has imperfect information, and makes use of random elements that are mitigated by player choice (Woods 2012, 110-111). While the game may present some uncertainty that allows for less skilled or younger players to feel they have a chance to win, it also gives the perception of rewarding players for skillful choices. As a game designer, Schreiber suggests that the element of luck may also have a psychological effect, allowing players to blame the random element for their losses while claiming superior skill as the reason for their wins. This element of chance is particularly important given various learning environments, in which the players may have widely varying degrees of skill at tabletop games.

In *Lost & Found*, we gave players a closed hand of cards to allow for concealment of information from one another, and used several decks of shuffled cards as random elements. The mitigation of randomness was controlled through careful balance of player resources: there are just enough resource cards for players to collectively draw the entire deck once, and just enough required costs in the game to absorb the resources. While the order of card drawing varies from game to game, through repeated play a group of players has enough information to work together to meet most or all of their goals if they plan carefully as a functioning team.

Constrained Play Time

Play time of Eurogames is usually constrained and predictable with a given number of players (Woods 2012, 115), as opposed to many games with wide-open play time (consider, for example the potential length and lack of end-state in a typical *Monopoly* (Magie & Darrow, Parker Brothers 1933) game). In the Eurogame genre, this is a practical consideration for games played by families or other groups that have limited and delineated times for this leisure activity, as the games give some guarantee that they neither end too quickly, requiring the group to find another game to fill out the time, nor continue so long that some players are forced to drop out mid-game (Woods 2012, 62). In the case of *Lost & Found* we were conscious of limiting play time so that the game could be used reliably in settings such as public programs, during class time, or in after-school programs. Constrained play time was an important criterion in the design.

Collaborative Mechanics, Tightly Wrapped Theme

Pandemic, as Rachel Wagner has noted (Wagner 2017), is the closest model for our collaborative mechanics. In *Pandemic*, players work against the game system to defeat spreading plagues. In *Lost & Found*, the collaborative parts of play require players to collectively enhance the community through bringing new structures and skills to the community. Players also must work together to address natural disasters and community crises. Wagner also notes that unlike the Eurogame genres that most often divorce theme and mechanics in favor of abstracted mathematical strategy puzzles (with historical theme as an afterthought or visual aesthetic theme), *Lost & Found* tightly wraps the theme of the laws and the decisions related to the laws with its mechanics. Wagner aligns *Lost & Found* more closely with *Pandemic*, though *Lost & Found* also draws from Eurogame mechanics. By combining

these and other mechanics, which we detail in the following section, we worked to build a playable game which modelled the tensions within the legal cases.

The Play of *Lost & Found*

In *Lost & Found*, each player takes the role of a family in a small village, and has a personal objective of fulfilling at least three of their own family responsibilities. Meanwhile, the players must also collectively complete at least six communal responsibilities. If the communal responsibilities are not completed by the end of the game, all players lose; otherwise, each player who completed their family responsibilities wins. In this way, any combination of players (including none or all) can win together. Players can thus choose to work together to build an ideal society, or individuals can attempt to secure their own win and let others fend for themselves, or an individual can even go so far as attempting to win solo by sabotaging others (at their own risk); one of the core design features was to showcase cooperative play while still allowing transgressive play, emulating the kinds of choices people make regarding legal systems.

There is a deck of event cards, with one card played on each player's turn. Some events are positive, giving players more resources. Other cards require the players to come together, spending resources or otherwise taking penalties for the greater good, in order to avoid a disastrous effect. Still other cards present ethical dilemmas to one or more players, taken directly from Jewish law (*halacha*); these allow players to choose to break the law for their own personal gain, follow the law even if it is to their detriment, or even go above and beyond the law at greater personal cost. Breaking or transcending the law acts as a reputation system for the game: at the end of the game, players face reckoning for their deeds, which may result in gaining or losing additional family responsibilities, modelling the community discovering theft or appreciating assistance for neighbors.

The event deck also acts as a timer for the game: when the deck runs out of cards, the game ends. In the case of a five-player game (the maximum supported), each player gets a total of six turns, and can only contribute to a single family or communal responsibility each turn. To win, then, a player must spend half their turns completing family responsibilities, and one of the communal responsibilities should be completed every round, on average.

Completing responsibilities requires that players spend resources in the form of *dinarim*, the game's currency. Players draw cards each turn that are worth some amount of *dinarim* each. On each player's turn, after resolving a law-based event, they must decide how to allocate their cards: towards completing a family responsibility for themselves, or a communal responsibility that helps everyone. The game is balanced so that the income players receive from cards is sufficient to meet all responsibilities, if players coordinate together; however, income distribution is random, so some players may get more resources on a given turn while others get fewer.

As an added complication, some of the resource cards are considered lost by someone else, and found by the player who draws them. While a player can use someone else's goods to complete their family responsibilities, this is considered breaking the law (equivalent to stealing). A player is instead legally required to care for the card until they can return it to its owner, but returning it is sometimes impractical or otherwise requires waiting some turns. Meanwhile, a player can only hold a certain number of cards in their hand, and must discard down to their hand size maximum at the end of a turn, making it a (sometimes severe) burden on them to care for lost objects.

When a player completes a family responsibility they are rewarded through additional resource cards or options to use their resources more efficiently. While this is a personal benefit, players

could make the case that this helps them to more effectively help the community on future turns. Communal responsibilities, on the other hand, reward all players: some protect from negative events or reduce the cost of family responsibilities, and all of them reduce the cost of certain other communal responsibilities (allowing the players to "chain" together communal purchases in the proper order for greater resource efficiency, which was influenced by the design of *7 Wonders* (Bauza, Repos Production 2010).)

As such, the primary mechanics featured in this game are a variety of trade-off decisions. Mechanics such as accrual towards a goal (a common trait of Eurogames), resource management (which features prominently in both Eurogames and American-style hobby games), a fixed set of resources and events that are drawn in random order (the presence of randomness mitigated by player planning and skill is a hallmark of Eurogames), and a tragedy-of-the-commons style choice of striking the balance between helping oneself at the expense of the community and *vice versa* (a rarely explored mechanic in tabletop games of any genre, most similar to *Crisis* (Bouboulis & Tsantilas, LudiCreations 2016) which the authors discovered through communications with the editors of this chapter). Layered under these are a number of other mechanics: hand management, trading and negotiation with other players, and the bonus chaining and combo mechanics of the responsibility cards (all of which are found in hobby games in general, including Eurogames).

We now turn to the evolution of the game system as it exists in the release version, implications for curriculum development, and the gleanings that have led us to two games with different learning mechanics, both designed to support and be supported by distinct curricula, two games that can also be used in concert.

[INSERT IMAGE 12 HERE]

Figure 12. A Selection of cards from *Lost and Found* (2017)

In Depth: Selection of Key Decisions in the Design of *Lost & Found*

What follows is a case analysis and drill-down on a selection of key design decisions and paths we followed in the development of our model of legal systems in *Lost & Found*. Through illustrating these design paths, we show how we moved from our initial theoretical suppositions through the iterative design process to a functioning game complete with learning mechanics focused on essential learning activities. We then discuss the implications of those decisions for designers approaching generation of learning mechanics, specifically for a game dealing with humanities subject matter, including legal reasoning, history, and ethical debates and decision making. We conclude with suggestions for a more contextualized understanding of learning mechanics and essential learning activities out of which to design learning mechanics, as well as the kind of curricular considerations that may require to support those mechanics.

Early Stage Design of *Lost & Found*

As noted before, the goal of *Lost & Found* is to let players engage with religious laws that help hold society together. Given the importance of curricula mentioned above, it is also critical that learners discuss and reflect upon those game experiences. Our initial approach to the design of the game's core mechanics was to create a game-based model of legal systems that would allow players to make trade-off decisions. Because laws are essentially rules, we theorized they would translate well to mechanics, and the lost and found object laws of Maimonides' *Mishneh Torah* (our initial base text) are succinct, which led us to a resource generation approach. Many laws we studied involve a person's responsibility when finding a lost object or animal, and those items could be considered resources that have value. The initial

gameplay, therefore, had a strong element of resource generation and manipulation so that players would appreciate having resources and feel a real sense of loss if those resources were later taken away through accidental loss.

Because we did not want the game to focus entirely on resources and wealth accumulation, we added a reputation system, in which players did not merely contend with resource management but also their standing within the community. This included both a voting mechanic where players could rank one another (so that a resource-starved player could still do well in the game if they made a lot of allies at the table), as well as a model of the broader community consisting of non-player-controlled characters (NPCs) that would observe and react to player actions that either benefited those players at the expense of the community, or vice versa.

At this point, *Lost & Found* was primarily a heavy resource-management Eurogame, focusing on numeric systems that underlie the laws. Our greatest challenge at this point was determining the victory condition. What did "winning" mean in this context? We knew that wealth accumulation on its own was not sufficient, as the purpose of the laws was not to allow people to achieve wealth.

Acts of Meaning

When the goal of laws is to strike a balance between benefiting the individual and the community, what does it mean for an individual to "win"? Our game design team ultimately came up with the concept that if players are individuals in a village community, winning should involve the players living a meaningful life. This led to a search for sub-goals, or "acts of meaning," a term coined by team member Alex Lobl, which became the players' victory conditions. These acts of meaning went through several iterations, becoming

"Responsibilities" (team member Bruno Rocha's contribution) in the final game. For an extended discussion of this process and Lobl and Rocha's contributions, see Gottlieb (2017).

From this work on win states, it became clear that the most important choices players were making revolved around balancing the needs of the individual with the needs of the community, and "winning" involved striking a proper balance. The ability for learners to articulate that there was a natural tension between individuals and a community arose as another learning goal. The process of designing win-states and determining objectives helped us to articulate and clarify additional learning goals for our players. It also provided a means of linking the thematic content to the resource generation mechanics that were modelling the case law. Players were not simply managing resources, but doing so for a set of values often in tension: the flourishing of family and community.

Simplification and Abstraction

At this point, the game was playable and the win states were well defined. There were multiple overlapping systems, including resource generation of multiple resource types, random events that caused objects to be lost or found, and a reputation and social status system. The complexity in the game was due to the inherent complexity of the underlying legal systems and community dynamics that we were modeling. This presented a problem: the game as originally designed was meant to last 16 turns, and each turn took about 45 minutes, for a total play time of 12 hours! Internal playtests typically only lasted one or two turns and we did not complete a single playthrough to the end during this phase of development. Obviously, for a game meant for public play in a variety of environments, this was far too long, and we began the process of simplifying the mechanics. But what was essential and what could be safely removed? Every removal of a mechanic would streamline play, but at the cost of potentially losing elements of what we were trying to teach. There was a natural tension in the design between the desire to

make the game more elegant and streamlined, and the desire to create a high-fidelity simulation with deep meaning.

One of the first simplifying breakthroughs the design team implemented was to revamp the resource system. In earlier versions, there were many kinds of resources and resource generators: cows that produced milk that could be processed into cheese, sheep that produced wool that could then be spun into garments, and so on. Family and communal responsibilities required specific resources to complete, which motivated player coordination and heavy trading, but keeping track of these separate resources involved a great deal of extra gameplay complexity and bookkeeping. We then collapsed everything to a single resource of *dinarim*, and gave all resources a cash value as the number of *dinarim* that each was worth. As we would see in future simplifications, this had the property of adding a layer of abstraction to the game (everything is put in terms of a single resource) but at the same time this removed some of the simulation elements (there were still cows that were worth 6 *dinarim* and milk worth 2 *dinarim*, but cows no longer produced milk - there was now no connection between resources). Abstraction was a tradeoff with the benefit of more elegant play and the downside of loss of simulation elements. We felt this was overall a positive change, and continued looking for other places to simplify.

To achieve a better understanding of the game's systems, we created a resource flow diagram, similar to those described by Dormans (2009). Every resource or object in the game was drawn in a rectangle; the rectangles were connected with arrows based on the mechanics that allowed players to convert one type of resource to another. This allowed us to simultaneously see just how complicated the game had become, and also visually identify the gameplay loops by seeing where the arrows created circular paths. This method also allowed for us to tell which resources and mechanics were central to the game (those that had many connections to other

elements of the game) and those that were peripheral (those with only one connection, or none at all).

From this diagramming and analysis, we identified that the core gameplay loop focused on carefully managing and allocating resources that were used to complete family (competitive) and communal (collaborative) responsibilities, which in turn gave the players additional resources. The reputation system and NPCs were entirely different systems with few connections to the central resource management, and were removed from the game entirely. We retained events in the game that posed challenging trade-offs, and in some cases, ethical decisions (family vs. community) based on case law, but we redesigned the events to relate back to the core game loop. After this streamlining exercise, the game's play time was reduced to 90 minutes (and eventually reduced further to about 45 minutes), while still retaining the essential learning activities: challenging trade-off decisions. As we continued working on the game, we still had to be aware of when to add new mechanics to improve or expand the learning potential of the game and when to remove existing mechanics to reduce play time or non-essential complexity. The team members acknowledged during and after this process that resource diagramming was a powerful tool for managing complexity and play time, and one that greatly enhanced our understanding of both the game's systems and the interrelationships between them.

It is often necessary when working with modelling complex systems to have a digestible model that can be used in a variety of learning environments. This is especially true with a game that can be played out-of-the-box as opposed to heavy simulation or partial play of a simulation. Long playtime and high-fidelity complex systems models can take many hours to play. In our case, we required play time under an hour, which mandated the kind of simplification described

above. The trade-offs that the design team faced in this process have implications for the kinds of curricular approaches necessary in the deployment of the game.

Evolving Analysis and Observations

At this point in development we had a playable tabletop game that fit into a reasonable play time period, and one that generated trade off behaviors by the players – interesting decisions that they had to consider such as whether to expend their own resources to follow the law and return lost animals to other players, or whether to break the law and take resources for their own families. Owen Gottlieb and colleague David Simkins turned to external research, conducting observations and semi-structured interviews with a small number of teen players to generate some early stage preliminary social sciences data.

Simkins' noted in his analysis of recorded participant observation that the shift from play into discourse for reflection required particular moderation and scaffolding. While some of the discussion by the students included emotional and humorous reactions to losing animals, the discussions did not move into the implications of the law until guided by moderators in reflection discussion. Simkins suggested the opportunity to explore mechanics that moved directly into player discourse (also referred to as "talk-practice" - a term in cultural anthropology for spoken utterances which can be used as evidence) about tradeoffs. In addition, in an external design review at the Games+Learning+Society Conference in 2016, colleague Trent Hergenrader noted how discourse around resource management in Eurogames can center on the verbalization of arithmetic strategizing. Another consultant, Scott Nicholson, suggested how more roleplay-oriented play might change the discourse. Simkins and Gottlieb also noted some of this kind of arithmetic strategizing in talk-practice in the field recordings.

Schreiber and Gottlieb returned to the design studio to analyze these observations and to determine what we could learn about learning mechanics, specifically those used for eliciting trade off discussions. In managing play time, we noticed that the level of abstraction required also changed the representational nature of play. Players could discuss the value of the objects (in *dinarim*) without always noting the meaning of the object. This was not always the case (for example, with the player who concentrated on the loss of his sheep), but other times, players could converse in the arithmetic of the *dinarim*. It appeared that the abstraction necessary for reduction of playtime may have necessarily downshifted the representational nature of the talk-practice of the players. Salen and Zimmerman describe the "constituative rules" of a game as the underlying mathematical structures of the game. For example, *Snakes and Ladders* without the illustrations is a grid with numbers instructing movement, determined in concert with the rules (Salen & Zimmerman 2003, 129-133). We hypothesized that the constituative rules around resource management can also intensify as the systems are further abstracted. This could lead to talk-practice among players that centers on the abstraction – such as discussing the arithmetic calculation to move towards win condition rather than the modelled action of returning someone's object. Again, this can be modulated or interrupted through educator-moderation including reflection as part of the necessary curriculum (it is important to remember, as discussed earlier, that all games for learning require curriculum).

While we had centered on trade off decisions by players, aligning with our essential learning activities, we had concentrated on the legal and communal system modeling rather than the talk-practice generated by those systems and trade off decisions. This led us to ask the question suggested by Simkins: could we develop mechanics that would move players directly into discourse about the law and its meaning and context? Might the tabletop mechanics themselves have boundaries or limits at which player discourse naturally shifts to abstracted discussion (the "maths") and away from representational discussion (the "meaning")? While we would

address this through educator moderation and reflection discussions, this presented an exciting design challenge that would eventually lead to the second game in the series.

Order in the Court: Experiments with Direct-to-Discussion Mechanics

While we knew we could reach representational-level discussions of trade-offs through moderated reflection, we wondered: might we be able to design mechanics that could avoid the issue of abstraction, developing game mechanics that would immediately launch players into discussions of the reasoning behind the laws? This would move player talk-practice beyond the trade-off decision making in the cases to the meta-stage of understanding why the law may have been written as it was. Such a shift in approach could potentially work in concert with the strategic game, either played independently or in tandem. Could we develop mechanics that could quickly move into the meta-legal while maintaining engrossing play?

This time, we aimed for players to ask questions about the law and its meaning such as "why is the law the way it is?" and "how does the law find a balance between protecting individuals and protecting society?" These questions would likely not have been elicited directly from a systems based abstraction of the laws. We felt that this was a higher bar for discussions than the kind of reflection on trade off decisions that discussion moderation could elicit, and offered a deeper level of discussion.

The *Mishneh Torah* includes highly specific cases and therefore could often be oriented towards particular cases as illustrative of broader notions and legal concepts, such as preventing undue burden on individuals while demanding individuals be inconvenienced for the betterment of the community. We sought to look to the specificity of these cases to attempt to

elicit processes of player reasoning towards the underlying principles. If we did this through storytelling, we could achieve talk-practice on the topic of legal principles.

From these discussions and approaches, we developed a party game called *Order in the Court*, in the style of *Apples to Apples* (Kirby & Osterhaus, Out of the Box Publishing 1999) and *Cards Against Humanity* (Dillon et al. Cards Against Humanity LLC 2011). As with *Lost & Found*, we developed the game over dozens of iterative design, playtest, and analysis cycles. In *Order in the Court*, players take turns as judge, drawing a card with a court ruling or verdict on the front of the card and an explanation on the back. The explanation provides context and meaning to the laws, which can often appear arcane, especially when out of context. We carefully designed the "rulings" to slightly obscure the principles underneath them, enough to provide challenge and afford opportunities for humorous interpretation. The judge reads the ruling (the law from *Mishneh Torah*). Players then draw story cards and compete for the judge's points by constructing a story using their cards to explain how the ruling may have come about. Early stage internal playtesters were immediately engaged in discussion of the possible meanings of the laws. In an early version of the game, we awarded points for both humor (or judge's preference) and also points for the player with the story closest to the explanation provided on the backs of the cards. We had a breakthrough when we removed the second point structure. Players moved more fully into humorous play, yet almost always asked for the explanation afterwards. The removal of points appears to have enhanced player curiosity: following this direct-to-discussion mechanic with no mandate to inquire, players asked to hear the background of the laws. This requires formal investigation to draw conclusions, but points towards an area of research to open.

We are still at early stages of inquiry into *Order in the Court*. It seems clear that *Lost & Found* and *Order in the Court* have different curriculum requirements, with guided discussions in the

former to shift discussion to reflection upon the representational aspects of tradeoff decisions. For the latter game, the curriculum would need to refocus on the specifics of the cultural milieu, as the first game spends more time on fidelity of imagery for architecture, objects, coins, and setting, as well as a variety of communal and family responsibilities, all based in the law. While the illustration and graphic design can do some of that work in *Order in the Court,* the first game may actually be of assistance in setting the geographic and time stage. We intend for our research moving forward with other team members including Simkins to examine interactions with various curriculum choices. We also hope to explore the possible interactions between the two games' systems.

Conclusion

Through our design work, we came to understand that there were certain aspects of genre restriction regarding player behaviors, prior to curricular or facilitated scaffolding. While games for learning are understood to always require curriculum, the player behaviors without curriculum we believe, allowed us to see tendencies of play that could help in constructing curriculum. One example is where player behaviors would require reflection in order to move from abstraction to depth. In particular, this could be seen in the heavy arithmetical strategizing that can dominate certain resource management mechanics from Euro-style games. While trade-off discussions can still take place, resource management abstractions can lead to more time in discussion on the arithmetical side of the trade-off discussion. With discussion and reflection prompts, the trade-off contexts can be emphasized. Some of the Euro-style conventions are not as bounded as they appear when played without facilitation.

We found that as designers, we were also making trade-offs between what we term high-fidelity modelling of processes and lower-fidelity modelling. Some elements of the high-fidelity modelling included community cooperation in addressing crises, disasters, and the

resolution of events of lost and found objects. The higher fidelity model of the strategy game also included the aesthetic accuracy of objects, garb, and architecture of the time and place. The lower-fidelity model of the party game allowed for fast-to-legal-discourse play, but does not simulate processes of collaboration or event resolution. In the party game, players talk and hypothesize about the law, discussing the law at a meta-level. For the later game, the curricular scaffolding would likely need to provide more detail of the historical and cultural milieu and discussion of the time period.

Just as the strategy game aims for players to have to make trade-offs and often the party game "Explanations" reveal trade-offs in the legal system, we as designers had to make trade-offs. We made trade-offs between mechanics. We made trade-offs in terms of genre conventions.

History and legal systems are complex. Given the need to explore and model complex procedural systems as well as evoke discussion and reflection about the legal processes, we believe that more than one game and set of genre mechanics can allow for that approach. Using more than one game, each complementing the other, and eventually wrapped in a multi-layer curriculum could address a complex layered topic such as 12th century medieval legal systems of North Africa. Coming at the topics from multiple directions with multi-modal game mechanics and genres seems it could provide a pathway to eliciting a broader spectrum of essential learning behaviors. This approach may be most fitting for learning in the humanities. We intend to continue to explore these topics in further research and encourage other designers to consider the possible benefits of the use of more than one game for exploring rich layered subject matter.

Acknowledgements

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Narrative Machines: A Ludological approach to Narrative Design

Malcolm Ryan, Robin Dixon and Esther MacCallum-Stewart

In this chapter, we discuss the design of games as *narrative machines* – mechanical systems that create narrative experiences. The role of narrative in games has been a hotly discussed topic in Game Studies, and indeed there are many ways that play and story can come together, from static scripts authored by the designer to improvised scenes freely role-played by players. We wish to address a middle-ground of particular interest to boardgame design: the *emergent* narratives that result from the interaction between the players and the rules.

We argue for the deployment of *systemic* narrative – stories that are the result of carefully designed systems and which employ emergent play as a viable design tool, based on a close analysis by Malcolm Ryan (the lead author). We outline an approach that Ryan calls *narrative-driven design*, in which the designer begins by analyzing the desired narrative as if it were a game being played. We ask ourselves: "Who are the players in this scene? What actions are available to them? What are their incentives? What conflict are they experiencing?" When this is understood, we can begin to recreate the same situation through the mechanics of our game.

To illustrate this process, Ryan presents within the chapter an account of their own design process in creating *The Road* (Ryan 2015), a zombie-survival card game set in the Australian outback. *The Road* is a game of heroism, hope, betrayal, tragedy and revenge. The game has no scripted encounters, instead the mechanics are designed so that familiar post-apocalyptic narratives play out of their own accord, driven by the players' own desires. To demonstrate how this is achieved, we present a close reading of the game mechanics, an overview of some of the surrounding critical concepts, and comparable insights from the design and playtesting process.

What is emergent narrative?

Consider the following simple game. A player has a health track with values from 20 (full health) to zero (death). Every 4 positions along the track, a scar token is placed, which the player gains the first time their health drops below that level. This represents a permanent scar to their health. The game is played over twenty turns. The objective is to reach the end of the game with health remaining. The game ends in death if heath ever reaches zero.

On each turn, the player first rolls a four-sided die to determine how many points they add to their health, to a maximum of 20. The value shown on the die is reduced by one for each scar the player has, and can go negative if the die roll is less than the number of scars, in which case the player loses health. There is an encounter deck of 20 cards, shuffled at the beginning of the game. On each turn the player draws and discards one of these cards. Most of the cards have no effect, but three of the cards cause the player to lose 4, 6 and 8 health respectively. The player wins the game if they make it through 20 turns without dying.

This game is clearly not very complex and lacks any kind of choice, but it has an interesting dramatic structure. The graph in Figure 13. shows three example playthroughs of the game with different narrative arcs:

[INSERT IMAGE 13 HERE]

Fig 13. Example playthroughs of a simple game, showing players' health over time

Player 1 faces a major encounter early in the game and is significantly scarred, but with luck manages to regain enough health to face the second and third encounters without issue, and wins the game relatively unharmed.

Player 2 is not so lucky. The first encounter is only slightly scarring, but as they are on the verge of recuperating, the second encounter hits, leaving them with more major scars and slowly dying. The third encounter, when it happens, is enough to finish them off.

Player 3 shrugs off a minor encounter at the beginning of the game and is on full health for a while, but then two more encounters in quick succession leave them close to death. Nevertheless, with luck they are able to make it to the end, winning the game with only one health to spare.

This example is illustrative of the concept of *emergent* narrative – the creation of meaningful narrative structure through the player's interaction with gameplay systems.

The term *emergence* is often used in an ill-defined way, sometimes bordering on 'magic', but it ultimately has a prosaic definition. Schelling (1971) describes it as 'systems that lead to aggregate results that the individual neither intends not needs to be aware of'. It hinges on our ability to recognize high-level abstract structure in the details of a low-level concrete system (Bedau 1997). Thus, for example, in the classic example of Conway's *Game of Life* (Conway 1970), the concrete system describes the way individual pixels turn on and off, but we recognize high-level structure in the stable patterns that evolve over time, such as blinkers or gliders. We talk particularly of 'emergence' when there is an apparent disconnect between the simplicity of the low-level systems and the complexity of the resulting patterns, although this distinction is often subjective.

When we talk of *emergent narrative* (Louchart et al 2008, Sweetser 2008), the abstraction we desire is recognizable narrative structure: suspense, resolution, reversal, etc. The system and the player interact to produce a sequence of fine-grain actions and events. In the terms of formalist narrative theory (Walsh 2001), this is the *fabula*, the unstructured temporal flow of events that underlie the narrative. It is left to the player to recognize and mentally construct the

sujet, the relevant narrative relationships between events (Jenkins, 2004). This is a skill that human beings learn early in life. Given the myriad of events we experience in a given 24 hours (*fabula*), we adeptly edit and compress, amplify and connect, to tell the story of our day (*sujet*).

In distinguishing between *scripted* and *emergent* narrative, it is usually this narrative abstraction we refer to. In a scripted game narrative, the units of interaction are of coarser granularity, loaded with individual narrative significance (*rescue the cat* for example, or *forgive the thief*). The narrative structure is clearly represented in the rules of the system, and the author has more control over the story by explicitly presenting a desired narrative interpretation of the events. As a result, the player has less sense of narrative control, choosing narrative pathways that have been set out for them rather than discovering their own narrative structure in the game.

In contrast, emergent narratives are "not pre-structured or pre-programmed, taking shape through the game play, yet they are not as unstructured, chaotic, and frustrating as life itself" (Jenkins 2004, 128). In an emergent narrative, the player's choices occur at a finer granularity (*move left*, *throw the ball*), having individual significance that is material, but of little narrative consequence. It is only through what Sicart calls the *aggregation of choices* that the bigger picture arises (Sicart 2013, 104), and each decision is recognized as a step in a bigger narrative arc.

However, it is not "magic" that keeps these fine-grained choices from being "unstructured and chaotic". Rather, it is the design of gameplay systems with well-understood dynamic properties. Ideally, these systems draw the player along a narrative path without dictating their choices or forcing their hand. So, for example the game described above combines a random walk with a positive feedback loop. The average number of points of health earned per turn is 2.5 minus the number of scars. As long as the health stays above 8, this will result in a net

positive trend. When health drops below 8, the trend becomes increasingly negative as more scars are accumulated. The three encounter cards are each survivable on their own, but take a while to recover from. With only one scar, the 4, 6 and 8 encounters take an average of 2.7, 4, and 5.3 turns respectively for the player to regain full health. Simulation shows that this fortunate outcome happens about 28% of the time. In the other cases, the encounters appear more closely together in the deck, and the player is not given enough time to recover from one before facing the next. This makes it much more likely that a second scar will be incurred, slowing the player's recovery. If the player is unlucky, a third scar will be gained, at which point the game becomes a race to the end before health runs out. On average the player dies in about 12% of games.

This simple example illustrates what we call a *narrative machine* – a game system designed to exhibit particular dynamics that have a meaningful narrative interpretation. In this paper, we emphasize the idea of emergent – or, we prefer, *systemic* – narrative as a designed thing that can be constructed through an understanding of drama and system dynamics. To design a narrative machine, we first need to understand the narrative structures we want it to exhibit. What patterns should exist in a sequence of events (*fabula*) generated by our game to prompt the player to recognize and construct a meaningful story (*sujet*)? The answer will depend on the kinds of stories we want to tell: suspenseful, heroic, tragic, comedic, or otherwise. Given this set of patterns, we need to reverse the interpretive process. We design game mechanics which generate the patterns as system dynamics, emergent patterns of play such as the feedback loop exhibited in the example above (Adams & Dormans 2012). The tools we have for storytelling are not the words of an author, or the shots of a film director, but the differential equations of a mathematician, creating high-level behavior from low-level interactions.

In literary theory, the field of *poetics* is dedicated to the structural analysis of literary devices and forms (Culler 2011). Twentieth-century narrative theorists such as Genette (1983) and

Barthes (1975) were interested in the linguistic structure of narrative and how it affected the reader. We can learn from their analyses to recreate these devices within our games, as systems of rules which play out in particular ways to tell particular stories. In this way, we can construct our own poetics of narrative systems (Ryan 2009).

In the following we present our approach to the design of systemic narrative, which we call *narrative-driven design*. Following this method, we design by imaginatively reverse-engineering the games being played by characters in the stories we want to tell. We identify the important mechanical elements of these games, which give rise to the narrative structure as patterns in dynamic systems, and we recreate these as mechanics in our own games. We outline this process more thoroughly in the next section. We then provide an in-depth example, based on the lead author's experience in designing *The Road* (Ryan 2015), a post-apocalyptic survival card game with a strong emphasis on systemic narrative.

Narrative-driven design

A story is typically about characters making difficult choices, facing danger, and the like. In narrative-driven design, we look at these stories as if the characters were playing a game, and ask ourselves "What are the rules of the game?". In particular:

Beliefs: What do the characters believe about the world? Are their beliefs correct? What important things do they not know?

Desires: What do the characters desire?

Actions: What actions can the character take? This includes not just the final action taken, but also the available alternatives they may consider.

Outcomes: What outcomes could happen in each case? In the case of chance outcomes, what are the odds?

Conflict: What conflict are the characters experiencing? How do they arise from their desires and their knowledge of the world?

In asking these questions, we need to focus on what elements of this 'game' are crucial for the dramatic nature of the narrative. For example, consider the following scene from the story *The Tale of Peter Rabbit* by Beatrix Potter:

[Peter] rushed into the tool-shed, and jumped into a can. It would have been a beautiful thing to hide in, if it had not had so much water in it. Mr. McGregor was quite sure that Peter was somewhere in the tool-shed, perhaps hidden underneath a flower-pot. He began to turn them over carefully, looking under each.

Presently Peter sneezed—'Kertyschoo!' Mr. McGregor was after him in no time.

And tried to put his foot upon Peter, who jumped out of a window, upsetting three plants. The window was too small for Mr. McGregor, and he was tired of running after Peter. He went back to his work. (Potter 1902)

This is a fundamental moment of suspense (Ryan et al. 2008). Peter is hiding in the watering can, stifling a sneeze while Mr McGregor draws closer and closer. Things might be bad for Peter if he is caught. The sudden sneeze gives Peter's position away, but in a last-minute reprieve, he jumps out the window to safety.

What is the game being played here? Consider Peter and McGregor as players. To answer our previous questions:

Beliefs: McGregor knows Peter is hiding someplace but is uncertain where. Peter knows the farmer is getting closer, but it uncertain about whether he will be found.

Desires: McGregor wants to catch Peter, but also wants to get on with his work. Peter desires to be free and to elude McGregor for now.

Actions: At any moment, Peter can either stay hidden or run. McGregor can keep looking, or go back to his work.

Outcomes: If McGregor chooses the place where Peter is hiding, Peter will be revealed and caught. If Peter runs, there is a (small) chance that he will safely escape, or else be caught. The longer Peter stays in hiding, the greater the chance is that he will sneeze. If he sneezes, McGregor will know where he is.

Conflict: The conflict for Peter is thus whether to keep hiding in the hope that McGregor will give up the search, but with the risk of sneezing and being discovered, or else to run immediately knowing he will be revealed but hoping to escape anyway.

We can now see how a game could be designed to provide the same dramatic narrative. There are several possible hiding spaces for Peter's player to choose between, without McGregor knowing. McGregor's character can either look in one of the places or go back to work. Each turn spent looking has a cost to the farmer, to be weighed off against the reward of finding Peter. Meanwhile Peter can choose on any turn whether to stay hidden or run. If he chooses to run, there is some probability he either escapes (win) or is caught (lose). If Peter stays hidden, there is a chance that he sneezes, which gives the farmer information of where he is hiding.

There is a major difference between the original narrative and this systemic design: in the game, Peter can lose. This is an important problem for narrative-driven design. For the tension and sense of danger to be real to the player, as it is to Peter in the story, there needs to be a real possibility of failure. In the story, Beatrix Potter only had to write one outcome, but in the game, we need to consider all possible outcomes and make sure they are all worth playing.

Will the story of Peter's capture still be worth telling if McGregor gets it right on the first guess? This is where we have to give up some authorial control and allow our systemic narratives to sometimes be less satisfying. Rather than force this situation to play out in a particular way, we provide an open space for different narratives to occur. Perhaps being caught will lead to Peter being carried to the kitchen to be made into a pie, presenting new opportunities for drama.

Lifting from the particular to the general, this story is an example of a general narrative design pattern for suspense as a combination of *uncertainty*, *danger*, and *inevitability* (LeBlanc 2006; Costikyan 2013). We can create dramatic tension by putting the player in a situation of potential danger where there is uncertainty about how it will resolve with the threat of a bad outcome. The situation is then slowly resolved over time, leading towards an inevitable moment of decision. We can also add *powerlessness* to this equation — the player needs to have limited options to control the outcome, instead being made to wait and hope for the situation to resolve in their favor.

Dramatic tension is a relatively simple narrative element to implement systemically. To demonstrate how we might approach more complex themes, we will introduce Ryan's own game *The Road,* and discuss the elements that went into designing its complex inter-character drama.

The Road

The Road (Ryan 2015) is a zombie-apocalypse survival card game for 3-5 players. In this section, I write in the first person to personalize the design decisions made in developing the game. As with any game, the design described below was developed through a long process of prototyping and playtesting. The following observations are based on both my design

intentions and the stories that arose during playtesting, as well as play sessions anecdotally reported by other players.

Let us briefly outline the structure of the game before launching into analysis. Play takes place over a series of in-game days, with morning, noon and night phases. In the morning, players need to eat from their limited supply of food, or else run the risk of going hungry with the possibility of losing health. Initially the risk is low, but it increases as hunger and tiredness accumulate. Then, as a group, the players must decide where to go that day, drawing two alternatives from a deck of location cards. Locations offer different amounts of danger (most often zombies and other threats) and rewards (loot and other beneficial effects). The living players must agree on a destination by whatever means necessary, and travel there. This triggers the start of the noon phase. Zombies are revealed by drawing cards from a Zombie deck. If zombies appear, the players can fight, hide or flee, making their decisions simultaneously. Battles can take several rounds of action until all the zombies are killed, or the players have fled or died. The remaining players can then loot the location to reveal a certain number of equipment cards, including food, weapons and other items, both useful and useless. These items can be distributed among the players however they please, subject to hand limitations. When distribution has been completed the night phase begins. Players must choose whether to sleep or stand guard, as there is a possibility they may be attacked during the night. Failing to sleep accumulates tiredness, which adds to the risk of injury due to exposure.

The game ends when all the players are dead (losing health from hunger, exposure or combat) or when they reach the Airfield location, deep in the Location deck. When the Airfield has been cleared of zombies, a certain number of players are given the option of escaping on a plane. The number of available seats is determined by a card drawn at the very beginning of the game but kept hidden until the end. If there are more players than seats, they must decide amongst themselves who stays and who goes.

My aim is designing *The Road* was to create memorable narratives in the style of *The Walking Dead* comics (Kirkman 2003) and TV series (Darabont 2010). In these stories the zombies are only the external threat and the real drama comes from the relationships between the survivors and the difficult decisions they need to make to stay alive. This is a common theme within zombie narratives:

More than any other monster, zombies are fully and literally apocalyptic... they signal the end of the world as we have known it for thousands of years. Also, in the original meaning of "apocalyptic," they reveal terrible truths about human nature, existence and sin'. (Paffenroth 2006, 13)

I wanted to explore themes of trust and betrayal and the tension between looking after the group versus looking after yourself. As such, it is a cooperative game, but one in which you might choose to sacrifice a player for the good of the group, or for your own selfish desire to survive. There have been a rash of 'hidden betrayer' games of late, with examples including *Dead of Winter* (Gilmour & Vega, Plaid Hat Games 2014) and *Battlestar Galactica* (Konieczka, Fantasy Flight Games 2008). While I enjoy these titles, I wanted to make something different. I never wanted to tell the player "You are the betrayer" as I believe that making this decision for the player removes the moral impact of the choice. In *The Road*, you are not born Good or Evil, rather you make the choice to do what you need to do to survive, and live with the consequences. In this way, the game reveals "terrible truths" about the players themselves. Every moral decision is left upon the player's shoulders. If they choose to betray the group, they cannot pass off responsibility by saying "the game made me do it". There is always the option to die (heroically, tragically, ignominiously) instead.

For this reason, there are many places in the game where the players need to make a group decision without any clear mechanic defining the process. For example, when a location is

looted, several equipment cards will be played face up on the table. These are then up for grabs for the players to take however they like, provided they maintain their hand limits. At first, players often grab anything they can and negotiate trades later, but most groups realize the need to agree on a fair process. The game deliberately leaves it up to the players to determine this process, and to police it for themselves without recourse to "the rules". These kinds of social decision problems are the focus of the game's design.

The heart of the game is the combat system, inspired by my reading of economic game theory and political science (particularly Michael Laver's *Playing Politics* (1997), which I cannot praise highly enough). The combat mechanics are designed to work as a *free-rider problem*, a situation in which everyone benefits but not everyone pays (Hardin 2003). When facing a zombie in *The Road*, everyone acts simultaneously, choosing (typically) to either attack or defend. The more players attack, the more likely it is that the zombie will be killed, but each extra attack has diminishing returns, increasing the probability of success by smaller and smaller amounts. The zombie attacks at the same time, and it is more likely to target a player who is attacking it. Defending is a much safer option as the player is less likely to be targeted and more likely to avoid damage. Thus, the best strategy for the sake of personal survival is to take a 'free ride', convincing the others to attack while you defend. Of course, if everyone acts this way, the zombie gets a free round to attack while everyone defends. To exacerbate the problem, the zombie has a chance of calling further zombies to escalate the battle, making things worse for everyone.

To further complicate this situation, not everyone starts off equally well armed. Weapons are randomly distributed at the beginning of the game: a knife, a machete, a shovel and a cleaver. The machete is the most powerful weapon and the cleaver is the least, in terms of both hit probability and damage done. This may seem unfair to the player with the cleaver, but it can also be turned to an advantage. The cleaver is so weak in battle that it is easy for that player to

argue that it would be better for everyone if they did not attack. After all, nobody benefits from the player getting hurt unnecessarily. On the other hand, the player with the machete often ends up taking the brunt of the battle, a fact that players are quick to complain about. However, they are often reluctant to accept the obvious solution – give up their machete to another player between battles.

These mechanics are designed to fuel tension between the players while also giving players deniability. A choice to attack or defend changes the odds of battle succeeding, but there is no way to unequivocally prove that it would have made a difference. During playtesting, new players showed a tendency to adopt an 'all-in' strategy in which everybody attacked at once, regardless of the odds. This would often end up being overkill and made it more likely that someone would be hurt. Shrewd use of the defense action would be better for the group in the long run, but deciding who has to attack and who gets to defend often proved a difficult problem for the players. I recall an instance in which two players faced a single zombie and both defended round after round, goading the other to attack. Eventually they resorted to threats and bargaining to convince the other to do the job. This was a joy to see as a designer, and created a memorable story that the players repeated long after the game was over.

To make this dynamic work, another important aspect of the design needed to be addressed: winning. In the rules for *The Road* there is no mention of winning the game. There is an ending in which the player dies and an ending in which they survive, but it is up to the player to decide which is more important. Crucially, there is no distinction made between surviving on your own or with others. Sometimes keeping the other players alive is your best bet for survival; sometimes it is better to cut and run. This is important, because 'mixed motive' games like free-riding rely on individual payoffs being *non-zero-sum*. In economic game theory, a zero-sum game is one in which an advantage to one player implies an equivalent disadvantage to the other(s), so the total gain is zero (Binmore 2007). Such games are strictly competitive,

whereas in a non-zero-sum game there is the possibility for an outcome to advantage or disadvantage players independently. Mixed-motive games such as the *Prisoner's Dilemma* and *Chicken* create more complex play dynamics by mixing the benefits of both cooperative and competitive play. These 'games' are at the root of many of the difficult social dilemmas of our time (ibid.).

Any game with a single winner is ultimately zero-sum; every move that advantages one player disadvantages the others. This is particularly problematic in trading games such as *Settlers of Catan* (Teuber 1995). Trading is non-zero-sum; it only takes place when it benefits to both parties. Early in *Settlers of Catan*, when there is no obvious leader, trading is common as it allows players to get ahead. However, as the finish line draws near, this kind of interaction dries up as players become reluctant to make a deal that would allow their trading partner to win. *The Road* deliberately omits the idea of winning for this reason, it allows mixed-motive play to continue all the way to the end of the game.

This omission has an additional advantage: it allows players to choose their own goal for the game. Some people play ruthlessly "survive at all costs". Others strive to maintain community "leave no man behind". Others embrace self-sacrifice for the good of group "You go. Just leave me the gun. I'll be fine." This was an important lesson to me as a designer: winning is overrated. We tend to regard the win condition as a fundamental mechanic of every boardgame. One of the first questions when playing a new game is "how do I win?". *The Road* has no solid answer to this question and is a better game because of it. I learnt this from *DayZ* (Hal, Bohemia Interactive l 2013), another zombie-survival game, first published as a mod for the 'realistic' shooter *Arma 2* (Buchta, Bohemia Interactive 2009). *DayZ* is well-known for having popularized the multiplayer open-world survival game, a genre in which many players are challenged to survive in a hostile online world. The notable thing about *DayZ* was that it had no explicit goals or narrative, apart from staying alive, which was often punishingly difficult

(Carter, Gibbs & Wadley 2013). As in *The Road*, the relationship between players was fluid – they could get ahead by helping one another, or by preying on each other's weaknesses. This lack of explicit goals in a hard, morally charged world lead to a remarkable wealth of player narratives, which were often shared online, as players found their own way in the world and made their own stories (Reddit, DayZStories 2017).

The other lesson I learned from *DayZ* is: don't make it easy. Survival while playing *The Road* requires careful management of resources and mistakes cannot be easily shrugged off. After a couple of battles, playtesters would often ask "So how do I heal?". There are only two sources of healing in the game, and neither one is guaranteed. If the players do manage to find the Medkit or locate the Hospital, it is a difficult decision when to make use of these resources, and on whom. Death, when it inevitably occurs, is permanent. This is a risky decision in a boardgame — nobody likes being out of the game early — but it is important to the design that death is a major threat. This raises the stakes and makes every decision more dramatic. It also makes for greater narrative cohesion. Being able to heal and start each new battle "fresh" isolates one battle from the next. Designers often adopt this design deliberately (particularly in computer RPGs such as *The Witcher 3* (CDProjekt RED, 2015) or *The Elders Scrolls V: Skyrim* (Bethesda Game Studios, 2011) in which rest and meditation between encounters can restore the player to full health) to allow players to clean the slate after a near loss, but it also reduces the possibility for a longer campaign narrative, in which the mistakes made in one battle have bearing on every battle to come.

Addressing the problem of death was important. I wanted a way to keep players who died early interested in the game without reducing the impact. The solution came from one of the playtesters: I had noticed that dead players often enjoyed watching the rest of the game play out to see how their story ended, to cheer for the survival of their friends and the comeuppance of their betrayers. The key was to keep them involved by giving them a way to influence events,

without putting them back in the game. The answer was a "ghost" mechanic. Once per game day, a dead player can call for a single dice to be rerolled. This gives the ghost the chance of turning a crucial failure into success, or vice versa, and maintains their investment in the narrative. It also fits thematically with the game, leading to scenes where a player can be haunted by the angry ghosts of the ones they betrayed, or supported by the memory of a friend's heroic sacrifice.

The long-term narrative of *The Road* is one of increasing desperation, often resolved in a moment of crisis. Without healing the players' health slowly dwindles, and death becomes a realistic danger. To compound the risk, a player who dies at the hands of a zombie will themselves rise as a zombie and attack the party, so a player on the verge of death is a liability to the whole party. The ongoing free-rider problem is designed to create simmering tensions in the group, but when things start looking grim, there are options for more significant betrayal. In addition to the *attack* and *defend* actions, players have the option to run from battle leaving their friends behind, or to turn on one another, by choosing to play the *run* or *attack ally* cards. These options are always available throughout the game, and hang over the story like Chekov's gun (TV Tropes, 2019), raising the ever-present option of betrayal without signaling the exact moment it should occur. By always being available as alternatives, it is left up the player to decide when and how to use these actions, if at all.

This is an example of how the game was specifically designed to avoid one of the common pitfalls in the design of moral play in games: the obvious signposting of certain moments as 'ethical choices' with a set of scripted solutions. This is a common design pattern in story-driven video games such as *The Walking Dead*, and 'storybook' boardgames such as *Tales of the Arabian Nights* (Gallela et al., 2009). This pattern draws an artificial boundary between the "moral" and "not moral" elements of gameplay, and reduces the impact of the player's choice by prompting particular outcomes, leaving authorial control firmly in the hands of the designer

(Ryan, Staines & Formosa 2017). In *The Road* my aim was to put ethical responsibility on the players' shoulders, by taking a systemic rather than scripted approach (Formosa, Ryan & Staines 2016). There are no explicit 'ethical choice' mechanics in *The Road*. Morality is never mentioned or measured. Rather, through the design of the setting and interaction, it is lens through which all the players' actions are interpreted.

To take a specific example, there is a scene in season 2 of the TV series *The Walking Dead* in which one of the protagonists, Shane, betrays Otis, another member of the group (Gimple 2011). The two are on a mission to an abandoned school to retrieve some supplies when they are trapped by a horde of zombies. Wounded and desperate, they run, but they can't outpace the horde and they are almost out of ammunition for their guns. Otis empties his gun uselessly at the horde. Then in a decisive moment, Shane turns on his friend and spends his last bullet to shoot him down. The zombies pile onto the wounded man and tear him apart, allowing Shane to escape. This scene is revealed in flashbacks throughout the episode, revealing the emotional scar this choice has left on Shane, and is a powerful driving force for his character for the rest of the season.

One of my deliberate design goals was to reproduce this scene within *The Road,* without explicitly scripting it. Rather, I wanted the problem to organically arise from the systems of the game and for the 'solution' to be the player's invention, rather than presented as an explicit option. My method was to follow the principles of narrative-driven design, and consider the rules of the game being played between Shane and Otis:

Beliefs: Shane and Otis both know they are in a desperate situation. The odds of getting out alive are slim. Otis is out of ammunition for his gun and Shane has one shot left.

Desires: Both characters have a variety of conflicting desires. Each one wants to survive, and values the other survival also. It is also important that at least one of them returns to the

group with the supplies, for the survival of the others. Finally, each one wants to maintain the trust of the group, which will be lost if evidence of the betrayal is made known.

Actions: Shane has three essential options: shoot the zombies, shoot Otis, or run. Otis has the same options, but spends his last ammunition shooting zombies, so can only run.

Outcomes: Firing a single bullet at the horde of zombies is ineffectual. If they run, at least one of them will probably be caught and killed, possibly both. If Shane attacks Otis, the zombies will most likely attack his fallen friend. Otis will die, giving Shane an opportunity to escape. No one else will know what happened, allowing Shane to return to the group with the supplies and keep the secret from his friends.

Conflict: Shane's desires are at odds with each other. For his own survival and that of the group, he needs to murder his friend. And he must keep it a secret from the rest of the group, to avoid being judged and cast out.

Unfortunately, due to the public nature of boardgame mechanics, it is difficult to allow one player to kill another's character and keep it a secret from the rest of the group. Without a designated gamemaster, most mechanical decisions need to be resolved out in the open. In the end, there was no good way to implement the "guilty secret" element of this scene in *The Road*, but the rest of the mechanics are present:

- The zombie-calling mechanic means sometimes an easy fight suddenly escalates into an unwinnable battle, when one zombie attracts several more.
- In combat, there are options to attack the zombies or other players, or run.

- If they run, there is a chance that a player will be attacked by a zombie and have to stay in combat.

- Firearms are powerful but ammunition is a limited resource that needs to be carefully rationed.

- A dead player leaves a corpse which is likely to draw the attacks of the zombies, leaving the other players safe to run.

This specific combination of elements is not guaranteed to arise, but when it does, Shane's solution is a valid strategy open to certain players, without being telegraphed. It is up to them to invent and implement it, and deal with the consequences (including being haunted by the angry ghost of the fallen).

The elegance of systemic narrative is that players have the scope to find alternative solutions to the narrative of their own design, rather than simply choosing from a list of authored alternatives. I have seen this same scene play out but with the Shane character choosing to stand and fight while the others run, knowing that his death will allow the others to escape. A story of betrayal turns into a story of heroism. Or it becomes a story of tragedy, in which everyone stays, fights and dies.

Conclusion

In this extended discussion of *The Road,* we have illustrated the process of systemic, narrative-driven design. The moment-by-moment events of the game, consist of individual combat actions with mathematical outcomes on character's health and wealth, but the long-term patterns that arise can be recognized as narratives of trust and betrayal through the aggregation of many choices. This is achieved by manipulating the beliefs and desires of the players, bringing desires into conflict and offering a rich space of action for the players to explore.

The example reveals a strength and a weakness of the systemic narrative approach: it prioritizes depth of representation over breadth. The combat and resource mechanics of *The Road* allow us to simulate social-coordination problems of depth and complexity – as long as they can be represented as combat and resource management problems. The mechanics of scripted narrative, on the other hand, commit to less systemic significance, and as a result they can be used to represent a much wider variety of situations and choices. A scripted game like *Tales of the Arabian Nights*, for example, uses simple, generic mechanics to represent sweeping narratives in large open world, at the expense of the player's inability to interact with any of them very deeply. Neither approach is necessarily better, each is suited to a certain kind of narrative experience.

There are many ways that games and storytelling can come together, from static scripts authored by the designer, to environmental narratives implicit in a world, to improvised scenes freely role-played by players (Pearce 2004). Each of these approaches offers different possibilities for sharing authorial control between designers and players. Among these alternatives, emergent narrative has often been regarded with an element of mysticism, as if it were something that cannot be designed, only serendipitously created. In this paper, we have attempted to draw back the curtain and look at the systems behind the stories, and how they might be crafted deliberately to give us more control over the kinds of stories they tell. We propose a process of narrative-driven design, analyzing stories as if they were games, then designing games that recreate those stories by manipulating players' beliefs, desires and actions. The resulting *systemic* narratives allow an artful combination of player- and designer-driven storytelling, as evidenced in *The Road*. We hope this work can be the beginning of a new poetics of narrative machines, an in-depth study of storytelling through the artful design of mechanical gameplay systems.

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Biographies

Giaime Alonge is a full professor at the University of Torino, Italy. He has been Fulbright visiting professor at the University of Chicago. His main research areas are: Hollywood cinema, screenwriting, film and history, animation. At present, he is working on a book on the relationship between World War One and Italian cinema. He is also a screenwriter and a novelist. In the last few years, he enthusiastically embraced Game Studies, something that allowed him to return to the great passion of his youth – board wargaming. Along with Riccardo Fassone, he is designing a historical simulation of the birth of the State of Israel, and a card game inspired by Dante Alighieri's *Divina Commedia* (also with Dante scholar Claudio Giunta).

Karl Bergström is a freelance game designer and psychologist working with simulation of complex systems through games. He has worked on RPG titles such as *Vampire: The Masquerade* (White Wolf, 2018) and *Oktoberlandet* (Fria Ligan, 2016), as well as the LARP *Voidship Concordia* (Skrotpiraterna, 2016). Karl received his PhD in Interaction Design from Gothenburg University in 2012.

Staffan Björk is a full Professor at Gothenburg University, Sweden. He is co-author of *Patterns in Game Design* (Charles River Media, 2004) and co-editor of *Game Research Methods: An Overview* (ETC Press, 2015). Staffan received his PhD in Informatics from Gothenburg University in 2000.

Douglas Brown is Director of the Games Academy at Falmouth University, UK. His research interests surround how games, narrative and imagination work together. He has published widely on games and storytelling, often collaborating with Professor Tanya Krzywinska. His

PhD was on the Suspension of Disbelief in videogames, but board games have always been his primary fascination and hobby.

Paul Booth is an Associate Professor at DePaul University, Chicago, USA. He is the author of *Crossing Fandoms* (Palgrave, 2016), *Digital Fandom 2.0* (Peter Lang, 2016), *Game Play* (Bloomsbury, 2015), *Playing Fans* (University of Iowa Press, 2015), *Time on TV (*Peter Lang, 2012), and *Digital Fandom* (Peter Lang, 2010). He has edited *A Companion to Media Fandom and Fan Studies* (Wiley, 2018), *Seeing Fans* (Bloomsbury, 2016, with Lucy Bennett), *Controversies in Digital Ethics* (Bloomsbury, 2016, with Amber Davisson), and *Fan Phenomena: Doctor Who* (Intellect, 2013). He runs the DePaul Pop Culture Conference and is currently enjoying a cup of coffee.

Dean Bowman is studying for a PhD at the University of East Anglia exploring the subversive potential of indie game narratives within dominant paradigms of play using production studies methodologies and Actor-Network Theory. He also teaches games studies and cultural studies at Norwich University of the Arts. He has a forthcoming book chapter on the gamer persona of Jason Statham for Manchester University Press and gendered uses of technology in *Goldeneye* for Emerald Publishing. In his spare time, he is an avid board game player.

Robin Dixon is an Honorary Associate of the Department of Theatre and Performance Studies, Sydney University. His primary area of research interest is the stagecraft and performance of ancient Roman theatre, but he pursues a range of interdisciplinary research interests, working most recently on improvisation and distributed cognition in historical theatre practices.

Riccardo Fassone is Senior Assistant Professor at the University of Torino, Italy. His main research interests are the history and theory of video games and the relations between games and other media. In the past, he has worked as visiting researcher at the Georgia Institute of

Technology and as a Research Fellow at The Strong National Museum of Play. He is the author of *Every Game is an Island* (Bloomsbury, 2017) and *Cinema e videogiochi* (Carocci, 2017). He is also a game designer, and is currently working on a number of urban and site-specific games with the Dotventi collective, on a board game on the birth of the state of Israel with Giaime Alonge, and on a board game on Alighieri's *Divine Comedy* with Giaime Alonge and Claudio Giunta.

Martin Gibbs is an Associate Professor in the School of Computing and Information Systems, the University of Melbourne. His research interests lie at the intersection of Science Technology Studies (STS) and Human Computer Interaction (HCI). Current projects include: digital commemorations and the cemetery of the future; technologies and the home; games and materialities. His recent co-authored book, *Death and Digital Media*, was published by Routledge in 2018 and his forthcoming co-authored book, *Digital Domesticities*, will be published by Oxford University Press in 2019.

Owen Gottlieb, Ph.D. is Assistant Professor of Interactive Games and Media at the Rochester Institute of Technology. He is the founder and lead researcher at the Initiative in Religion, Culture, and Policy (RCP) at the RIT MAGIC Center. MAGIC is RIT's research laboratory and game studio (Spell Studios). Gottlieb's mobile augmented reality game, *Jewish Time Jump: New York* was nominated for Most Innovative game at the 2013 Games for Change Festival. His team's latest game series, *Lost & Found* which teaches about medieval religion legal systems was featured at the 2018 Smithsonian SAAM Arcade, The Boston Festival of Independent Games (FIG), and won Best Non-Digital Game at the 2018 International Meaningful Play Conference and a Bronze Medal at the International Serious Play Competition. He is a member of the International Game Developers Association, the Central Conference of American Rabbis, and the Writers Guild of America, West.

Esther MacCallum-Stewart is an Associate Professor of Games Studies at Staffordshire University, UK, and Chair of the 2024 Worldcon (Glasgow, UK). Her work examines the ways in which players understand narratives and the stories they tell and she has written widely on this subject. In 2016 she was nominated for a Hugo Award, and in 2019 her edited collection of work on Iain M Banks was longlisted for a BSFA award. Her work, both academic and as an organizer of international events, aims to bring players, fans and academics around the world together in meaningful ways, and to encourage a love of science fiction, fantasy and games.

Souvik Mukherjee is Assistant Professor and Head, Department of English, Presidency University, Kolkata. His research focuses on videogames and storytelling as well as how videogames function as postcolonial texts. He is the author of two monographs, *Videogames and Storytelling: Reading Games and Playing Books* (Palgrave Macmillan 2015) and *Videogames and Postcolonialism: Empire Plays Back* (Springer UK 2017). Souvik has also coedited the Open Library of Humanities special collection 'Postcolonial Perspectives in Games Studies' and has published on a wide range of topics related to videogames.

C. Thi Nguyen is Associate Professor of Philosophy at Utah Valley University. His book, *Games: Agency as Art,* is forthcoming from Oxford University Press. He's published widely on the philosophy of games, is co-editor of the forthcoming *Routledge Handbook of the Philosophy of Games*, and a founding editor at the *Journal of the Philosophy of Games*. His research, in general, concerns how aspects of our agency and rationality are embedded in our social structures, institutions, and artifacts.

Malcolm Ryan is a Senior Lecturer in Computing at Macquarie University. His research focuses on the design of ethical decision-making problems in both tabletop and video games.

He is the designer of *The Road*, a table-top card game focusing on difficult ethical choices that arise in a post-apocalyptic survival scenario.

Melissa J. Rogerson has been researching boardgames for five years and playing them for many more. Her PhD research examined the hobbyist experience of modern boardgames. Her research has been published in *Games and Culture*, as well as at numerous international conferences. Active in organizing academic and boardgaming events, she has translated popular boardgames from German to English, was a founding member of Boardgames Australia, and is a member of the jury for the International Gamers Awards.

Ian Schreiber has been in the video game industry since the year 2000, first as a programmer and then as a game designer. He has worked on six published video game titles and two serious game projects, has co-authored two books on games, and is a co-founder of Global Game Jam, the largest in-person game creation event in the world. Ian has taught game design and development courses at a variety of two-year and four-year schools, and is currently an Assistant Professor at Rochester Institute of Technology.

Wally Smith is an Associate Professor in Computing and Information Systems at the University of Melbourne, investigating the design and use of digital technologies and their broader social foundations and implications. His recent projects are in the areas of health informatics, digital heritage, and the deceptions of artificial intelligence. He publishes widely in journals including Social Studies of Science, Computer-Supported Cooperative Work, and Australian Historical Studies and is a co-editor of the forthcoming '*Routledge International Handbook of New Digital Practices in Galleries, Libraries, Archives, Museums and Heritage Sites*'.

Joe A. Wasserman is a doctoral student in the Department of Communication Studies at West Virginia University. His research is on learning via gameplay, with an emphasis on systems thinking outcomes and the role of modality and materiality in playing and learning processes. His research has been published in Simulation & Gaming, Computers in Human Behavior, Media and Communication, Psychology of Popular Media Culture, and Poetics.

José P. Zagal is a full Professor with the University of Utah's Entertainment Arts & Engineering program. He is the author of *Ludoliteracy: Defining, Understanding, and Supporting Games Education* (ETC Press, 2010) and editor of *The Videogame Ethics Reader* (Cognella, 2012). More recently he co-edited, with Dr. Sebastian Deterding, *Role-Playing Game Studies* (Routledge, 2018): a multi-author collaboration that provides an in-depth examination of role-playing games across different media and disciplinary contexts. José currently serves as Editor-In-Chief of the peer-reviewed journal *Transactions of the Digital Games Research Association*. In 2016 José was honored as a Distinguished Scholar by the Digital Games Research Association (DiGRA) for his contributions to the field of games research. José received his PhD in Computer Science from Georgia Institute of Technology in 2008.

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