

Between Cardboard and Computer:

The hobbyist experience of modern boardgames

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Abstract

Boardgames date back to at least 3500 BCE, yet little attention has been paid to the experience of playing them. Today, boardgames are increasingly popular, with increasing visibility in popular culture as well as significant increases in sales. Although they are sometimes dismissed as an activity for children, boardgames have attracted dedicated hobbyists who have accrued significant knowledge of the practices, mores, history and culture of boardgaming.

The aim of this thesis is to understand how hobbyists experience and practice boardgaming. In particular, the thesis seeks to understand how serious leisure hobbyists describe and define their hobby and how this guides and informs their practices. Further, I explore the effects of digitisation on the hobby, and the role of the boardgame's materiality not only in hobbyists' descriptions of their practices but also during play. I achieve this aim through a mixed-methods, constructionist, qualitative, approach which privileges the opinions and behaviours of hobbyist boardgamers and intentionally examines gaming from the different perspectives of games, gamers and gaming. In doing so, I address a significant gap in the understanding of boardgames as playable, played artefacts and as a site of interaction.

Study 1 focuses on digitisation of boardgames. In this study I identified three key tensions around the conversion of boardgames to digital format, where boardgamers' and developers' priorities and wishes conflict. I argue that these tensions can inform not only the digitisation of boardgames but also the development of natively digital games.

Study 2 focuses on hobbyist boardgamers. I found that hobbyist boardgamers enjoy sociality, intellectual challenge, variety, and materiality in boardgaming, and identified a range of specialist practices that create and reflect hobbyist expertise. This study examines some of the differences between hobbyist and casual boardgamers. It

shows that the values that hobbyist boardgamers espouse are reflected and embedded in their hobbyist practices.

Study 3 focuses on the experience of play. This study examined and observed the play of boardgames. It shows that the materiality that hobbyist boardgamers value so highly plays an important role in the overall cognitive system of the game. Moreover, it shows that even competitive play is a deeply and fundamentally cooperative activity.

Through these three studies, I highlight that materiality plays an important role not only in the physicality of a boardgame, but in hobbyist boardgamers' enjoyment of and enthusiasm for their hobby and in the play of a boardgame. I broaden the focus of boardgame research to see the game as more than an artefact but also an assemblage of play. The thesis contributes a deep understanding and rich description of the experience of play as a site of distributed cognition, and of cooperation, as game rules and components, players, and situated activities and interactions are combined and negotiated. It demonstrates that cooperation is a necessary enabler of competitive play, and that it permeates the spectrum of play activities. This has ramifications not only for the design of boardgames but for the design of digital games and of other collaborative activities. .

Declaration

This is to certify that

- the thesis comprises only my original work towards the PhD except where indicated in the Preface,
- due acknowledgement has been made in the text to all other material used,
- the thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

[signed]

Melissa Jane Rogerson

Preface

Work carried out in collaboration with others

This thesis is submitted as a Thesis with Publication. Accordingly, Chapters 4, 5, 7, and 8 all represent work that has previously been published. In addition, as noted in the text, sections of Chapter 6 have previously been published although the chapter in its entirety is a new piece of work in this thesis.

My supervisors are co-authors on each of those pieces of work, as well as on the other papers listed in Appendix B. Nevertheless, I was the primary author of each. I designed the research project as well as the program of work that is represented in this thesis. I conducted the data generation and data analysis. I wrote the first draft of each paper and edited it following discussion with my supervisors and (later) feedback from reviewers. I approved and submitted the work for publication, and I take responsibility for the accuracy and integrity of the work¹. Any errors or inaccuracies in the resulting papers are, of course, my own.

Prior work

No material in this thesis has been submitted for other qualifications, and no work was carried out prior to my enrolment in the degree.

Editorial assistance

With the exception of Chapter 7, which was copyedited by the *Games and Culture* journal prior to publication, I have received no editorial assistance in preparation of this thesis.

¹ See <http://www.icmje.org/icmje-recommendations.pdf>

Multi-authored publications

I have described the contribution of my supervisors to the various chapters in this thesis above. Additional context is provided in the introduction to each chapter. A full list of my publications is provided in Appendix B.

In addition to the full chapters listed below, my supervisors were co-authors of the following papers whose content is reflected, albeit not verbatim, in this thesis:

Chapter 3:

- Rogerson, M. J., Gibbs, M., & Smith, W. (2017, 14-18 October, 2017). What can we learn from eye-tracking boardgame play? *CHI PLAY '17 Extended Abstracts Extended Abstracts Publication of the Annual Symposium on Computer-Human Interaction in Play*, Amsterdam, NL. (see Appendix G)
- Rogerson, M. J., Gibbs, M., & Smith, W. (2017). Using gaze data in understanding tabletop boardgame play. Paper presented at the Game Research Methods Symposium, Sydney, AU.

Chapter 6:

- Rogerson, M. J., Gibbs, M., & Smith, W. (2017). Me and My Shelfie: Hobbyists' domestication of boardgames. Paper presented at DiGRA 2017 International Conference, Melbourne, Australia. (see Appendix I)
- Rogerson, M. J., Gibbs, M., & Smith, W. (2017). Exploring the Digital Hinterland: Internet Practices surrounding the Pursuit of Offline Hobbies. Paper presented at the 18th Annual Conference of the Association of Internet Researchers. Tartu, Estonia. (see Appendix H)
- Rogerson, M. J., Gibbs, M., & Smith, W. (2016). Between Digital and Material: Being a Boardgamegeek. Paper presented at the DiGRA Australia National Conference, Swinburne University, Melbourne, Australia.

Conference papers that led to full papers (presented as chapters):

- Rogerson, M. J., Gibbs, M., & Smith, W. (2015). "Funky little amoebas and poos" – Controlling and customising the play experience of boardgames.". Paper presented at the DiGRA Australia National Conference, Sydney, Australia.

- Rogerson, M. J., & Gibbs, M. (2015). Finding Time for Tabletop: Boardgame Play and Parenting. Paper presented at the Adult Play Seminar (Tampere Game Research Lab International Spring Seminar), Tampere, Finland.

Publication status of all chapters presented in article format

Chapter 4: Digitising Boardgames: Issues and Tensions

- Published by Digital Games Research Association, in *DiGRA '15 – Proceedings of the 2015 DiGRA International Conference*, May, 2015
- Rogerson, M. J., Gibbs, M., & Smith, W. (2015). Digitising boardgames: Issues and tensions. *DiGRA 2015; Diversity of Play – Proceedings of the 2015 DiGRA International Conference*, Lüneburg, Germany.

Chapter 5: “I Love All the Bits”: The Materiality of Boardgames.

- Published by ACM in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, May, 2016
- Rogerson, M. J., Gibbs, M., & Smith, W. (2016, May 07 - 12). “I love all the bits”: the materiality of boardgames. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, San Jose, CA, USA*. New York, NY: ACM. doi:10.1145/2858036.2858433

Chapter 7: Finding Time for Tabletop: Board Game Play and Parenting

- Published by SAGE publishing in *Games and Culture*, May, 2018 (first published online July 8, 2016)
- Rogerson, M. J., & Gibbs, M. (2018). Finding Time for Tabletop: Boardgame Play and Parenting. *Games and Culture*, 13(3), 280-300. doi:10.1177/1555412016656324

Chapter 8: COOP

- Published by ACM in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Montreal QC, Canada.*, April, 2018
- Rogerson, M. J., Gibbs, M. R., & Smith, W. (2018). Cooperating to Compete: The Mutuality of Cooperation and Competition in Boardgame Play. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Montreal QC, Canada*. New York, NY: ACM. doi:10.1145/3173574.3173767

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I am enormously grateful to the following organisations whose financial support made this research possible. Their contributions have enabled me to attend a range of conferences and symposia, to meet many of the people whose work I have cited, and to present my research. Attending conferences, hearing the inspiring presentations of others in the field, presenting my own findings and receiving thoughtful feedback has made me a better researcher and has helped me connect to research communities.

- My doctoral research was supported by an Australian Government Research Training Program Scholarship.
- I also received a top-up scholarship from the Microsoft Research Centre for Social NUI.
- I was awarded financial support for travel to conferences from Google through three Google PhD Travel Scholarships.
- I also received a Melbourne Abroad Traveling Scholarship (MATS) to support conference attendance.

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Like the passionate boardgamers I interview for this thesis, boardgames have been a significant and ever-present part of my life. I am grateful to the many people I have gamed with, and to the designers, artists and publishers in the genre. Specifically, I owe an enormous debt of gratitude to the hobbyist boardgamers who participated in this research.

If competitive boardgaming is a cooperative activity, so too is completing a PhD. I feel enormously fortunate to have completed my PhD in the Interaction Design Lab and Microsoft Research Centre for Social NUI at The University of Melbourne. The intellectual rigor and encouragement that I have found here, together with the collegial atmosphere and the friendships I have made, have provided a supportive and positive scholarly environment. More broadly, I am grateful to have received support from the School of Computing and Information Systems, its leadership, academic and administrative staff, and student body. My PhD cohort buddies have been an essential part of the last four years – Jane Mavoa, Sarah Webber, Fraser Allison, Fernando Estrada, Lucy Sparrow, Ronny Andrade, Toni McLennan, David Cumming, Deepti Aggarwal, Romina Carrasco, Hasan Shahid Ferdous, Zhanna Sarsenbayeva, Kagonya Awori, Dana McKay, Ikee Dimaguila, Ahed Aladwan, Joshua Newn, Unni Krishnan, Niels van Berkel, and Kayla Heffernan. There are so many of us now, I hope that I have not forgotten anybody! Thank you, too, to the many academics in the department, in HCI, and in Game Studies who have inspired and encouraged me.

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My friends deserve thanks and much, much more. I can't name you all but must single out a few. Stew Woods, who I fittingly met in the lines to enter *Spiel* in Essen in 2008, showed me that studying boardgames was a possibility. Hanno Girke and Uwe Rosenberg took a chance on an unknown Australian boardgame translator. Catie and Jon Redshaw let us tag along on their big trip to *Spiel*. Our "German daughter" Matilda Mannherz and her family Agi, Uwe, and Katinka never fail to make us welcome and to recommend "crap games" that we – and they – will love. Aldie and the team at BoardGameGeek maintain a site that is both a friendly community and an exhaustive database and boardgame researcher's best friend.

Which brings me to my family. My mother, Judy, has at times been completely neglected, but has borne it with good grace. She recently confessed that she doesn't even like games very much, so she must surely hate the words "my thesis" by now. My magnificent daughters, Claudia and Eleanor, each have their own taste in games and never back down from a challenge. I am so very, very proud of them both and have loved watching them grow into thoughtful, intelligent, and fun-loving young women. Their German is more than up to the task of playing and teaching games, they have coped admirably with mum's teaching and travel schedules – and they are both – terrifyingly – now older than I was when I first met their dad at my first games convention in 1983. And to that dad and husband, Fraser, my favourite opponent and partner in all things. Thank you for exploring this hobby with me over so very many years, for filling out the corners of my own obscure knowledge, and for your understanding and support throughout this PhD journey, even when it meant I couldn't play as many games as we would have liked. And thank you for not rolling your eyes too violently when I bought them anyway. You told me (repeatedly) that I should mention *Power Grid* (Frieese, 2004) in my thesis; consider it done.

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Chapter 1.

Introduction

1.1. Introduction and Context

We are experiencing a “renaissance” (Booth, 2015, p. 1) or “golden age” of boardgaming (Chen, 2013; T. Cross, 2017; Duffy, 2014; Fitzpatrick, 2016). Although boardgames are sometimes presented as the old-fashioned, semi-obsolete cousins of videogames, the industry continues to grow, with a wealth of new titles and significant commercial success on crowdfunding platforms and across the retail sector (R. Hutchins, 2017). Industry analysts expect the global boardgame market to continue to grow by 29% annually until at least 2021, and attribute this at least in part to the sense that “the target audience for board games has changed from children to adults” (Technavio, 2016).

At the same time, modern boardgames are becoming visible in other areas of popular culture. One example is in their presentation in popular mainstream media. Both real and imagined boardgames are often used as a shorthand symbol for “nerd” on television. Popular actors like Rich Sommer (*Mad Men*, *American Pie*), and Wil Wheaton (*Star Trek*, *The Big Bang Theory*) are revealing themselves to be boardgame aficionados. As “geekiness” is increasingly mainstreamed (Woo, 2018, p. 11), boardgames, like other forms of game (MacCallum-Stewart, Stenros, & Björk, 2018, p. 172) are becoming more visible.

The materiality of boardgames and its significance for play is a focus of this thesis. The practices of boardgaming – of play, of collecting, and of storage – are deeply and inherently material – but they are also, increasingly, digital. It is also about interactions, describing the way that hobbyist boardgamers build and contribute to a sense of a community of boardgamers, as well as the practical ways that they use to negotiate the relationship between competition and cooperation.

Boardgames as a cultural practice date back thousands of years, yet little attention has been paid to the experience of playing them. A further focus of this thesis is the hobbyist experience of boardgaming. It focuses attention on hobbyist boardgaming as a social practice situated in a particular social world (Clarke & Star, 2008; Unruh, 1980), using the framework of Human-Computer Interaction (HCI) to examine the practices, behaviours and mores of that context. I present the values and practices of the serious leisure hobbyist boardgamer² – reflecting on hobbyists themselves as well as on the games they play and the activities and interactions of gaming.

1.2. Problem

Despite their long history and renewed interest, limited research attention has been paid to the play experience of boardgames, and only marginally more to the games themselves and to their players. An exception is Stewart Woods's work on 'Eurogames' (Woods, 2012) which considers the history of the genre and profiles the boardgame enthusiast. Other research focuses on the history and archaeology of games as systems or artefacts, on games as educative tools or challenges for programming, on the design of games and their underlying systems and mechanisms, on the use of games as tools for research or behavioural change, and (rarely) on understanding players. Throughout this research, the game itself is presented as an artefact, as a system, or as a text, and its dedicated players – when they are considered at all – as "fervent hobbyists" (Chen, 2013; Woods, 2012). In contrast, this thesis focuses on the hobbyist experience of boardgaming, on the materiality of the games, and on the interactions that occur before, during and after play.

The purpose of this thesis is to fill a gap in knowledge of the habits, practices and activities of hobbyist boardgamers as serious leisure practitioners. This extends Woods's work through careful observation and through its focus on the idiosyncracies and practices of the individual participants. It is informed by my understanding of boardgames as both artefact and system, and by the selection of research participants from within hobbyist boardgaming communities. It singles out two specific situations

² For the sake of brevity, I use "hobbyist boardgamer" throughout this thesis.

for detailed attention. Firstly, in the light of increasing interest in digitisation of boardgames and the development of hybrid games that combine traditional boardgames with digital tools, I seek to understand the relationship between a physical boardgame and a digital representation of that game. Secondly, I seek to explore the nature of boardgame play, which is entwined with notions of materiality and the values that hobbyists place on it.

1.3. Aim & Scope

The aim of this thesis is to understand how serious leisure hobbyists experience and practice boardgaming. At a time when the hobby of boardgaming is experiencing tremendous growth, it considers what it is to be a hobbyist boardgamer. By examining hobbyists' practices and knowledge in regard to themselves, to the games that they play, and to the experience of playing a game, I turn attention to the broader practices that are not themselves gaming but nevertheless surround and enable it.

The focus of this thesis is the hobbyist experience. Rather than investigating the practices or beliefs of casual boardgamers, this research understands boardgames from the perspective of the dedicated hobbyists for whom boardgames are a serious leisure pastime (Stebbins, 1982). This reveals information not only about their values and opinions but also about the nature of hobbyist expertise – the set of practices and knowledge that are common to hobbyists and that serve not only as a form of shorthand but also as a symbol of group membership.

Importantly, boardgamers are not solitary. The overtly social nature of boardgaming requires that players congregate in groups to play. They also congregate in face to face and online groups to discuss boardgames and to mediate their practice in their hobby through collecting and curating boardgames, through tracking and logging their plays, and through researching new games that they might be considering adding to their repertoire (see Chapter 6). In doing so, they engage with the social world of hobbyist boardgaming – the large, amorphous, unaffiliated mass of hobbyist boardgamers which surrounds and contains individual boardgaming clubs and groups.

This research has intentionally examined the hobbyist experience of boardgaming from the three perspectives suggested by Björk (2008)³. It considers the boardgames themselves, the hobbyist boardgamers who play them, and the pastime of boardgaming. In the tradition of HCI, this recognises that it is not only artefacts that are of interest but also users and the interactions that they inspire. My goal in conducting this research is to describe and celebrate the inherent joy and pleasures that boardgames bring to hobbyists, rather than to instrumentalise them in service to broader goals (M. Carter, Downs, Nansen, Harrop, & Gibbs, 2014). Accordingly, this research program is constructionist – it is deeply and fundamentally rooted in the lived experience of hobbyist boardgamers. Its aim was not to build or test a model but to develop understanding of the habits, beliefs and practices of participants. Nevertheless, I recognise that greater understanding of the boardgaming experience can inspire and encourage new and thoughtful approaches to different types of games, including both digital and hybrid games, as well as contributing more broadly to design.

1.4. Significance of the study

To understand the scope of modern boardgaming, this research focuses on serious leisure hobbyist boardgamers as enthusiasts of and evangelists for modern boardgames. It examines the nature of these people's engagement with boardgames to build a picture of their particular hobbyist expertise. Building on Woods' (2012) description of hobbyist boardgamers, it explores their motivation and understands how those motivations translate into behaviours and interactions. Like quilting enthusiasts, participants have been "flattered that I wanted to interview them" (Stalp, 2006, p. 116) and keen to be involved with this research. Such enthusiasm is an extension of their fervour for their hobby.

Inspired by Björk (2008), this research adopts the three perspectives of games, gamers and gaming as critical to its success. This approach to understanding interdisciplinary game research suggests that at its core it emerges from one of three perspectives: that of the *game*, of *gamers*, or of *gaming* (Björk, 2008). Rather than

³ A similar approach is offered by (D. Johnson, Wyeth, & Sweetser, 2013) who propose the "people-game-play" model for understanding the link between videogames and wellbeing.

simply using the perspectives to understand others' research, I have consciously and deliberately applied Björk's approach to this research, studying the experience of boardgaming from each of these three perspectives. The perspectives demonstrate the relevance and interest of boardgames to HCI, to Game Studies, and to the Serious Leisure Perspective, as a set of artefacts and practices that are both inherently interesting, complex and meaningful, and that inspire complex interactions.

In HCI, which studies people's interactions with technology, there has been no previous work that focuses on understanding the hobbyist boardgamer as user of the "game". This research uses ethnographic and ethnomethodologically-inspired HCI techniques, including interviews and direct observation, to extend understanding of the boardgaming experience. Chapters 5, 6 and 8 show that the materiality of boardgames is important to the boardgame hobbyists and to the overall experience of boardgaming. This observation comes not only from interviews but from detailed observation of play sessions, as well as from the novel implementation of a wearable gaze tracker to understand the experience of playing a tabletop boardgame. Moreover, Chapters 4 and 8 show that the literature of Computer-Supported Collaborative Work (CSCW), which studies the lived practices of coordination, can extend understanding of what happens when people play a boardgame, considering questions of what it means to play, and to be a player.

This work uses the Serious Leisure Perspective (SLP) (Stebbins, 2012) as a theoretical framework for understanding hobbyist boardgaming through the motivations and practices of boardgamers. Although the SLP has previously been applied to specific gaming activities such as the play of Chess and Role-Playing games, hobbyist boardgaming provides a new and novel site for understanding and extending the SLP. In particular, I propose that hobbyist boardgamers' engagement is not restricted to a single activity as "players of sports and games", as proposed by the SLP, but rather comprises a set of core activities that extend to the other elements of hobbyist activity.

This thesis provides an overview of how serious leisure hobbyists experience and practice boardgaming now, and acts as a point of comparison for future research as the nature of games and gaming develops. Further, it highlights key – and often

overlooked or undervalued – elements of the hobbyist and gameplay experiences which can inform future development of games of all types. To my knowledge, this is the first piece of research to examine the experience of hobbyist boardgame play from the perspective of either HCI or Game Studies. Further, it is the first study to use the three perspectives of games, gamers and gaming to create a picture of what hobbyist boardgame play looks like in the present day and to unpack the importance of materiality in the experience and enjoyment of boardgaming.

1.5. Overview of the thesis

This section outlines this structure of this thesis and introduces the key themes discussed. This thesis is presented as a thesis with publication. This format allows for inclusion of prior or in-progress publications as is, subject to certain criteria (Graduate Research Hub, n.d.). Chapters 4, 5, 7, and 8 are all prior publications. In each case, I conducted the research, planned and wrote the first draft of the paper, and made subsequent changes after discussion with my supervisors and after feedback from reviewers and editors. More information about the process is included in the preamble to each chapter. My advisory committee has approved these papers' inclusion in this thesis.

The first part of this thesis locates it as an interdisciplinary scholarly work at the intersection of HCI and Game Studies. This comprises this introduction, a Review of Related Work (Chapter 2) and a description of the underlying Methodology and Methods used in this research (Chapter 3). Chapter 2 presents an overview of relevant literature and situates this thesis in the context of prior research into games generally and boardgames specifically, examining different approaches and understandings. It identifies key issues within the three perspectives of games, gamers, and gaming, focusing on the materiality of games, the hobbyist expertise and serious leisure practices of gamers, and the broader lived practices – including community participation – of gaming. This chapter establishes not only the background to the thesis but the key disciplinary contexts and underlying frameworks that have contributed to it.

Chapter 3 describes the methodology and methods used in this research. It situates this research as constructionist and interpretivist and outlines the symbolic

interactionist framework that has informed my research approach. It describes the methods used for data generation and analysis and considers their alignment to my research framework. Further, it discusses my own role in the study and its effects on the research and considers ethical implications of this work.

Research findings in this thesis are organised not strictly by study but by topic. Chapters 4 and 5 present research on Boardgames. Chapter 4 turns attention to the first of the three perspectives, that of Games. Through case studies of three popular boardgames – *Agricola*, *Puerto Rico*, and *Ascension* – it investigates the transformation that a boardgame undergoes when it is digitised, and how that affects play not only of a digital game but also of its physical equivalent. It identifies three key tensions that surround this practice: the literality of the interaction metaphor, the importance of housekeeping chores as a form of articulation work, and the types of information that are created through digital play. I return to these issues in Chapter 8, which demonstrates that the granularity of the material components is used by players to plan, make sense of, and enact the game, as well as in Chapter 5 which shows that players place significant value on interactions with a game's pieces.

Chapter 5 focuses on hobbyist boardgamers' interactions with games as a material artefact and with play as a material practice. It shows that boardgamers value different material attributes of the game and its play – the box, the components, the immediate space of play, and the broader domestic environment – and describes how they seek to protect and enhance these artefacts and environments.

Chapters 6 and 7 describe what it means to be a hobbyist boardgamer. Chapter 6 considers boardgamers' engagement with the hobby, introducing what I term the four pillars of hobbyist enjoyment: sociality, intellectual challenge, variety, and materiality. This chapter demonstrates that hobbyist boardgamers value different elements of the game experience than casual boardgamers, and that 'sociality' is understood differently by these different groups of gamers. It turns attention to hobbyists' reported practices of boardgaming, which include a range of forms of engagement that are not playing a game. Lastly, it considers the ways that hobbyist boardgamers interact with their games, building on the discussion in Chapter 5 to describe the material practices of collecting and storing games. Together with Chapter

7, this chapter demonstrates the value that hobbyist boardgamers place on boardgaming and its importance in their lives, and grounds interest in the materiality of boardgames in the lived experience of their players.

Chapter 7 explores these dimensions in a specific context – considering boardgamers who are parents and discussing the ways in which they create time for their hobby without compromising their responsibilities to their family. As Brown and Stenros note, “This article adds a much needed perspective on adults who do not stop or “grow out of” playing games but rather develop strategies for enfolding playtime into increasingly demanding schedules.” (A. M. L. Brown & Stenros, 2018, p. 217). It builds on the four pillars of hobbyist enjoyment, described in Chapter 6, showing that different strategies maintain or reduce the sociality, intellectual challenge, variety and materiality that hobbyist boardgamers value. It highlights the trade-off that occurs between these four dimensions when players adapt the context, time, location and medium of play to accommodate their family responsibilities. To hobbyist boardgamers, it is better to play something than not to play, even when these compromises must be made.

Chapter 8 addresses the experience of gaming – of *playing* a boardgame. Using a novel method for understanding the experience of boardgaming, introducing a wearable gaze tracker as a meaningful and interesting tool for qualitative interpretivist research, this chapter turns attention to the relationship between cooperation and competition and the ways in which this is important in gameplay. It demonstrates that cooperation is fundamental to even competitive play. Extending earlier work by McEwan and Gutwin (2016), this chapter shows that cooperation between players is not restricted to manipulating the pieces and interpreting the rules but extends to evaluating different action possibilities and can even influence the opinions players form about their opponents’ personalities. Moreover, it extends not only between and amongst the players but also to the game components themselves, which players use not only to enact the game but to make sense of it. Components allow the player to plan for future actions or strategies, offloading key cognitive work of calculation and memory. Building on the importance of the game’s materiality, this chapter demonstrates that CSCW provides a useful lens for examining the ways in which understanding of the game’s state is distributed amongst not only the players but also

the materials. It extends the use of distributed cognition, well established in studying workplaces and practices, to the play of boardgames, showing that the cognitive system of the boardgame is distributed between and amongst the players, the game components, and even the constitutive rules of the game (Salen & Zimmerman, 2004, pp. 130, 146-147).

Finally, Chapter 9 contains a discussion of the overall themes and findings of the thesis and presents my final conclusions, together with consideration of their significance and limitations. It returns to the four Research Questions that have informed this research: the values that hobbyist boardgamers place on boardgaming, the way that they 'live' those values, the impact of digitisation and digital technology on boardgaming, and the influence of materiality on play.

A key theme of this thesis is therefore the importance and many facets of materiality in boardgame play. Materiality has intrinsic value to boardgamers, but it also matters in the context of play and of making sense of a game. A game's components are not just important for theme and for looking pretty; they attract players, enact the game, and enable distribution of cognitive load and processes. Nevertheless, boardgamers may compromise on the appeal of materiality by playing a digital game when they are otherwise unable to play face to face.

This research examines the hobbyist experience of boardgaming and the specific knowledge and expertise of the hobbyist boardgamer. It identifies a broad range of hobbyist practices that extend beyond play but nevertheless comprise the hobbyist experience. Rather than instrumentalising play, this work sets out to understand it and – like the hobbyists who have participated in this research – to celebrate it.

Chapter 2.

Review of Related Work

2.1. Introduction

This chapter introduces and discusses the literature relating to the topic of boardgames, boardgame players, and the experience of boardgaming. It situates the subject matter of the thesis in relevant history of both the study of games and the development of boardgames, as well as in the disciplines of Game Studies and HCI. Further, it introduces concepts and frameworks that give context to the work of this thesis.

“Astonishingly, in Game Studies, *Spiel* [game] is almost exclusively associated with computer games – as if the culture of play had first been invented with *Pong* – and the nexus between computer games and the tradition of boardgames and parlour games is rarely represented.” (Strouhal, 2018, p. 237, my translation)

In both Game Studies and HCI, games research has to date focused on digital games. This is often noted by scholars of games that are other than digital, as in the above quote. Research on boardgames has to date focused relatively narrowly on design and gameplay elements (E. Adams & Dormans, 2012; Zagal, Rick, & Hsi, 2006), on understanding players (Chen, 2013; Kopczynski & Smith, 2015), on the history of such games (H. J. R. Murray, 1952; Parlett, 1999), on the evolution of new methods for conducting such research (Frey, 2016), and on boardgames as transmedia (Booth, 2015; A. Brown & Waterhouse-Watson, 2014, 2016). Throughout this research, the game itself is presented as an artefact, as a system or as a text.

An analysis of the research paradigms of 178 papers on games, gaming and play presented at the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) found that this research could be categorised as either “operative”, “epistemological”, “ontological” or “practice” (M. Carter, Downs, et al., 2014). Over 40%

of the papers studied used games, play, or games research as an *operative* tool “for achieving extrinsic goals or objectives that are peripheral to what is normally within the bounds of game playing” (M. Carter, Downs, et al., 2014, p. 32). An example is the development of MOL, “a European-style board game to teach organic chemistry” (Triboni & Weber, 2018). *Epistemological* research uses games and play “to generate insights into other areas and topics of study” (M. Carter, Downs, et al., 2014, p. 33). An example is the use of a game-like behavioural experiment to collect and assess trust data (de Siqueira Braga, Niemann, Hellingrath, & de Lima Neto, 2017). *Ontological* research, in contrast, is concerned with “the design and evaluation of the ontology of games as objects” (M. Carter, Downs, et al., 2014, p. 33) and comprises research into the design of games and play as well as game interfaces and controllers. Lastly, *Practice* research focuses “on the experience and consequent interactions between users that occur as a result of interaction with the game, or as a result of entering a lusory attitude” (M. Carter, Downs, et al., 2014, p. 33). Both Operative and Epistemological research use games instrumentally, to achieve an external aim or as a research tool. These approaches “start from the assumption that play must serve something which is *not* play” (Huizinga, 1950 [1938], p. 2) and turn games into tools for doing or learning about something else, rather than examining what they can tell us about play and the act of gaming. In doing so, they lose a fundamental element of what it is to be a game: “When we instrumentalize games in pursuit of something else, we bypass the beauty, the wonder, the *process* of play in blind pursuit of a rigid goal—as noble as that goal may be.” (Zimmerman, 2013, p. xii).

In this thesis, the beauty and wonder of play are paramount. The three research studies described here adopt different perspectives and methods, but are always driven by the underlying philosophy that play and games are sufficient to motivate and guide a research program. This thesis discusses *what* people play, *why* they play, and *how* they play, seeking to understand the activities of boardgaming, rather than to harness them in service to some other goal.

2.2. Game Studies: Perspectives on games and play

The field of Game Studies has been dominated by the study of digital games. In fact, the main organisation for the study of games is the *Digital Games Research Association* (DiGRA) (my emphasis), and the major conferences DiGRA, Foundations of Digital Games and CHI PLAY are explicitly named for their focus on the study of digital games or computers. Recently, sixteen years after its “Year One” (Aarseth, 2001), the journal *Game Studies* changed its editorial policy to explicitly accept articles on non-digital games (Aarseth, 2017b), although its subtitle still proclaims it “the international journal of computer game research” (see also Deterding, 2017, p. 523). Leaving no doubt about this change in direction, the editorial spelled out (Aarseth, 2017b):

The move from computer games to games in general is about inclusion. The affected research communities already overlap, to the extent that it makes no sense to formally exclude them with the ‘computer’ or ‘digital’ label, which never made much historical, scientific, or intellectual sense at all.

This section outlines research approaches and discusses the interdisciplinarity of the study of games. It examines what it means to study games and considers the ontological question of what we define as a game. These different perspectives provide an important basis for understanding the study of games and, therefore, provide the foundations for the discipline of Game Studies. The work of this thesis adopts the perspective of games as playable sociocultural assemblages and has the aim of increasing knowledge not only of games but also of the players of games and of the situation of gaming.

2.2.1. Interdisciplinarity

Many scholars have described the inter- and multi-disciplinary nature of the field (Aarseth, 2001; Copier, 2003; Deterding, 2017; Mäyrä, 2009, 2014; Mäyrä & Sotamaa, 2017; Mäyrä, Van Looy, & Quandt, 2013; Waern & Zagal, 2013). Game theory is studied in mathematics and economics (J. M. Buchanan, 2001; Fattah, Aickelin, & Wagner, 2018; Rabin, 1993), the cultural history of games is studied by historians and anthropologists (Huizinga, 1950 [1938]), game systems are modelled by computer scientists (Thakar, 2015), game narratives are read as texts in the tradition of literature studies (Arnaudo, 2018; Begy, 2013) or translation studies (Evans, 2013; Tomková, 2014),

player behaviours are rooted in cognitive science and psychology (Bostan, 2016; Gobet, Retschitzki, & de Voogt, 2004; Linderoth, 2013; Poeller, Birk, Baumann, & Mandryk, 2018), game designs are studied in human-computer interaction (M. Carter, Downs, et al., 2014), game literacies are studied from an educational perspective (Gee, 2003; Zagal, 2010) or from the perspective of library science (Nicholson, 2010), games are studied as media (Booth, 2016), and Science and Technology Studies can help us to understand the boundaries of the discipline (Copier, 2003). Mäyrä (2009, pp. 318-319) notes that the methods of study in each of these disciplines vary; he calls for *methodological triangulation*, or the combination of different research approaches to gain a variety of perspectives on games. As discussed in Chapter 3, research becomes inter- rather than multi-disciplinary when methods and theories are synthesised and integrated across disciplines (Holbrook, 2013, p. 1867; Lattuca, 2001, p. 20).

A practical perspective is presented by Björk (2008). He notes that games research is aligned with various disciplines “with well-developed theories and practices of work” (Björk, 2008, p. 64). To accommodate this, and to reflect “the underlying common research fields that highlight various research interests” (Björk, 2008, p. 65), he proposes that instead of attempting to understand games research in the context of its home discipline, scholars can consider its alignment with one or more core game concepts: games, gamers, and gaming. These perspectives align loosely with the possibility in HCI to focus on artefacts, on users, and on experience, as well as with the people – game – play model proposed by D. Johnson et al. (2013). Whilst Björk presents these three concepts as a tool for understanding games research, in this thesis I have intentionally and consciously used them as the starting points for discussion as well as for framing the thesis itself.

2.2.2. What do we study when we study games?

Despite the so-called Ludology/Narratology debate, where Game Studies scholars debated whether games should be read as systems or as texts (Frasca, 1999; Jenkins, 2004), it is clear that “there was too much mutual interest and agreement” (J. H. Murray, 2005, p. 2) to form a meaningful divide (Frasca, 2003; Walsh, 2010). It is meaningful to study games as both narrative texts and systems, but little attention has been paid to understanding games as experience, art, and artefact. This thesis focuses attention on two of these, addressing the experiences of being a boardgamer and of

playing a boardgame and examining the importance and role of the materiality of boardgames as artefacts. There is continued interest both in games as designed systems (Björk & Zagal, 2018; C. E. Jones, Liapis, Lykourantzou, & Guido, 2017) and in games as narrative (Arnaudo, 2018; Bowey & Mandryk, 2017).

In this section, I introduce three areas of study which have been important to the development of the study of games in both Game Studies and HCI. Firstly, I consider the classification of games, describing early attempts to create a gaming taxonomy and showing that this early work has continued to be influential. Secondly, I describe the study of the cultural history of play, recognising that games represent just one form of play. Thirdly, I discuss the study of players. Specifically, here, I focus on study of the players of digital games, and on the study of player motivations.

2.2.2.1. Classification of games

The study of games emerged in the twentieth century from the work of game historians like Murray (1913, 1952) and later Bell (1979) and Parlett (1999) whose work aims not only to describe but also to categorise and classify different types of game. Each of these researchers classifies games according to their systems. Parlett's definition of a formal game identifies "a twofold structure based on ends and means" (Parlett, 1999, p. 3); the ends are the end game and victory conditions, themselves a form of system, and the means are "an agreed set of equipment and of procedural "rules" by which the equipment is manipulated to produce a winning situation." (Parlett, 1999, p. 3). Boardgame designer Alex Randolph's approach is simpler: "In my opinion, a game and its rules are identical. The game is its rules." (Randolph, 2012, p. 68, my translation). This overly narrow definition becomes problematic when an artefact is clearly some form of game but the rules – which constitute its system – are unknown and unknowable, as may be the case for items found in archaeological sites (Aarseth, 2017a; The Slovak Spectator, 2018).

More recent work on game classification has focused on digital games. Researchers have attempted to create typologies across a variety of dimensions rather than simply the game's system or antecedents. These dimensions include the game's representation of space and time, the composition of players (e.g. alone, or in pairs or teams), the nature of the challenge offered by the game, the types of rules that the

game enforces, and the mutability and saveability of the game state (Aarseth, Smedstad, & Sunnanå, 2003; Debus, 2016, 2017; Elverdam & Aarseth, 2007). In one example cited by Debus (2017), games are classified according to whether the game encourages the consumption of alcohol during play. Many of these taxonomies also – overtly or by implication – include a dimension of *format*, in that they are directly concerned with digital games rather than with other forms of game such as boardgames, LARP, or sports. Moreover, many fail to engage with what have been termed “serious games”, which focus on what the game can achieve rather than on the game as a game. Modern work on the historical and even archaeological origins of boardgames continues in this tradition of documenting and classifying games (Eagle, 1998; Seville, 2016; van der Stoep, 2015; Winkelman, 2016). The influences of this early work are also seen in studies of games as patterns or as systems of rules (Björk & Holopainen, 2005; Costikyan, 2013; Kew, 1987).

Taxonomies of serious games examine the domain that the game is aligned with, for example healthcare or public policy, as well as the purpose of the game and other features (De Lope & Medina-Medina, 2017). These “operative” games (M. Carter, Downs, et al., 2014) focus on extrinsic goals. Strouhal (2018), for example, describes instrumental political uses of (board)games; McGonigal (2011), one of the most avid proponents of the serious game movement, focuses on their possibilities for achieving greater work satisfaction, stronger social connections, and making “difficult activities more rewarding” (McGonigal, 2011, p. 146). Classification of these games can attend either to their domain (e.g. politics) or to their potential or purpose (increasing satisfaction or connectedness).

2.2.2.2. Cultural history of play

As Murray moved from his discussion of the history of Chess (H. J. R. Murray, 1913) to an attempt to classify known boardgames “other than chess” (H. J. R. Murray, 1952), Johan Huizinga was turning attention to the long cultural history of play in his monograph *Homo Ludens* (Huizinga, 1950 [1938]). Huizinga suggests that play - “with its tension, its mirth, and its fun” (Huizinga, 1950 [1938], p. 3) – is not a cultural construct but an innate property shared by humans and animals, and that play is not merely instrumental but rather has an intrinsic value. Play is the opposite of

seriousness “[f]or seriousness seeks to exclude play, where play can very well include seriousness” (Huizinga, 1950 [1938], p. 45).

To Huizinga, tension, uncertainty and chance govern “all solitary games of skill and application ... the more play bears the character of competition the more fervent it will be.” (Huizinga, 1950 [1938], p. 11). Acts of play attract an ethical value “because, despite his ardent desire to win, [the competitor] must still stick to the rules of the game.” (Huizinga, 1950 [1938], p. 11). In discussing this more serious side of play, Huizinga singles out boardgames where “[t]he merry play-mood has little scope ..., particularly where chance is at a minimum as in chess, draughts, backgammon, halma, etc.” as well as card games, which “never succeed in eliminating chance completely” (Huizinga, 1950 [1938], pp. 198-199). Intriguingly, after explicitly including *chess*, *backgammon* and *draughts* in his category of games, he questions whether *Bridge* can still be considered a game because of the intellectual engagement that it demands of the player (Huizinga, 1950 [1938], p. 199):

“The status of bridge in modern society would indicate, to all appearances, an immense increase in the play-element to-day. But appearances are deceptive. Really to play, a man must play like a child. Can we assert that this is so in the case of such an ingenious game as bridge?”

This is an odd digression which seems out of character with much of the rest of Huizinga’s approach to games and play.

The influence and importance of Huizinga’s work are seen today in the continued attention that is paid to games and play as sociocultural phenomena. In this tradition, attention is paid to why people play, what play looks like, and to the role of play in the lives of players. Studies have examined the sociality of play (Eklund, 2012; Steinkuehler & Williams, 2006; Williams et al., 2006) as well as motivations for play (Kosa & Spronck, 2018; Poeller et al., 2018; Woods, 2012; Yee, 2017b) and perceptions of those who play (Wasserman & Rittenour, 2019). This thesis follows this tradition, with a focus on the meaning and interactions of play rather than on the systems and game mechanisms that support it.

2.2.2.3. The study of players

For studying games as artefacts or systems, historical objects, or ontological concepts, players are arguably unimportant. The artefact exists regardless of whether it is played or pristine, modern or antique. The system can be modelled and understood in its abstract form without the need for players or even for game materials, and debates about the concept of “game” are more a question for philosophers than for players. But if we wish to understand the play of games then we must also study the experience of play and understand the perspective of the players who engage in that experience: “the discipline of game studies requires a shift towards player analysis” (Mosca, 2017, p. 586).

To date, player studies have focused on players of digital games, rather than of boardgames. An important early work proposes four types of game players based on factors that players enjoy in a Multi-User Dungeon (MUD) game: Achievement, Exploration, Socialisation, and Imposition upon others (Bartle, 1996). Named for the four suits in a traditional deck of cards, players who seek achievement and in-game resources are termed Diamonds (for the treasure they accrue); those who seek to uncover information about the game and its internal mechanisms are Spades; those who play to spend time with others, making friends and sharing jokes, are Hearts; and hostile, high-interaction players are Clubs (Bartle, 1996).

Another early work which examines players’ intrinsic motivations identified eight “motives of play”: race, chase, attack, capture, harassment, search, rescue, and seduction⁴ (Sutton-Smith, 1971, p. 304). Unlike Bartle’s categories, these motives represent naturally occurring activities within the play environment (Salen & Zimmerman, 2004, p. 464). Although Sutton-Smith’s categories are seen in older types of boardgames, they fail to capture the modern hobbyist experience, which demands new activities like building, wagering, connecting and investing. They also neglect the emotional responses of the player, which were found in a study of chess players to be “necessary for efficient cognition” (Tikhomirov and Vinogradov, as cited in Gobet et al., 2004, p. 179).

⁴ tempting others to take a particular, forbidden action (Björk, 2015).

Several researchers have investigated players' motivations to play online games. Sherry, Lucas, Greenberg, and Lachlan (2006, p. 219) find six dominant dimensions of player motivation: *Competition*, *Challenge*, *Social Interaction*, *Diversion*, *Fantasy*, and *Arousal*. Tondello et al. (2018) find that players may be oriented around *actions*, *aesthetics* and *goals*. Yee (2006, p. 774) categorises players across the dimensions of *Achievement*, *Social* and *Immersion*, and demonstrates that motivation is not a zero-sum equation: a player who scores high on one dimension does not automatically score low on the others. Ten years later, Yee performed a similar study with people who enjoy playing boardgames (Yee, 2017b), identifying a broad range of motivations for play. Similarly, Kosa and Spronck (2018) apply a preference model to boardgames, finding that only seven of the 14 investigated categories give a reliable result. As in Yee (2017b), there were conflicting results regarding the value placed on sociality in boardgaming. These findings are examined in Chapter 6, which suggests that the apparent conflict lies more in the definition and tools for measuring “sociality” than in a failure to value it.

Further work on player motivation and behaviour focuses on understanding the social setting of play (Gajadhar, De Kort, & IJsselsteijn, 2008), on predicting whether players will leave the game (Borbora, Srivastava, Hsu, & Williams, 2011), on understanding the influence of personality traits (Max V Birk, Toker, Mandryk, & Conati, 2015), and on the use of formal psychological models including Motive Disposition Theory (Poeller et al., 2018) and Attribution Theory (Depping & Mandryk, 2017). Other work uses the understanding of human motivation offered by self-determination theory (Przybylski, Rigby, & Ryan, 2010). This recognises the highly individual, internalised elements that motivate human behaviour, and the needs for competence, relatedness, and autonomy (Ryan & Deci, 2000). It stresses the importance of granularity and recognises that motivations are highly individual. One cannot attribute a broad set of goals to a group of people but should rather consider how individuals are motivated to participate in a particular behaviour or activity, with attention to “specific characteristics of players, their personalities, and the games that they play.” (Hilgard, Engelhardt, & Bartholow, 2013, p. 12). My research on hobbyist boardgamers follows this approach, being focused on individuals rather than on a broad group.

In a different approach to player-focused study, Kallio, Mäyrä, and Kaipainen (2010) propose the *InSoGa* model; a range of “gaming mentalities” reflecting various aspects of a player’s life including “the games you play, who you play with, how much time you have to play, and how often you can play” (Kallio et al., 2010, p. 4). This model considers factors that are external to the game itself. The model focuses on the intensity of play, the locus of its sociability (physical, virtual or outside the game) and the games themselves, as well as how the players themselves use these games instrumentally. Extending to player experience, the Game Experience Questionnaire (GEQ) seeks to understand players’ responses to playing a game (IJsselsteijn, De Kort, & Poels, 2013).

2.2.3. What is a game?

Another stream of research, which M. Carter, Downs, et al. (2014) describe as “ontological”, questions what makes a game a game – and, by extension, what is “play”. This section discusses different definitions of games. Its object is both to provide an overview of the different ways in which games are conceptualised in literature, and to link these to the overall model used to structure this thesis.

Rather than attempt to define a game myself, I instead adopt a broad sense of a game as a playful assemblage. The theory of assemblage or *agencement* (Deleuze & Guattari, 2013 [1980]) focuses on mutable structures and the ways in which they are brought together. Thus, games, gamers and gaming are components of an assemblage of play, connected by a *lusory attitude* (Suits, 2006); a sense that this is indeed play.

Huizinga cites a Dutch proverb, “it is not the marbles that matter, but the game” (Huizinga, 1950 [1938], p. 49). He suggests that the marbles are unimportant as objects, but their importance lies in their facility to enact and constitute the space of the game. Of course, will be discussed in Chapter 5, both the marbles *and* the game matter; moreover, the players and the *desire* to play for play’s sake complete this playable assemblage.

2.2.3.1. Definitions

In the context of this research, there are two things that are notable about definitions of games. The first is that early definitions, which have been expanded on by more recent authors, are concerned with pre-digital games. As a result, more recent definitions have tended to follow this approach. Although Game Studies research has focused more on digital games than on other forms of game, definitions of games tend to be more inclusive. The second is that these definitions – which are concerned with the ontological boundaries of “game” – appear to be concerned primarily with differentiating what is a “game” from what is merely “play”. An exception is work on Serious Games and Gamification, which blurs the boundaries between “play” and “work”.

Huizinga defines play as “a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is ‘different’ from ‘ordinary life’” (Huizinga, 1950 [1938], p. 28). These limitations of time and place represent the “Magic Circle” of play (Huizinga, 1950 [1938], pp. 9-10, 19-20, 57) – a concept popularized and amplified by Salen and Zimmerman (2004, p. 94). Although the Magic Circle has been criticized as overly prescriptive and over-used (Consalvo, 2009; T. L. Taylor, 2008; Zimmerman, 2012), it nevertheless remains a compelling metaphor for the experience of play.

Caillois’s work offers an early distinction between rule-driven *ludus* and free *paidia* (Caillois, 2001 [1958]). It describes play as free or voluntary, separate in space and time, having an uncertain outcome, unproductive, in that it does not create goods, wealth or any other new object, and governed by rules; and make-believe (Caillois, 2001 [1958], pp. 9-10). Like Huizinga, Caillois focuses on play’s voluntary nature and its separation in space and time, as well as the binding nature of the constitutive ruleset and the unproductive nature of play, “having its aim in itself” (Huizinga, 1950 [1938], p. 28). Where Huizinga focuses on the feeling of tension and awareness that play is separate from the everyday, Caillois stresses the uncertainty of outcomes and importance of *mimicry* or make-believe.

Bernard Suits also attempted to define games, suggesting that “[t]o play a game is to attempt to achieve a specific state of affairs [prelusory goal], using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]” (Suits, 2006, p. 190). This definition presents the *lusory attitude* as the element that unites the goal of the game or desired state of affairs, the means whereby that may be achieved, and the rules. It introduces the notion that the player’s approach to the game is important. Play is not simply voluntary and rule-based; it is not defined purely by its temporal or spatial positioning or by what it does not produce; it is defined by “the attitudes of game players *qua* game players” (Suits, 2006, p. 185). Suits rightly turned attention to “the experience and consequent interactions between users that occur as a result of interaction with the game” (M. Carter, Downs, et al., 2014, p. 33). The importance of the lusory attitude is highlighted in a well-known quote from the prolific boardgame designer Reiner Knizia who said that “When playing a game, the goal is to win, but it is the goal that is important, not the winning”⁵. Here, Knizia highlights the importance of accepting the primacy of the game’s constitutive rules and its end conditions (prelusory goal) as a necessary element of engaging in play. If players reject this attitude, the game loses its focus and the experience is broken.

In *Rules of Play*, Salen and Zimmerman (2004, pp. 71-83) analyse these definitions, as well as others from Parlett (1999), Abt (1987), Crawford (2011), Costikyan (2002), and Avedon and Sutton-Smith (1971), in order to construct their own definition (Salen & Zimmerman, 2004, p. 80):

A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome..

They identify fifteen elements which are found within the definitions they analyse (Salen & Zimmerman, 2004, p. 79). As shown in Figure 2.1, these elements describe games as systems (6 elements) and as experience (6 elements), with a further three elements representing games as artefacts, texts, and art. Nevertheless, Salen and Zimmermann’s definition focuses on the *systemic* properties of games rather than on games as experiences, artefacts, texts, or art.

⁵ The original source of this aphorism appears to be Lapointe (2003)

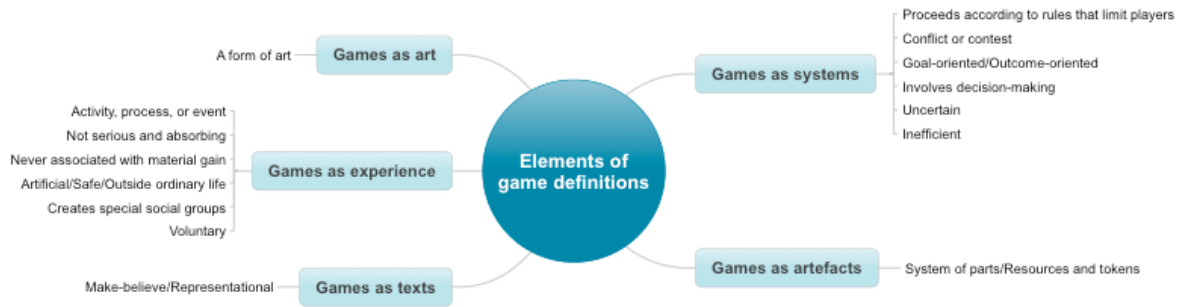


Figure 2.1 Salen and Zimmerman's (2004, p.79) elements of game definitions

Together, the definitions show that play is created by players, bound by rules, and in some sense artificial. As described in the introduction to this chapter, games – particularly boardgames, which come ready to play, with rules, board, components and box – are simultaneously artefacts, texts and systems – as well as being art and containing the potential for experience. Similarly, Juul's definition of a game as (Juul, 2005, pp. 6-7):

a rule-based formal system; with variable and quantifiable outcomes; where different outcomes are assigned different values; where the player exerts effort in order to influence the outcome; the player feels emotionally attached to the outcome; and the consequences of the activity are optional and negotiable

captures the systemic and experiential elements of *gameness*.

An alternative classification, which provides the overall structure for this thesis, is presented by Björk (2008). He observes that interdisciplinary games research can be understood through the perspectives of games, gamers, and gaming. As Figure 2.2 shows, the elements noted by Salen and Zimmerman (2004, p. 79) broadly focus on games (as systems or artefacts) and on gaming, with only one reflecting a focus on gamers.

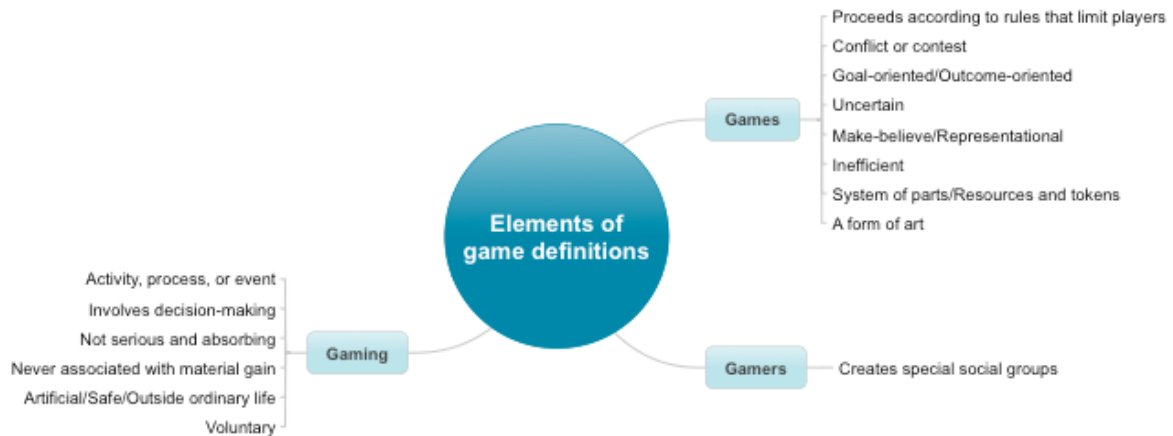


Figure 2.2 Salen & Zimmerman's (2004, p.79) elements of game definitions, categorised according to Björk (2008)

Stenros (2017) presents a meta-review of more than 60 definitions of a game. He observes that the definitions presented by Salen and Zimmerman (2004) and Juul (2005), which he describes as “canonical, yet-contested” (Stenros, 2017, p. 500), are “wonderfully inclusive and have helped foster a fertile field of game studies ... [however] the syntheses have a “best of” quality to them.” (Stenros, 2017, p. 500). Rather than presenting his own definition, he identifies ten key elements of interest in existing definitions and suggests that game scholars should themselves clarify what they see as a game by addressing these points. Like the elements identified by Salen and Zimmerman (2004, p. 79), these topics are concerned with games as system and experience; a sense of games as artefacts is absent, as are notions of games as text, and the player is represented by a single topic (see Figure 2.3).

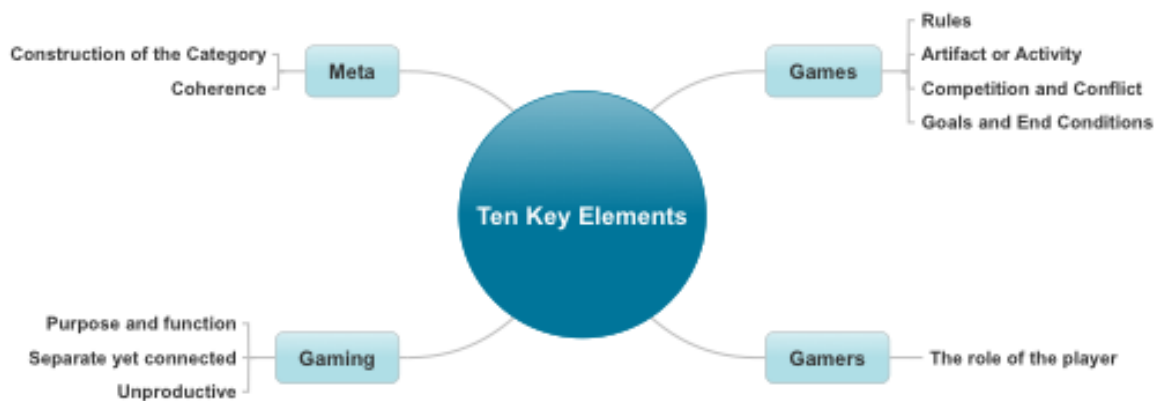


Figure 2.3 Stenros's (2017) Ten Key Elements, categorised according to Björk (2008)

2.2.3.2. Games as systems

This overt focus on the rules and system of the game is particularly interesting given the long history of house rules, misunderstandings, and game modifications. If the rules indeed make the game, should rule changes not therefore make a *new* game? Even setting aside deliberate rule-breaking such as cheating, unsporting play and spoil-sporting (Salen & Zimmerman, 2004, p. 269), players frequently modify game rules either deliberately (as in “house rules”) or accidentally (errors). To these modifications are added “unstatable and unknowable” notions of “fairness, sportsmanship and practicality” that cover such topics as handicapping, introduction of new players, and even what constitutes an “acceptable” discussion topic at the game table (Sniderman, 2006, p. 490).

It is not possible to “know all the rules in a system” (Sniderman, 2006, p. 501) due to the diversity of these additional, unwritten rules. Both Kew (1987) and Liberman (2013) discuss the processes through which players “accomplish” a game and make sense of its rules. Through an experiment involving a sports-like game, Kew demonstrates “that some elements and procedures of games playing are wholly tacit, whilst others are a contested terrain in that they can be, and often are altered or manipulated.” (Kew, 1986, p. 317). Discussing the learning of boardgame rules, Liberman argues that “In themselves, divorced from the context of play that affords them their sense and reference, rules cannot be comprehended.” (Liberman, 2013, p. 84), presenting rules as “resources that are selectively applied” (Liberman, 2013, p. 134). Similarly, Simon argues eloquently for the need to take games “unseriously” – that is, to treat them in the same way as their players do – taking the social constructionist view that (Simon, 2017, p. 607):

A game is whatever the various folks talking about what it is happen to be able to convince, coerce, and cajole each other into agreeing with (or at least not disagreeing with). Thus, a game is not defined by goals, rules, or the meaning of the myriad formal properties that we scholars have given them, but rather by the collective agreement of players as to the goals, rules, or meaning of a specific shared activity that they tend to refer to as “playing a game”. It follows from this that if we want to know what a game is then we have to make sense of what players say and do since it is only their activity that constitutes the thing that we want to study.

These reports further problematise the understanding of a game as a set of rules, independent of the players, stressing the importance of the ways in which the players themselves learn, interpret, enforce and negotiate game rules. This is discussed further in Chapter 8.

2.3. Board Game Studies

The domain of Board Game Studies (BGS) is led by the BGS Colloquium – “the only recurring event devoted solely to the study of non-digital games”⁶ – and the associated *Board Game Studies Journal*, an interdisciplinary, single-peer-reviewed academic journal for “historical and systematic research on board games”. Since its inception in 1995, the BGS Colloquium has been a forum for research relating primarily to the study of games in antiquity. Even when attention is turned to twentieth century games (e.g. Whitehill, 1999; Winkelman, 2016), there is a focus on older games, for example on Magie’s *The Landlord’s Game*, the forerunner to *Monopoly* (Magie & Darrow, 1933). In 2016, however, the BGS Colloquium extended its remit to explicitly include “scholars of more modern games”⁷, and two of the twelve sessions focused primarily on modern games.

2.3.1. History of boardgames

Board games have always reflected the culture in which they developed. Contemporary board games are no different in today’s highly mediated and digital society. (Booth, 2015, p. 7)

Early writing on the topics of games and play focused primarily on the rules and history of specific games. Such work includes Caxton (1474) which appears to be a translation of de Cessolis (abt 1300), as well as later work by Hyde (1694) and Li Yi Min (abt 1100). Arguably, the best-known of these, at least in the English-speaking world, is Hoyle’s *A Short Treatise on the Game of Whist*, first published in 1742. The book presents the rules of *Whist*, accompanied by strategic advice and statistical calculations, “directing with moral Certainty, how to play well, any Hand or Game, by shewing the Chances of your Partner’s having 1, 2, or 3 certain Cards.” (Hoyle, 1743, p.

⁶ <http://bgs20.tors.ku.dk/about/>

⁷ http://bgs20.tors.ku.dk/images/BGS20_Call_For_Papers.pdf

2). Hoyle's name has continued to be used, with "according to Hoyle" often used to signify rigorous attention to a set of rules, particularly of a card game (Hirsch, Kett, & Trefil, 2002, p. 60). The Collins English Dictionary offers "Hoyle" as a noun meaning "an authoritative book of rules for card games", reflecting the importance of his early codified ruleset.

Modern interest in the early history of boardgames is represented by Parlett's *Oxford History of Board Games* (Parlett, 1999), as well as Bell's *Board and Table Games From Many Civilizations* (Bell, 1979) and Murray's twin volumes (H. J. R. Murray, 1913, 1952). The BGS Colloquium and Journal are a fertile source for historical research into boardgames and artefacts. There is surprisingly little literature, however, about the history of modern boardgames. Stewart Woods' *Eurogames* (Woods, 2012) is the most important text in this genre, although Pritchard (1975) offered an early perspective. More recent works include mass-market titles dedicated to a single game (Tostado, 2010) or to a broad overview of boardgames (Donovan, 2017; Thrower, 2018).

More recently, the *Haynes Tabletop Gaming Manual* (Thrower, 2018), produced by a company which is arguably better known for its detailed vehicle maintenance manuals than for its guides to popular cultural phenomena, provides an historical view of games, considering games "through the ages". It describes the development of different forms of game, from wargames and miniatures to role-playing games like *Dungeons & Dragons* (Gygax & Arneson, 1973) and the *Fighting Fantasy Gamebook* series (Jackson & Livingstone, 1982), and turns attention to the emergence of different genres of boardgame, including the modern European "German-style" game or *Eurogame* which is the primary focus of my research.

2.3.2. Classifying boardgames

The term "Tabletop" is a broad catch-all term for games that are played around a table, generally in person. It excludes digital games, although the term "digital tabletop" has been used to describe games that are played on a large horizontal screen (Bakker, Vorstenbosch, van den Hoven, Hollemans, & Bergman, 2007b; de la Hera, Loos, Simons, & Blom, 2017; Hartelius, Fröhlander, & Björk, 2012; J. R. Wallace et al., 2012; Xu, Barba, Radu, Gandy, & MacIntyre, 2011). In general, the term "tabletop games" is preferable to "analogue games," because it describes a feature of the games (that play

is necessarily co-located within a limited space) rather than something that they are not (a focus on the digital/analogue divide). “Analogue games”, however, explicitly includes activities like LARP and performative games, which are excluded from the Tabletop term because they occupy a larger play space than a table. Both terms are broad classifications rather than a specific and narrow descriptor that can be used for boardgames. S. Johnson (2015) argues that the key element that distinguishes boardgames from videogames is the transparency of their rules, which are seen to be enacted in the boardgame. Like other attempts to define boardgames, this understates the importance of the game as artefact, although it recognises the importance of the player’s involvement in the activity.

As discussed above, boardgame classification has traditionally considered the systems or mechanisms used to drive the game. An early attempt at a comprehensive overview and taxonomy of games is provided by H. J. R. Murray (1952), and has been examined by Schädler (2017), among others. After a treatment of games in the Ancient World, Murray distinguishes boardgames into five broad categories:

- o Games of Alinement and Configuration (e.g. Merels, Halma);
- o War-games (e.g. Tafl, Draughts, Chess);
- o Hunt-games (e.g. Fox and Geese, Leopard games);
- o Race-games (e.g. Backgammon, Trictrac, Ludo (Chaupur));
- o Mancala.

Although Murray’s work is now somewhat dated, it nevertheless provides a valuable early perspective on what were seen as the principal types of game in early civilizations, as well as an early attempt at a taxonomy of boardgames.

There has been little modern work on classification systems specifically for boardgames, although several of the broader taxonomies aim to include different types of games. Notebaert and Cornilly (2001) propose a two-dimensional classification, using “the combination of categories and keywords” (Notebaert & Cornilly, 2001, p. 8). In their system, developed for the Belgian Game Archive, a game is assigned to up to six of 35 categories. Next, it is classified using keywords selected from a thesaurus. There is some overlap between categories and keywords, for example, “Detective games” is both a category and a keyword. A similar approach is taken by the

BoardGameGeek website, where games are assigned to Categories, Mechanisms and Families.

Woods (2012) distinguishes modern boardgames (which he calls hobbyist boardgames, because they were – at the time when his book was published – primarily played by hobbyists) from what he terms “traditional” games. He adds a third category – mass market games – to this discussion. These mass-market games – which include *The Game of Life* (Klamer & Markham, 1960), *Monopoly* (Magie & Darrow, 1933), *Risk* (Risko & Gilbert, 2016), *Cluedo* (Pratt & Pratt, 1944), *Scrabble* (Butts, 1948), *Mouse Trap* (Barlow, Glass, Kramer, & Meyer, 1963), *Operation* (Glass & Spinello, 1965), *Twister* (Guyer, 1965) and others – are the focus of Donovan (2017), who covers twentieth century boardgames “from *Monopoly* to *Settlers of Catan*,” leading into this overview with a discussion of ancient games, *Chess*, *Backgammon* and others. Writing in 1975, nearly 40 years before Woods, Pritchard considered *Monopoly*, *Scrabble* and *Cluedo* to be “modern” boardgames; those games were the fore-runners of what we now call modern boardgames. These classifications sort boardgames not only by the time when a game was first published (antique or modern) but also by their expected (modern) audience (hobbyist or mass-market). An extension of this focus on the people who play or produce the game may be the – arguably somewhat dated – use of the term “designer games” to focus attention on acknowledging the game’s designer or “author”.

In discussing classification of boardgames, it is important to note that the term “boardgame” itself is broad and indistinct. Are wargames a genre of boardgame or are they, like boardgames, a genre of tabletop game? How should we classify card- and dice- based games or parlour-style games that lack a board at all? Is a digitised boardgame still a boardgame? And what is the position of a natively digital game that replicates the aesthetic appearance and “feel” of a boardgame? In this research, I define boardgames by the internal standards of the hobbyist boardgaming community: if a game has a database entry on BoardGameGeek.com then it is – at least in some way – a boardgame.

2.3.3. Boardgames research

Since August 2014, the online *Analog Game Studies Journal* has published across a broad remit which incorporates Tabletop games as well as LARP and other

performative games. Both the broadening of the BGS colloquium and the formation of the *Analog Game Studies Journal* point to increasing academic interest in the study of boardgames, as does the inclusion of “articles on games in general” in *Game Studies* (Aarseth, 2017b).

This does not suggest, however, that there is no place for boardgame studies in other venues. DiGRA - the major international conference for Game Studies - has a history of accepting papers on RPGs, LARP and boardgames even where they do not touch on digital play. Nevertheless, although research on boardgames may be welcome in these venues, it remains under-represented in publications. A review of all papers from CHI on Boardgames shows that there is still limited research on boardgames being published at that venue. Between 1999 and 2018, there were only 22 papers⁸ published at CHI that relate directly to boardgames. Of these, 13 treat boardgames as operative or instrumental, two explore the epistemology of games (Pereira, Prada, & Paiva, 2014; Xin & Sharlin, 2006), three their ontology (Cheung, 2013; Mandryk & Maranan, 2002; Pearce, Smith, Choi, & Carlsson, 2016), and four (my own work in Chapters 5 and 8 as well as two extended abstracts) relate to practice and experience of users (Frey, 2016; Kirman & Rowland, 2008). A similar review of CHI PLAY papers on boardgames between 2014 and 2017⁹ found seven papers, of which four used the games instrumentally, one ontologically (Barbara, 2015) and two (my own work on the use of gaze tracking to understand boardgame play as well as O'Brien, 2017) related to the practice and experience of users. Not only is research into user experience under-represented in games research at CHI and CHI PLAY, it is under-represented in the already under-represented domain of boardgame studies.

The growing body of research into boardgames is represented by several published books of scholarly research into boardgames (Arnaudo, 2018; Booth, 2015; Gobet et al., 2004; Woods, 2012), with additional works on the topic forthcoming. Other recent publications focus on the introduction and use of boardgames in libraries

⁸ I searched the ACM Digital Library for the search string +board* +gam*, refining the search to Proceedings of CHI. This gave 30 papers. Four had no relevance to boardgames, and four others were more relevant to digital games.

⁹ I searched the CHI PLAY database for “board”; this returned eight results, of which one was a mobile game where players interacted with city information boards.

(E. Cross, Mould, & Smith, 2015; Mayer & Harris, 2010; Nicholson, 2010) and educational settings (Akl et al., 2008; Sardone & Devlin-Scherer, 2016; E. Smith & Golding, 2018; Willet, Moudgalya, Boltz, Greenhalgh, & Koehler, 2018). Further research addresses the accessibility of board and tabletop games for marginalised players, such as those with a physical impairment¹⁰. The *Meeple Like Us* project has explored the accessibility of boardgames (Heron, Belford, Reid, & Crabb, 2018a) and has proposed a set of heuristics for evaluating tabletop game accessibility (Heron, Belford, Reid, & Crabb, 2018b).

Even in non-academic circles, there has been a growing interest in books about boardgames, from books in which game designers describe their favourite ‘hobby’ and ‘family’ games (Lowder, 2007, 2013) to boardgame designer Ignacy Trzewiczek’s *Board Games That Tell Stories* books (Trzewiczek, 2014, 2015), to histories of specific boardgames and of the genre (Donovan, 2017; Peterson, 2012; Thrower, 2018; Tostado, 2010). There is even a modern book of hints for gaming table etiquette, (Litorco, 2016). These are supported by a wealth of online material, from the extensive databases of BoardGameGeek and There Will Be Games (formerly Fortress: Ameritrash) to review sites, Facebook groups, podcasts and YouTube channels.

Whilst the previous items deal specifically and explicitly with boardgames, *Tabletop Game Design for Video Game Designers* (Ham, 2015) is interesting in that it instrumentalises boardgames as a tool for learning game design skills which are then applied to videogames. The book’s key question is, “How can tabletop games make you a better video game designer?” (Ham, 2015, p. 2). By first designing a prototype game using paper and cardboard, Ham argues, designers must pay attention to the detail of game design rather than the minutiae of programming; this echoes paper prototyping practices in HCI (Buxton, 2007). Despite its focus on the end output as a digital game, the book contains valuable advice for boardgame designers.

¹⁰ I am grateful to my colleague Ronny Andrade, who has helped me to understand that people *have* impairments but *become* disabled by a world that does not cater for those impairments.

2.4. Games

Björk's framework for understanding interdisciplinary studies of games and gaming identifies the study of games as one of three perspectives for game-related research. Unlike the players or the experience of play – “this is the only thing one can influence ... during design processes” (Björk, 2008, p. 65). “Game designers can exert control over the artefact ... [however] their ultimate goal is to encourage a certain kind of gameplay.” (Björk & Zagal, 2018, p. 323). Like my discussion of the ontology and classification of games, this section introduces research that is concerned with the study of games themselves. The literature discussed here supports and informs the “Boardgames” section of this thesis, which is concerned with the materiality of games as well as with their translation from and between boardgame and digital formats. This section first considers the nature of materiality before discussing the frameworks of platform studies and domestication theory.

2.4.1. Materiality

Materiality has been a focus of research in both Game Studies (Leino, 2012; Linderöth, Björk, & Olsson, 2012; Mateas & Wardrip-Fruin, 2018) and HCI (Fuchsberger, Murer, & Tscheligi, 2013; Leonardi, Nardi, & Kallinikos, 2013; Wiberg et al., 2013), as well as in other discipline such as STS (Law, 2012; Magaudda, 2011), media studies (Birtwistle, 2017; McLuhan, 2013 [1964]; McLuhan & Fiore, 1967), and the study of material culture (Highmore, 2014; Miller, 2009, 2010, 1998b). Materiality means more than the physicality of the game artefacts (Giaccardi & Karana, 2015; Miller, 2010; Odom, Sellen, Harper, & Thereska, 2012); it includes the affordances of the pieces (Gross, Bardzell, & Bardzell, 2014, p. 638), their effects, importance or relevance (Miller, 1998a, pp. 10-14), their function and use (Jung & Stolterman, 2011; Kallinikos, Leonardi, & Nardi, 2013, p. 8), and “a certain ‘stubbornness’ of material reality” (Apperley & Jayemane, 2012, p. 7). It connects to scholarship around Actor-Network Theory (Fuchsberger, Murer, & Tscheligi, 2014; Latour, 1996; 2005, especially pp 63-86; 2007) and material considerations underlie the discussion around platform studies (Apperley & Jayemane, 2012; Montfort & Bogost, 2009). Each of these dimensions of materiality is meaningful and relevant to the understanding of boardgames as well as to the activities of play; Chapters 5, 6, and 8 return to these notions.

2.4.1.1. Materiality as physicality

Materiality is often used primarily as a synonym for the physicality of artefacts (Giaccardi & Karana, 2015; Miller, 2010; Odom et al., 2012). The relationship between materiality and physicality is particularly relevant for accessibility work (Heron et al., 2018a, 2018b) but is also seen in discussion of tangible interactions (Bakker, Vorstenbosch, van den Hoven, Hollemans, & Bergman, 2007a) and in the focus on *materials* (see, for example, Funnell & Davies, 2012; Stubbs, 2008). When considering boardgames as distinct from digital games, this is an obvious point of difference. Boardgames are celebrated for *not* being digital, and are often presented as more ‘real’ or valuable because of this physical existence (Sax, 2016). Mavoa, Gibbs, and Carter (2017) have shown that this is particularly evident in discussions of childhood, where technology use is constructed as “harmful to the quality of education” (Mavoa, Gibbs, et al., 2017, p. 6) and childhood is represented “as a phase of human life where tactile, sensory, embodied experiences should be maximised” (Mavoa, Gibbs, et al., 2017, p. 5). Materiality is associated with positive values.

In anthropology and sociology, discussion of materiality is particularly concerned with the relationship between people and objects: “material possessions are essential to the repertoire of identity” (Odom et al., 2012, p. 4). This links to the work of Suchman (2007), who looks at meaning-making in everyday life. In related work in HCI, Davis et al. (2014) describe the practices of homemade family cookbooks, and Ayobi, Sonne, Marshall, and Cox (2018) discuss the practice of bullet journaling, which celebrates the “flexibility and tangibility of paper notebooks over digital products” (Ayobi et al., 2018, p. 2). Such physical documents embrace the paper medium (Kirk & Sellen, 2010). Boardgames have a physical presence; they have a box, a rulebook, a board and components. Whereas digital games occupy hard disk storage and bandwidth, boardgames occupy space in the home, in cupboards or on shelves, and on the table. Discussion of games frequently represents boardgames as constructed by components; the name “boardgame” suggests a board, as “card game” suggests cards and “dice game” suggests dice. A genre of wargame is known as “block wargames” after the wooden blocks that represent each unit (see Figure 2.4).



Figure 2.4 Block wargame *Hammer of the Scots* (Dalglish & Taylor, 2002). Image (c) Chris Barnard.

Source: <https://boardgamegeek.com/image/767246/hammer-scots>

2.4.1.2. Materiality as affordance

Building on materiality as physicality is a recognition that that physicality and materials *afford* certain behaviours and interactions. This references Norman's theory of affordances, which describes what the user perceives as possible with a given object (Gibson, 1979; Norman, 2013). For example, the material artefacts of household financial management allow multiple members of a family "to collaborate and cooperate around family finances and other family activities" (Vyas, Snow, Roe, & Brereton, 2016, p. 12); the authors compare these to computer-based tools which are primarily used by a single person and offer less visibility. Likewise, family cookbooks "[embody] materiality through mess" (Davis et al., 2014, p. 80). The cardboard, wood, and plastic components of a boardgame both afford and reject actions and activities.

Building on McLuhan's assertion that media do not only transmit messages but also comprise part of the message (McLuhan & Fiore, 1967), the material specificity hypothesis suggests (Gross et al., 2014, p. 643)

that each communications medium is unique, that its uniqueness is somehow grounded in its materiality, and that each medium is uniquely positioned to enable certain modes of expression and afford certain aesthetic experiences.

The corollary to medium specificity is material recalcitrance, where a material rejects or discourages a particular activity or use. A criticism of this approach is that it fails to

allow for the emergence or development of new forms of media, which in turn build on prior patterns and histories.

Fuchsberger et al. (2013) highlight the active role of materiality – and, specifically, of the materiality of the materials that constitute an artefact. They use Actor-Network Theory (Latour, 1997) to construct a theoretical understanding of materiality which builds on affordance theory, Actor-Network Theory, and McLuhan’s work, to consider the activity of materials as well as of the designers and users who interact with them.

In this thesis, the alignment of materiality and affordances becomes important in Chapters 4 and 8, when attention turns to the practices of play, and the ways in which players use the components of a boardgame to enact the game as well as to create situated plans for future actions or action possibilities.

2.4.1.3. Materiality as effects, importance or relevance

A further meaning attached to materiality is in the context that something is important or relevant. This meaning is *material* to understanding materiality because it reflects the value that people place on an artefact or activity. Miller (2009) shows that objects are retained even after their immediate usefulness has passed; others describe the behaviour of collectors (Kirk & Sellen, 2010; S. Snow et al., 2015), who attach meaning to artefacts “superfluous to their commonly intended function” (McKenzie, McMahon, Verlaet, Snow, & Buys, 2015, p. 16). In this example, materiality is closely aligned with the collector’s self-image and sense of self. Objects “function as markers of familial bonds and obligations and [their] importance ... goes well beyond the desire to simply accumulate possessions” (McKenzie et al., 2015, p. 18; see also Miller, 2009).

Chapters 5 and 6 return to this sense of mattering, describing how serious leisure hobbyists value and protect boardgames and their components, and the value that they place on the games and on their hobby. Moreover, they examine how a person’s games are tied to their sense of self (Belk, 1988) and to the way that they present themselves to others.

2.4.2. Platform studies

Arising from what has been termed the “material turn” in game studies (Apperley & Jayemane, 2012, p. 10) is Platform Studies, an area of study which focuses on “the relationships between the hardware and software design of standardized computing systems — platforms — and the creative works produced on those platforms.” (Bogost & Montfort, 2007, p. 176). Proponents of Platform Studies recognize that an underlying computer system fundamentally affects the types of media that are developed for it, by “providing opportunities for the creative process” (Montfort & Bogost, 2009, p. 153) but also by constraining it. These constraints encourage creativity in circumventing the limitations of the platform. Thus, Platform Studies begins from a focus on understanding the limitations and affordances of the platform that is studied, which is the lowest and most formative of the five tiers of (video)game scholarship focus (Bogost & Montfort, 2007, p. 178; Leorke, 2012, p. 259). Platform Studies “turns the object of study away from the nebulous interactions of people and software mediated through the platform to a focus on the interactions between platform and software (albeit with a focus on how human agency is able to shape those interactions)” (Apperley & Jayemane, 2012, p. 11).

Platform Studies recognises the importance of the materiality of the digital game, particularly in the design of the “feel of the console and the controller” (Apperley & Jayemane, 2012, p. 16) and in the way that this materiality impacts game design and player experience (Apperley & Jayemane, 2012, p. 10). The approach has, however been criticized as “so many variations on a theme” (Leorke, 2012, p. 266) or as a boilerplate approach to understanding the materiality and code underpinning these systems.

It is tempting, although ultimately misguided, to attempt to position the study of boardgames as a form of Platform Studies, with the game materials forming the platform. Like the underlying platform of Atari (Montfort & Bogost, 2009), Amiga (Maher, 2012), the BBC Micro (Gazzard, 2016), the SNES (Arsenault, 2017), or the Nintendo Wii (S. E. Jones & Thiruvathukal, 2012), non-digital game formats both constrain and stimulate the creative process. The inherent materiality of boardgame components affords a range of different interactions – cards afford shuffling and sorting, tiles afford a dynamic play space, cubes and counters afford stacking, grouping

and ordering. But it is difficult to fit a boardgame into Montfort and Bogost's five-tier taxonomy of reception/operation, interface, form/function, code, and platform (Montfort & Bogost, 2009, pp. 145-147) or into their broader focus on hardware and software. Although a boardgame's materiality is key to understanding its play, cardboard and wood do not themselves constitute a "platform" for study. Of more use is an acknowledgement that boardgames are fundamentally material, and an understanding of the approaches to materiality presented above and discussed in more detail in Chapter 5.

2.4.3. Domestication theory

Gamers place importance on games and gaming as part of their identity; their practices demonstrate a process of identity-building and reinforcement as they bring games into the home setting. Theories of the domestication of technology offer a conceptual understanding of this as a four-step process, which focuses not only on actions and practices but on the emotional consequences and processes of adoption and of ownership.

Objects are *appropriated* at the point of selection or purchase, when they take on new value as a possession rather than a commodity that is available for purchase (Silverstone, Hirsch, & Morley, 1992, p. 23). People see themselves as intimately connected to the ownership choices that they make (Belk, 1982, 1990). *Objectification* "reveals itself in display" (Silverstone et al., 1992, p. 19), occurring when an object becomes integrated into the routines of everyday life. It is expressed in the way that objects are located within the home and in the way that the home is adapted and configured for those objects (Silverstone et al., 1992, p. 20). *Incorporation* focuses on use. It considers how objects are incorporated into the routines of the household, recognising that trajectories of use may change over time (Silverstone et al., 1992, p. 21). Lastly, *conversion* describes how the object is presented to people outside the home, "symbolically as well as materially" (Silverstone et al., 1992, p. 23). For the hobbyist boardgamer, these four stages are evident in the selection and purchase of games (appropriation), in the creation of spaces and storage in the home (objectification), in the activities of play, including the organisation of recurring or sporadic game nights (incorporation), and in the boardgamer's presentation of themselves as someone who enjoys boardgames, for example by buying themed t-

shirts or homewares, custom pieces or “sleeves” to protect their games, or participating online in boardgaming communities (conversion). Further discussion of this, including examples, is provided in Chapters 5, 6 and 7.

2.5. Gamers

The second perspective in Björk’s framework is the study of gamers. In this thesis, I use the words “gamers” and “boardgamers” interchangeably with “players” – broadly speaking, I understand “gamers” to refer to self-identified hobbyists and “players” to refer to people who are actually engaged in play. Sadly, the word “gamers” has become associated in the mainstream with videogamers – and, by association, with the culture of toxic masculinity embedded in the “gamergate” movement (Chess & Shaw, 2015; Massanari, 2017; Mortensen, 2016). In using the term here, I return to its earlier context as shorthand for the people who use, play and love games.

This section turns attention to the *users* of games, and to “the cultural, social, and psychological roles that games have in relation to people” (Björk, 2008, p. 65). It discusses the value that hobbyists place on gaming and the types of knowledge that gaming builds and requires, as well as the ways in which gamers adapt and appropriate games as representations of their identity. Further, I explore what it means to self-identify as a boardgamer by examining the constitution of Serious Leisure communities and what it means to be a hobbyist and a collector. This section supports the “Boardgamers” section of this thesis, which is concerned with the goals, behaviours and motivations of these passionate users.

2.5.1. (Board)gamers as users

There is a tendency for HCI research to focus on experimental data over “practice” research techniques (M. Carter, Downs, et al., 2014, p. 33) that explicitly focus attention on understanding the user, such as ethnography, observation and interview methods (Caine, 2016, p. 985). Nevertheless, understanding the user (Wobbrock & Kientz, 2016, p. 43) is recognised as an essential element at the core of HCI research and practice that “will help you build better interactive technologies and systems” (Ritter, Baxter, & Churchill, 2014, p. 4). Understanding users can sensitise us to the need to design for – and with – a *range* of users; these users may become co-

creators of a game or other work (Banks, 2013). We can study both their inherent features and their orientation towards a specific object of study.

In understanding (board)gamers as users, it is important to consider their motivations for play. Moreover, it is important to understand them as individuals who may have particular needs. For example, some gamers have physical impairments (Andrade, Baker, Waycott, & Vetere, 2018; Gerling, Linehan, & Mandryk, 2018; Yuan, Hanrahan, Lee, Rosson, & Carroll, 2017). As already noted, the *Meeple Like Us* project is one response to this, although its focus is on the suitability of boardgames for people with physical impairments rather than on the people themselves (Heron et al., 2018a, 2018b). Different age groups have differing technology preferences, which may extend to selection of games (Max V. Birk, Friehs, & Mandryk, 2017; Carrasco, Waycott, Baker, & Vetere, 2018; Carroll, Convertino, Farooq, & Rosson, 2012; Frennert & Östlund, 2014; Little, Fitton, Bell, & Toth, 2016). For example, one study found that younger boardgamers are more likely to prefer “easy wins” whereas older gamers prefer “discovery”; this study also suggests that boardgamers become less interested in high conflict as they age (Yee, 2017b)¹¹. Other relevant factors may include gender or language spoken (Tekofsky, Miller, Spronck, & Slavin, 2016). Fortugno (2008) and Juul (2010) both turn attention to the behaviours and needs of casual gamers. The player/user is clearly fundamental to games and to games research.

2.5.2. Gaming capital and Gaming literacies

Bourdieu (1973) introduced the notion that an individual’s capital – the resources on which they could draw – could be derived not only from economic sources but also from the value of their social or cultural assets. Cultural capital is the skills, competencies, education and assets that an individual possesses, which may be the result of their own endeavours or may be a (direct or indirect) result of the class system (Bourdieu, 1973, pp. 174-175); Social capital is the sum of the social resources that are available to an individual through their friendship and acquaintance networks (Bourdieu, 1986).

¹¹ As discussed in Chapter 6, I believe that the majority of respondents to this large survey were casual boardgamers rather than the hobbyists which are the focus of this research.

Consalvo (2007) demonstrates that these notions of capital can be extended to the concept of *Gaming capital* – generated through participation in gaming communities and activities and demonstrated through knowledge not only of the games themselves but of the paratexts that surround and support them (Consalvo, 2007, p. 22). She presents the notion of the “ideal gamer,” who (Consalvo, 2007, p. 123)

may excel at playing particular types of games, or be quite knowledgeable about gaming hardware or the latest releases. They are aware of multiple options available in games, and can probably provide help or advice to other players”.

Walsh and Apperley (2009) build on this notion, exploring hierarchies of gaming capital in adolescent videogamer populations and demonstrating that gaming capital is not homogeneous but exists in different forms. These differentiate (for example) between players’ diegetic and nondiegetic understandings of gameplay (Walsh & Apperley, 2009, p. 5). Similarly, R. Perry et al. (2018) show that playing with online friends, strangers and ‘real-life’ friends affects bridging and bonding social capital in different ways. Understanding social and cultural capital provides a language to discuss the importance not only of the *skills* of gaming but of *knowledge about* gaming (MacCallum-Stewart et al., 2018, p. 177), and of the myriad ways in which this contributes to an individual’s identity. I will discuss this further in Section 2.6.2.

Aligning with Bourdieu’s original focus on education (Bourdieu, 1973) and a long-standing interest in games as tools for education and learning, Walsh and Apperley (2009, pp. 5-6) explicitly recognise literacy as a form of cultural capital and cultural capital, in turn, as a contributor to literacy. Games, moreover, require *procedural literacies* (Bogost, 2007, 2008) which enable the player to understand “the rules of the system; the significance of these rules over others; claims about the world the rules make; and the gamers’ response to those claims.” (Walsh & Apperley, 2009, p. 3). A more comprehensive view of the literacies of gaming is provided by Zagal (2010), who builds on work by Gee (2003) to present a three-level representation of games literacy (Zagal, 2010, p. 23):

1. Having the ability to play games.
2. Having the ability to understand meanings with respect to games.
3. Having the ability to make games.

This representation does not suggest that users who do not engage in game-making are somehow illiterate, or that they are insufficiently knowledgeable about and

competent in gaming, but that there is a relationship and hierarchy between the three activities. Zagal presents play as a necessary precursor to understanding meanings in games, with both of these literacies required in order to make games. Although Zagal's framework was developed for videogames, it is nevertheless a useful framing of the types of shared concepts, behaviours and language that can develop in a community that revolves around boardgaming. I share his characterisation of the third core literacy (being able to make games) as an optional addendum; it is possible to participate fully in boardgaming activities without making one's own games, although that practice might deepen the understanding of the first two literacies, "blurring ... the line between consumer and producer" (Woods, 2012, p. 128). Mäyrä (2017) offers a more detailed structure of the literate player, which does not require the ability to make games but rather the ability to extend or enhance them, and to understand them as a form of media (Mäyrä, 2017):

- 1) fundamental ludic understanding ("this is play, game has rules"),
- 2) functional gaming skills ("this game works this way"),
- 3) strategic and meta levels of game skills ("this way of playing is interesting / makes sense for me"),
- 4) social ludic skills ("this is what makes playing fun for other, this is why these people want to play"),
- 5) creative and productive game play skills ("this game can be extended, or reimaged in these ways"), and
- 6) literacy related to media in general ("this game is produced to make money this way, its marketing and business strategies rely on this kinds of principles").

Like Walsh and Apperley, both Zagal and Mäyrä stress the importance not only of consumption but of the gamer situating their own practices in a broader ecology of "tangible forms of literacy practices" (Walsh & Apperley, 2009, p. 10) as a fundamental element of these game literacies.

The concepts of gaming capital and gaming literacies present a fundamentally player-centric approach. The body of work around this topic, however, has focused on digital games, with little attention to the literacies and cultural capital that enrich the experience of tabletop gaming (Chen, 2013). In Section 2.6.2.4, I propose that hobbyist expertise incorporates the notions of gaming capital and gaming literacies. I return to these ideas in Chapter 6, where I demonstrate their relevance and applicability to hobbyist boardgamers.

2.5.3. Boardgamers as serious leisure practitioners, hobbyists, and collectors

Throughout literature, hobbies are routinely depicted as both useful and productive. They are contrasted with idleness, which is seen as harmful and disruptive. This is particularly evident during difficult times such as the Great Depression in the USA (Alasuutari, Luomanen, & Peteri, 2013, p. 460) and the Second World War (Menninger, 1942). Populations need to be distracted from unpleasant situations – and the best distractions are those that are consuming (Menninger, 1942, p. 122):

Most individuals will have at least some leisure time when the need for relaxation, escape and re-creation will be even greater than under normal conditions. If this time is utilized by the individual for his own maximum benefit in a constructive and intelligent manner, his daily work may be much more efficient and his own morale supported and sustained.

Like many studies, which instrumentalise games and play, this approach instrumentalises hobbies to improve an individual's work performance and morale. As I will show, however, more recent work has focused on intrinsic features of the hobbies themselves rather than their potential to maintain morale, improve work performance, or change behaviours. In this section, I outline the Serious Leisure Perspective before discussing the relationship between Play and Serious Leisure. I discuss the behaviours and practices of hobbyists and collectors before presenting boardgamers as both hobbyists and collectors.

2.5.3.1. The Serious Leisure Perspective (SLP)

In this section, I describe the Serious Leisure Perspective (SLP), which offers a framework for conceptualising participation in hobbies and other leisure pursuits and, therefore, for understanding boardgamers as hobbyists and collectors. It builds on other work exploring concepts of community including Social Worlds Theory (Clarke & Star, 2008; Unruh, 1980).

Stebbins (1982) introduced the SLP in the context of a need to fill an expected increase in leisure time due to anticipated reductions in working hours. Serious Leisure is (Stebbins, 2015b, p. 17)

the systematic pursuit of an amateur, hobbyist, or volunteer activity that is sufficiently substantial, interesting, and fulfilling for the participant to find a (leisure) career there, acquiring and expressing a combination of its special skills, knowledge, and experience.

Serious Leisure is “more than simply a pleasant or diversionary experience” (Elkington, 2011, p. 256); it is a positive way to occupy one’s non-working time, “a way of finding personal fulfillment, identity enhancement, self-expression, and the like” (Stebbins, 1982, p. 253). It requires effort to use free time constructively, as is the case with “Hobbies that demand skill, habits that set goals and limits, personal interests, and especially inner discipline” (Csíkszentmihályi, 2008, p. 162).

Leisure is enjoyable. A 1979 study shows that just 20% of participants in one study found more fulfilment in work than in leisure (Yankelovich, 1979, as cited in Stebbins, 1982, p. 253). On the other hand, others report that people “have had some of their most positive experiences while on the job ... [and] when supposedly enjoying their hard-earned leisure, people generally report surprisingly low moods” (Csíkszentmihályi, 2008, pp. 157-158). Like Zagal’s third level of games literacy, to Csíkszentmihályi the autonomy and profundity of a practice are improved by creation – in his example, the pleasures of solving crosswords are enhanced when one also creates them (Csíkszentmihályi, 2008, p. 129). Unlike earlier work which instrumentalises hobbies, this approach places the focus squarely on the hobby as a worthwhile and satisfying pursuit.

The SLP contrasts Serious Leisure with Casual and Project-based Leisure, which are “fleeting, and require minimal effort or concentration” (Hartel, 2010, p. 850). It understands activities as subject to “social psychological, social, cultural, geographical, and historical conditions” (Stebbins, 2014, p. 3). Practitioners of Serious Leisure are “buffs”, as opposed to the “consumers” (Stebbins, 2012, p. 70) for whom a pursuit “is fundamentally hedonic, pursued for its significant level of pure enjoyment, or pleasure” (Stebbins, 2012, p. 85). Unlike disinterested Casual Leisure, Serious Leisure makes demands of its adherents: it “requires its participants to allocate more time” (Stebbins, 2015b, p. 38) and “often borders on being *uncontrollable*. It engenders ... a desire to pursue the activity beyond the time or the money (if not both) available for it” (Stebbins, 2015b, p. 39).

Stebbins recognises Serious Leisure as an activity that contributes to a practitioner’s sense of self. Serious Leisure, he claims, can lead to personal fulfilment (Stebbins, 1982, p. 253); it allows people “to express their abilities, fulfil their potential,

and identify themselves as uniquely human” (Stebbins, 1982, p. 251). “Serious leisure offers a basis for a lifestyle in which the activity is part of one’s identity.” (Alasuutari et al., 2013, p. 460). Serious Leisure practitioners “are inclined to speak proudly, excitedly, and frequently about [their activities] to other people, and to present themselves in terms of them when conversing with new acquaintances” (Stebbins, 1982, p. 257). This establishes a claim to membership of a wider group rather than to an individual eccentricity (Alasuutari et al., 2013, p. 467); activities are legitimized by being shared with others, even when they are perceived as marginalized or unusual (Woods, 2012, p. 128). Practitioners earn social capital through participation in Serious Leisure communities (Trepte, Reinecke, & Juechems, 2012, p. 832).

2.5.3.2. Play and Serious Leisure

Woods demonstrates that hobbyist boardgamers are distinguished by their “degree of enthusiasm [and] degree of evangelism for the hobby ... atypical of the broader range of people who, on occasion, play hobby games” (Woods, 2012, p. 120). Although Stebbins primarily positions play as a form of Casual Leisure (Stebbins, 2015b), he distinguishes between play that is undertaken as a ‘disinterested’ or as an ‘interested’ activity (Stebbins, 2015b, p. 12). In both digital and tabletop gaming, there is a demonstrable distinction between disinterested and interested engagement – between Casual and Serious Leisure (see Figure 2.5).

Game medium	Tabletop	"[G]ames could be played for sheer enjoyment" (Whitehill, 1999, p. 127)	"share a love of tabletop gaming and feel a strong camaraderie with each other." (Chen, 2013, p. 1)
	Digital	"They often did not think of themselves as playing video games (even though they clearly were)" (Juul, 2010, p. 1)	"some [players] spend more than half their current lives [in the game world]" (Aarseth, 2004, p. 361)
		Casual leisure	Serious leisure
		SLP	

Figure 2.5 Player preferences by game medium and activity type.

2.5.3.3. Hobbyists

Recreation means doing something which is different from your work and which you enjoy doing. It should be so different from your work that while doing it you will forget your work. This matter of being able to forget your work is the real value in recreation. (Menninger, 1942, p. 122)

Literature on hobbies and hobbyists distinguishes them from those who earn their living in that activity. This distinction highlights the SLP's somewhat ambivalent position in regard to devotee work and amateurism. Thus, in Hartel's study of gourmet cooking, Dorene is hailed as "a true hobbyist" because she "has never worked in the food service industry" (Hartel, 2010, p. 848).

The SLP identifies three broad classifications of activity which constitute Serious Leisure: Amateur, Hobbyist, and Volunteer. It proposes five principal types of hobbyist (Stebbins, 2015b, p. 16):

- 1) collectors,
- 2) makers and tinkerers,
- 3) activity participants (in non-competitive, rule-based, pursuits such as fishing and barbershop singing),
- 4) players of sports and games (in competitive, rule-based activities with no professional counterparts like long-distance running and competitive swimming) and
- 5) the enthusiasts of the liberal arts hobbies, which are primarily reading pursuits.

Although the SLP allows for some overlap between categories, it seems to conflate the hobby practices with the hobbyist – despite the fact that hobbyists are known to "fashion themselves highly tailored versions of the practice" (Azevedo, 2013, p. 463). Thus, the SLP categorises long-distance runners as players of sports and games, stamp collectors as collectors, and quilters as makers and tinkerers. I suggest, however, that it is the individual's orientation to the hobby, rather than the hobby itself, that determines which of these categories they embrace most nearly.

Using stamp collecting as an example, one individual may find his chief satisfaction in the acquisition; another obtains it in accumulating; for another it is the opportunity for organizing and cataloguing; for still another, the opportunity to create – to "write up" and study his stamps. Or, most important, one person may find satisfaction in all of those activities. (Menninger, 1942, p. 124)

Similarly, players of the Miniatures game *Warhammer 40,000* (*W40K*) (Priestley, 1987) find a broad range of pleasures in the game that encompass activities such as painting

miniature figures, while still participating in organized play activities (M. Carter, Gibbs, & Harrop, 2014). This acknowledges that even in competitive games, there are pleasures of participation that are not tied to outcomes. Boardgamers are not simply players; their practices also embrace collecting, making, activity participation, and learning and writing about their hobby.

Because they are not work, hobbies are practiced in private time, as independent activity, and may be considered a luxury. As a result, hobby participation can be deeply gendered (Stalp & Conti, 2011, p. 401):

In traditional families women often experience leisure differently and in less positive ways than their spouses or children ... Young, heterosexual unmarried women find they need to alter their leisure choices to accommodate relationships with romantic partners, ... although men rarely do this for their women partners. Women's independent leisure pursuits are often considered to be threatening to a traditional heterosexual marriage ... Mothers of young children frequently forego the leisure pursuits that they enjoy in the face of family demands, while fathers are less apt to do this.

Linked to gender issues is the availability of a private space in which to practise the hobby and to store and contain its material artefacts (Stalp, 2006, pp. 119-120). These spaces are shared with others through images (Gibbs, Carter, & Nansen, 2017) which present the owner as embedded within the hobby¹². These practices of accumulation, display and storage, practice, and presentation to others are part of the process of domestication that I described above.

2.5.3.4. Collectors

A further manifestation of Serious Leisure is collecting, which is, as I have shown, a fundamentally material practice. Trajectories of knowledge accumulation and behavioural orientation frequently include a conscious choice to become a serious collector (McIntosh & Schmeichel, 2004), which requires not only knowledge about the collected artefacts but “a sophisticated appreciation” of them (Stebbins, 2014, p. 83).

¹² See the discussion of ‘Shelfies’ in Chapter 6

“Serious” collectors collect for the joy of collecting rather than for expected financial gain. Although they may be aware of the investment potential of their collection, collecting objects because of their perceived potential to increase in value “dilutes” the collection’s leisure potential (Stebbins, 2014, p. 85). Like the fun of play and hobbies, the joy of collecting is intrinsic to the collection itself, rather than subject to extrinsic instrumental factors like economic value (McIntosh & Schmeichel, 2004, p. 86). Collecting, like other serious leisure practices, is frequently gendered (Nemeth, 2005; Olmsted, 1991, 1993; Stalp, 2006; Stalp & Conti, 2011); it is also typically highly specialised and loosely organised, and generates specific knowledge about the topic or practices of the domain (Olmsted, 1993). Collecting is not simply accumulating or hoarding (Nordsletten, Fernández de la Cruz, Billotti, & Mataix-Cols, 2013). It is a source of knowledge “no matter how narrow and esoteric” and “is vaguely believed to be something done in the service of science or art” (Belk, 1995, p. 487). Collecting is defined by the collector’s orientation towards their collection – “the relationship of a book collector to his possessions ... does not emphasize their functional, utilitarian value – that is, their usefulness – but studies and loves them as the scene, the stage, of their fate” (Benjamin, 2007 [1969], pp. 59-60). Like Huizinga (1950 [1938]), Benjamin (2007 [1969], p. 60) invokes the idea of a magic circle in which the collector’s books

are fixed as the final thrill, the thrill of acquisition, passes over them ...
for a true collector the whole background of an item adds up to a magic
encyclopedia whose quintessence is the fate of his object.

Although Belk presents collecting as “legitimis[ing] acquisitiveness” (Belk, 1988, p. 154), the SLP offers a more nuanced view of serious leisure collecting, which typically leads to some form of specialisation: “Casual collectors gather a wide variety of books; more serious bibliomaniacs focus on particular subjects, authors or genres” (Hartel, 2010, p. 849) (See also Belk, 1995, p. 481; Stebbins, 2014, p. 83). Moreover, a collection has ongoing significance that extends beyond its fundamental relationship with the collector: “A collector’s attitude toward his possessions stems from an owner’s feeling of responsibility toward his property.” (Benjamin, 2007 [1969], p. 66).

The SLP understands hobbyists’ practices as just one of several activities. Thus, a hobbyist who collects is narrowly defined as a collector rather than a maker or tinkerer, an activity participant, a player or an enthusiast of the liberal arts. As I will

show in Chapter 6, this is an overly simplistic understanding of collecting, which may be just one aspect of an individual's overall participation in a hobby.

2.5.3.5. Boardgamers as hobbyists and collectors

Woods's definitive study of boardgamers focuses on the membership of BoardGameGeek as a "particularly active" community of devoted hobbyists (Woods, 2012, p. 120). Founded on January 22, 2000, the BoardGameGeek website enables its users to track, catalogue, discuss and comment on boardgames – generating "meticulous criticism" (Woods, 2012, p. 128). Its members have sufficient interest in boardgames to register an account with the site and, through it, to engage with other boardgame enthusiasts, including players, designers, publishers, artists, reviewers and critics. They are, in other words, hobbyist boardgamers.

When Woods completed his study in mid-2011, BoardGameGeek boasted "400,000 members and a database containing over 50,000 individual games" (Woods, 2012, p. 121) and was ranked by Alexa.com as amongst the top 7,000 most frequently visited websites. Seven years later, the site has over 1.75 million users, catalogues over 225,000 objects¹³, and in February 2018 was ranked by Alexa as the 1,649th most visited site worldwide. Males and people with higher education levels are over-represented on BoardGameGeek – Woods describes boardgames as "The Hobby of the Over Educated" (Woods, 2012, p. 125) – although the gender disparity appears to have reduced since Woods conducted his research. "No matter a gamer's predilections, ..., she can find a home at The Geek." (Chen, 2013, p. 1).

As hobbyists, boardgamers are engaged with playing games – but also with the other dimensions of being a hobbyist that I described above. Thus, the hobby of boardgaming encompasses the SLP activities of *collection*, for example, collecting specific game pieces (Gloger, 2017); *making and tinkering*, for example, customising and decorating games (Chen, 2013); *activity participation*, deriving satisfaction from participation and the company of other enthusiasts (Woods, 2012, p. 123); *playing games*, including attention to the rules, systems and competition of game play

¹³ Since 2011, BoardGameGeek's database has extended to include gaming magazines and other peripheral products; this does not compare directly with Woods's data

(Beaumont, 2010; Puddephatt, 2005); and even *liberal arts* participation, valuing the artwork in a game, or its transmedial connection to literature (Booth, 2015; A. Brown & Waterhouse-Watson, 2016), or writing reviews and session reports, which at times resemble fanfiction (Gola, 2004). Moreover, hobbyists might engage to some degree in amateur or project-based leisure activities such as designing a game or organizing a club or event.

Although collecting itself is an individual activity, the clubs provide members with a place for showing kindred enthusiasts the items they have collected and garnering insider information about how to acquire the best specimens of their kind of collectible. (Stebbins, 2014)

“There are a hundred ways to play with games when you can’t actually play the games themselves” (Rick Holzgrafe, as quoted in Woods, 2012, p. 128); boardgame enthusiasts’ serious engagement with their hobby is manifested in diverse ways which defy attempts to reduce them to a single activity.

2.6. Gaming

Having considered the roles of games and of gamers, I now turn attention to the third perspective of Björk’s (2008) model, the *practices* of gaming. If studying games is the study of artefacts, and studying gamers is the study of users, to study gaming is to observe and understand the user experience of play.

Although Stebbins explicitly excludes play from the activities which can constitute serious leisure (Stebbins, 2015a, 2015b), he has clarified that “A game can have chance components and still become a hobby, however, because it also allows decision-making informed by accumulated knowledge of and experience with the game” (Stebbins, 2014). The notion of serious leisure thus readily accommodates the broader *pastime* of play (M. Carter, Gibbs, et al., 2014). Like other forms of serious leisure, this engagement “often borders on being *uncontrollable*. It engenders ... a desire to pursue the activity beyond the time or the money (if not both) available for it” (Stebbins, 2012, p. 39).

In this section, I borrow not only from the disciplines of Game Studies and HCI but from the related discipline of Computer-Supported Collaborative Work (CSCW), which is concerned with understanding and describing lived practices across a range of settings. Further, I consider the broader hobbyist practices of community participation

that – whilst not themselves play – nevertheless constitute part of the *pastime* of gaming.

2.6.1. Computer Supported Collaborative Work (CSCW)

In CSCW, as in HCI, there is a deep tradition of understanding practices in their own right – that is, of observing and describing what is done rather than necessarily seeking to alter or improve it. As Plowman, Rogers, and Ramage (1995, pp. 320-321) argue,

studies carried out primarily to understand a particular working practice are making a valuable contribution to the body of CSCW knowledge in their own right.

“Lived practice” is seen as irreducible, “embodied and enacted” (Suchman, 2007, p. xii). Dourish (2006) echoes this perspective, arguing that it is sufficient in HCI to understand the user; research need not necessarily produce formal implications for design in order to be valid and of interest to the community.

The discipline of CSCW is concerned generally with the study of cooperative work. Key texts have studied cooperative work on large naval vessels (E. L. Hutchins, 1995a), in architectural practice (Schmidt & Wagner, 2004), in business machines (Suchman, 2007) and in traffic and vehicle control situations (Bentley et al., 1992; Heath & Luff, 1992; E. L. Hutchins & Klausen, 1996). CSCW has also turned attention to the contexts of gaming (B. Brown & Bell, 2004; Crabtree et al., 2007; Sall & Grinter, 2007; Szalavári, Eckstein, & Gervautz, 1998). This broad range of subject matter and approaches has been described as “more a bazaar than a cathedral” (Schmidt & Bannon, 2013).

In the context of boardgaming, the tasks of cooperation and coordination are of particular interest (Kew, 1987; Liberman, 2011). In Chapter 4, I discuss the importance of articulation work (Bowers, 1994; Schmidt & Simone, 1996) in playing a boardgame; in Chapter 8, I extend this to discuss additional coordinative and epistemic tasks and activities. As I show, although playing a boardgame is a competitive activity, it is also deeply cooperative, requiring the players to work together to enact and enforce the rules of the game, as well as to perform the small, invisible management tasks that are done by rote in a digital game.

Also of interest to CSCW in the context of boardgames is the forming and enacting of plans. Suchman (2007, p. 13) notes that “planning is itself a form of situated activity that results in projections that bear some interesting, and as yet unexplicated, relation to the actions that they project.” Plans are not a detailed, fixed and unchangeable commitment to a particular course of action, but rather are “orienting devices whose usefulness turns on their translation to action within an uncertain horizon of contingencies” (Suchman, 2007, p. 25). A plan, therefore, exists in an ecosystem which comprises goals which define “the actor’s relationship to the situation of action” (Suchman, 2007, p. 53), advance planning (the lower the prior knowledge of the environment, the more advance planning is required), possible replanning when unexpected conditions are encountered, and subsequent action (Suchman, 2007, p. 53). Gee (2008, p. 256) positions such plans as “model simulations to help us prepare for action in the world”.

A lens from the literature of CSCW and HCI that I apply to boardgaming is the theory of distributed cognition (Hollan, Hutchins, & Kirsh, 2000; Turner, 2016). Distributed cognition examines how cognitive phenomena and processes are distributed and move amongst and through people and objects; it is interested not only in a snapshot of cognitive processes at a particular point in time, but also in the cultural environment, the trajectories along which information is transmitted and transformed (Hollan et al., 2000, p. 177), and the way that they contribute to an overall “cognitive system” (Turner, 2016, p. 78). Plans are situated and embodied (Suchman, 2007, p. 13), and so is cognition (Hollan et al., 2000, p. 177). The role of the human body is fundamental to understanding distributed cognition because it is through our bodies that we interact with people and with objects.

By focusing close attention on the cultural, situated, and embodied acts of gaming, we can better understand play in its own right. This understanding can be used to inform the design and production not only of the boardgames that we study but of other forms of games, as well as other situations where cooperation and competition are tightly aligned. I will explore these issues in detail in Chapter 8.

2.6.2. Community participation as an extended experience of gaming

A play-community generally tends to become permanent even after the game is over. Of course, not every game of marbles or every bridge-party leads to the founding of a club. But the feeling of being “apart together” in an exceptional situation, of sharing something important, of mutually withdrawing from the rest of the world and rejecting the usual norms, retains its magic beyond the duration of the individual game. (Huizinga, 1950 [1938], p. 12)

Engagement with gaming extends to a range of other experiences and practices that are associated with gaming although not themselves part of the activity. Examples of this include collecting and community participation. The extended experience of gaming starts well before a game appears on a table but is nevertheless demonstrably part of the gamer’s core practices. Woods (2012, pp. 134-135) has suggested that collecting and curating a set of boardgames may itself represent a form of play; M. Carter, Gibbs, et al. (2014) show that play can be understood as an extended pastime.

In this section, I discuss understandings of community in both its historical sense and its modern context, with a focus on the types of community that are centred on play or on playful practices. Singling out two key concepts, I then focus attention on the importance of a shared repertoire amongst members of a community group, and discuss the nature of hobbyist expertise, which is built in hobbyist communities. I will return to these concepts in Chapter 6.

2.6.2.1. Historical concepts of community

Early understanding of the nature of community can be traced back to Tönnies (1971 [1887]). Focusing on place as the locus and driver of our relationships, Tönnies distinguishes between *Gemeinschaft* (community), the home of folkways and mores, of family and intimate relationships, and *Gesellschaft* (society), found in big cities, where imposed rules and norms took the place of tradition. From this early work come the concepts of community as something driven by consensus and tradition, as a collectivist endeavour that works for the greater good. Wittel returns to these ideas in his description of “Network Sociality [which] consists of fleeting and transient, yet iterative social relations; of ephemeral but intense encounters” (Wittel, 2001, p. 51). To Wittel, the infrastructure of this network society is information exchange and there is an emphasis on playfulness (Wittel, 2001, p. 68). As a writer of the late nineteenth

century, it is unlikely that Tönnies would recognise today's international, globe-spanning groups of barely-connected strangers as communities, yet that is the way that they perceive and present themselves. A bridge between the two may be found in the work of Granovetter (1973, 1983) and Wellman (1979, 1998, 2001).

Granovetter (1973) follows the role of “ties”, information-carrying connections. He shows that “Weak ties provide people with access to information and resources beyond those available in their own social circle; but strong ties have greater motivation to be of assistance and are typically more easily available.” (Granovetter, 1983, p. 209). Weak ties act as bridges, binding together networks of internally strong ties. A shared hobby or passion – and participation in a community – may not build the strong ties of *Gemeinschaft* that Tönnies envisaged but is nevertheless recognisably building weak ties to other participants. Although the location of the community has expanded, and the modes of interaction have changed, traditions, mores, and consensus remain central to our understanding of community.

Social Worlds Theory emerged from work that, like that of Tönnies, initially saw community as place-bound. Later, it recognised that it was the relationships rather than geographical locations that were important in the formation and life of these groups (Clarke & Star, 2008, pp. 114-115). Social worlds are structural, and have an organisational focus, acting as communication centres, and comprising multiple geographic centres and subworlds (Unruh, 1979, pp. 283-286). There are four key characteristics of individuals' involvement in social worlds: participation is voluntary and chosen by the participant; participants are only able to identify with part of the social world due to its size and distributed nature; participants identify as members of multiple social worlds; and interactions are mediated by technology (at the time of the article's publication, by letters, telephones and mass media such as newspapers and radios) (Unruh, 1979, pp. 277-280; see also Wittel, 2001, p. 71). Like Lave and Wenger's work on Communities of Practice, Social Worlds Theory is particularly interested in workplaces and professional situations, although it also has clear implications for leisure. It places work – which can include the work of play – “in the foreground” (Clarke & Star, 2008, p. 123) of the analysis.

2.6.2.2. Communities of Practice, Interest, and Play

Many disciplines and researchers have turned attention to the behaviours of groups of people who share a common interest, the (perceived) connections between them, and the specialist collections, practices, resources, behaviours and language that they develop. From cognitive anthropology and educational theory comes the notion of these groups as Communities of Practice (Lave & Wenger, 1991; Wenger, 1998). “Mutual engagement”, “a joint enterprise” and “a shared repertoire” are considered to be the three core dimensions of a Community of Practice (Wenger, 1998, pp. 72-73). This framing has been widely adopted in Information Systems (Wasko & Faraj, 2005). Social Worlds Theory (Clarke & Star, 2008; Unruh, 1979, 1980) has been applied in STS; Leisure Studies offers the SLP (Stebbins, 2014); and studies of games provide notions of Gaming Capital (Walsh & Apperley, 2009) and “Ludoliteracies” (Zagal, 2010) as well as of Communities of Play (Pearce & Artemesia, 2011).

Woods (2012, p. 129) uses the term ‘Community of Interest’ to describe BoardGameGeek. The term builds on the concept of Communities of Practice (Lave & Wenger, 1991). A core difference between Communities of Interest and Communities of Practice is that intentionality and cohesion are high in Communities of Practice, but are less apparent in Communities of Interest (Henri & Pudelko, 2003). Similarly, the term ‘Communities of Play’ (Pearce & Artemesia, 2011) builds on Lave and Wenger’s (1991) work to describe communities of hobbyist players in virtual worlds. These communities are “neither new nor unique to the Internet” (Pearce & Artemesia, 2011, p. 1); gaming clubs, sports leagues and historical re-enactors are all examples of such communities that do not necessarily co-ordinate or engage online and where “play itself is definitional” (Gelder, 2007, p. 140). Pearce notes the great similarities between Communities of Play and Communities of Practice, but proposes the new term to acknowledge that “play practices warrant their own understanding of how communities form and are maintained” (Pearce & Artemesia, 2011, p. 5). The term builds on the concept of a “play community” (Pearce & Artemesia, 2011, p. 129), integral to De Koven’s understanding of play “because it is through a community of players that the well-played game happens.” (De Koven, 2013, p. xxii).

Communities of play can provide “a catalyst for strong and powerful social bonds” and provide “a context for social interaction” (Pearce & Artemesia, 2011, p. 126),

even helping shy participants overcome these limitations. The focus of Pearce's work is communities within Virtual Worlds – similar to the guilds of MMORPGs like World of Warcraft (Steinkuehler & Williams, 2006; Williams et al., 2006) – which she, following McLuhan's notion of a "global village" (McLuhan, 1962), terms a "global playground" (Pearce & Artemesia, 2011, p. 6). Unlike the boardgaming communities which I will discuss in Chapter 6, play happens *within* the spaces created by these communities; the spaces themselves are overtly playful.

A further framework for understanding community participation as a practice is the notion of Third Places. These are places that are neither home nor work, but are nevertheless familiar and "home-like" (Oldenburg, 1999). Although Third Places are rooted in the physical world, the concept is used to describe a range of mediated communities, including those that form around games and gaming (Akiyoshi, 2004; Christou, Law, Zaphiris, & Ang, 2013; Eklund, 2012; Snodgrass et al., 2012; Soukup, 2006; Steinkuehler & Williams, 2006; Wimmer, 2013; Zhang & Kaufman, 2016). It has also been applied in other situations such as health care (Wakelin & Street, 2015) and cross-cultural interaction (Aldosemani, Raddaoui, Shepherd, & Thompson, 2016), in libraries (Gray, 2017; Pennington, 2017), at conferences (Purnell & Breede, 2018), and even in shopping malls (Wilson, Yun, & Hong, 2017). Common to all of these models is the understanding that a community offers a sense of belonging and identity, that participation is an end in itself, that activities and practices are negotiated and mediated, and that participants share behaviours, routines, concepts, and language, and move along trajectories of knowledge and skill.

Online games and virtual worlds have been shown to act as Third Places (Aldosemani et al., 2016; Steinkuehler & Williams, 2006; Wimmer, 2013). They have a similar effect to social network sites or online communities in building social capital, in particular bonding social capital, which drives a sense of belonging and togetherness (Trepte et al., 2012, p. 832). Players of MMORPGs report continuing to engage with a game "because of the online friends I've made" (Koivisto, 2003). This supports an understanding that "frequent online communication with friends gives people a strong sense of online community" (Katz, Rice, Acord, Dasgupta, & David, 2004, p. 356). Moreover, participation "affirm[s] central values and interests for continued commitment and involvement ... allowing participants to clearly distinguish between

themselves, dabblers and non-participants” (Elkington, 2011, p. 274). When Woods (2012, p. 128) refers to “the sense of community within [board]gaming culture,” he is referring to this sense of belonging to a larger group. Of course, the overt emphasis on participation also risks a tendency for hobbyist activities to become “greedy” institutions, consuming ever-increasing amounts of people’s time, as Puddephatt (2008) shows with reference to chess clubs. I will return to these considerations in Chapter 7, which describes how players actively seek to negotiate a balance between their hobby and their family responsibilities.

2.6.2.3. Shared repertoire and trajectories of knowledge and skill

The value of the shared repertoire of the community (Wenger, 1998, pp. 72-73) is echoed in concepts of gaming literacies (Mäyrä, 2017; Zagal, 2010): its elements “gain their coherence not in and of themselves as specific activities, symbols, or artifacts, but from the fact that they belong to the practice of a community pursuing an enterprise” may include (Wenger, 1998, pp. 82-83)

 routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice.

Such routines make activities invisible; they go unnoticed until attention is drawn to them, and serve as “resources, or assemblages of resources” (A. Strauss, 1993, p. 194) which we can draw upon at will and as required. Similarly, shared language norms may be incomprehensible to an outsider but unremarkable to a participant. This repertoire – or the literacies associated with the repertoire – and its associated set of norms or conventions allow participants to function as competent members of a community.

Acquisition (and loss) of knowledge and skills over time is a key part of the seriousness of Serious Leisure; such trajectories constitute the “career” element in Serious Leisure (Stebbins, 2014, p. 3):

 the individual gets better and better as an amateur, hobbyist, or volunteer. It may be necessary to persevere when, for example, mastery of a skill or idea proves elusive. And because decline is possible in these activities (e.g., athletes who are past their prime), it may also be a part of this kind of career.

Social Worlds Theory provides an important perspective on this, recognising that “Every complex social world characteristically has segments, subdivisions of sub-worlds, shifting as patterns of commitment alter, reorganize, and realign.” (Clarke & Star, 2008, p. 119). This change in behaviours, groupings and activity does not invalidate the shared repertoire of the community but rather enriches it, creating a history of interpretation.

Serious *Chess* players, for example, invest considerable effort in the acquisition of knowledge, and care deeply about their rankings, whilst casual players “want to have fun with chess all the time, and ... don’t want to make it too much of an important thing” (Puddephatt, 2005, p. 301). It is possible that some chess players feel more of a connection to the rating hierarchy than to the club community or its members (Puddephatt, 2008, p. 166):

You say ‘hello’ to them at the club, like ‘How are you?’ and they answer with their rating! You know, I’m asking about their health ... And they say ‘yeah my rating is up 25 points ...’

Puddephatt suggests that it is the rating system that inspires devotion to the game and encourages players to improve: “A weekly game with a family member or friend simply does not carry the same propensity for devotion” (Puddephatt, 2008, p. 169). As I will show in Chapter 6, this is not the case for the boardgame devotees I interviewed. Indeed, several shy away from tournament play, preferring a less structured approach. Being a Boardgamer means playing, enjoying, and being knowledgeable about boardgames; it is not conflated with winning or expert ability as it is in Chess and, perhaps, other highly organised game societies. Like Tönnies’ concept of community rather than society, boardgamers embrace family, relationships and traditions over highly structured environments.

2.6.2.4. Hobbyist expertise

To be an expert at something is, in the vernacular, to understand it in such a way as to be really, really good at it: “An “expert” in common usage is a person with greater-than-average ability, talent or knowledge in a domain.” (Kirschner & Williams, 2013). Expertise in a field is linked to outcomes such as factors including better decisions and improved strategy selection, but also to detection & recognition of elements that novices fail to see; better qualitative analysis and monitoring of variables; opportunistic use of information resources; and lower overall cognitive effort

(Chi, 2006). Building on these definitions, I use the term “Hobbyist expertise” to describe the specific set of skills and knowledge that is unique to the hobbyist boardgamer. This recognises the importance of literacies and cultural capital and of the trajectories of the hobbyist’s leisure career as well as of the shared repertoire and knowledge of the community.

A hobbyist may have “a huge amount of background information ... and associated scholarship” (Miller, 2009, p. 188) on their hobby. They tend “to seek out additional information on the subject, to persist in the activity in spite of unforeseen hurdles, to ask more curiosity questions, and to learn a good deal from these experiences” (Azevedo, 2013, p. 464). The hobbyist expertise that is found within serious leisure communities (Chen, 2013; Kirschner & Williams, 2013; Menninger, 1942; Stebbins, 2015b) arises from the shared repertoire found amongst community participants and encompasses “routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts” (Wenger, 1998, p. 82), as well as literacies of gaming (Mäyrä, 2017; Zagal, 2010) and “gaming capital” (Consalvo, 2007; Walsh & Apperley, 2009). It recognises the trajectories of knowledge acquisition and participation that comprise the “career” element in Serious Leisure (Stebbins, 2014). The hobbyist expert (Miller, 2009, p. 26):

is not an academic, since his knowledge is not a part of his career or a form of self-presentation, a testimonial to his being clever or having more knowledge than another. It is, rather, a natural accoutrement of the act of collecting, the high degree of professionalism found in all great amateurs.

The expert hobbyist is knowledgeable about their hobby but is also knowledgeable about the community in which they practice it.

2.7. Conclusion

This chapter provides an overview of approaches to the study of games. It introduces the core disciplines of Game Studies and Human-Computer Interaction and examines the interdisciplinarity of each, providing the necessary disciplinary context(s) for this thesis. Further, it introduces the field of Board Game Studies, showing how Board Game Studies has developed separately from Game Studies and has a different, albeit complementary, focus. It aligns my research with each of these fields. Lastly, it introduces the core concepts of games, gamers and gaming (Björk,

2008), both as a means of conceptualising games research that transcends disciplinary boundaries and as an overall framework for the research program of this thesis. It demonstrates that it is not only the game that matters (Huizinga, 1950 [1938], p. 49) but also the marbles and the players.

Markedly absent from this review is an understanding of boardgames as playable, played artefacts. Beyond attention from Heron et al. (2018a) and Barbara (2017), there is no literature on the *play* of modern boardgames. Moreover, although Board Game Studies has an interest in boardgames as historical artefacts, the position of modern boardgames as artefacts has not been addressed in literature. Further, there has been little attention to boardgame players since Woods's work (Woods, 2012), and no attention at all to boardgamers as users in HCI. There is no work that combines the three disciplines of HCI, Game Studies, and Board Game Studies.

Chapter 3.

Methodology & Methods

3.1. Introduction

This chapter presents the methodology and methods for this research. Starting with the research questions, it describes in detail the deep disciplinary orientation to both HCI and Game Studies and the methodological approach that have guided and informed the three studies that form part of this thesis. Following on from this, it describes the methods used for data generation and analysis, showing both their relevance to the research questions and the ways in which they extend and reflect the methodological approach. It discusses my role as the researcher in the study, reflecting on the ways in which my participation – as both boardgame hobbyist and researcher – has influenced this work, and details relevant ethical considerations in both the conduct of the research and the management and dissemination of data.

Throughout the chapter, I reflect on the disciplinary context of this work and the ways in which it intersects the disciplines of HCI and Game Studies, as well as the smaller field of Board Game Studies. Further, I show how my constructionist interpretivist ontology and theoretical framework have shaped this research.

3.2. Research questions

As discussed in Chapter 1, the overarching Research Question that informs this thesis is **“How do serious leisure hobbyists experience and practice boardgaming?”** I approach this question through four subquestions which explore the dimensions of games, gamers and gaming:

RQ1. How do serious leisure boardgame hobbyists describe and define their hobby?

RQ2. How is serious leisure boardgame hobbyists' conceptualisation of their hobby realised in their practices of engaging with it?

RQ 1 and 2 consider why serious leisure hobbyists – people who engage with boardgaming as a serious leisure pastime (Stebbins, 2012) – play boardgames; what is their appeal, and what do enthusiasts enjoy (or not enjoy) about them. The focus here is on the *people* who play boardgames – the players, or gamers, and their relationship to the games that they play, as well as on the particular behaviours and practices that arise in the context of hobbyist boardgaming and that surround play. My interest is not only in what these people *say* they enjoy about boardgames but also in the ways in which they *live* that enjoyment. These questions consider how these participants construct their understanding of hobbyist boardgaming as a practice and as a serious leisure choice, and also how those practices are lived in their activities.

RQ3. How does digitisation of boardgames affect the practices of serious leisure hobbyists?

With RQ 3, the focus turns to the games and the experience of gaming: how does digitising boardgames affect the ways in which people choose to engage with the cardboard original? This builds on findings from RQ 1 and RQ2 about what serious leisure hobbyists enjoy about playing boardgames and examines how digitisation impacts on that enjoyment and on play practices. It focuses attention on the *games* themselves and on the elements of them that have appeal to and for the player.

RQ4. What is the role of a boardgame's materiality during play?

Finally, RQ 4 turns attention to *the experience of play* and the ways in which the game's materiality affects and enables the play experience. It closely examines the practices of play and focuses on interactions – with the game and its components, as well as with other players – and behaviours during play.

Table 1 demonstrates how these Research Questions align with the three studies conducted as part of this program of research.

Table 1 Contribution of the three studies to the overall Research Questions

Question	Study 1	Study 2	Study 3
RQ1. How do serious leisure boardgame hobbyists describe and define their hobby?		✓	
RQ2. How is serious leisure boardgame hobbyists' conceptualisation of their hobby realised in their practices of engaging with it?		✓	✓
RQ3. How does digitisation of boardgames affect the practices of serious leisure hobbyists?	✓	✓	
RQ4. What is the role of a boardgame's materiality during play?			✓

3.3. Methodological approach

This section describes how this research is situated in relation to the broad fields of research that it examines: the disciplines of Human-Computer Interaction and Game Studies, and the field of Board Game Studies. Both HCI and Game Studies are relatively new disciplines, and both have developed from the reference disciplines of sociology, computer science, design, and anthropology. Board Game Studies shares an interest in cultural studies with both disciplines, as well as offering an historical focus that is sometimes seen in Game Studies.

3.3.1. Disciplinary Orientation

The study of Human-Computer Interaction accommodates a broad variety of research methods and approaches, and is recognised as “highly inter- and multidisciplinary” (Wobbrock & Kientz, 2016, p. 40). It is “a discipline that has often proceeded with something of a mix-and-match approach, liberally and creatively borrowing ideas and elements from different places” (Dourish, 2014, p. 2). Olson and Kellogg (2014) collect many of these ideas and elements in their book *Ways of Knowing in HCI*, which outlines a variety of different methods that are used in HCI, from

ethnography's social research methods (Dourish, 2014) to quantitative methods such as Agent-based modelling (Ren & Kraut, 2014) and sensor data stream analysis (Vaida, Patterson, & Patel, 2014). This broad range of methods leads to a correspondingly broad range of research contributions which includes empirical research, artefacts, methodologies, theories, datasets, surveys and opinions (Wobbrock & Kientz, 2016). The research which I present here is empirical and qualitative, based on data from three distinct studies, and its findings are "based on observation and data gathering" (Wobbrock & Kientz, 2016).

Although the study of games and play is recognised as a focus of HCI research, primarily through the CHI Games and Play stream and the CHIplay conference series, these avenues nevertheless focus primarily on digital games and on the use of games as instrumental design tools. This research uses established methods from HCI – artefact analysis, interviews and observational data – to turn attention to the previously un-researched area of the play of tabletop boardgames.

If HCI is a young discipline, then Game Studies, the other discipline of this thesis, is an infant, with 2001 claimed to be the "Year One" (Aarseth, 2001) of a "third wave" (Juul, 2001) of Game Studies "as an emerging, viable, international, academic field" (Aarseth, 2001). In fact, there is a long history of games research, incorporating the work of scholars including Huizinga (1950 [1938]), Caillois (2001 [1958]), Suits (1967) and Sutton-Smith (1997), but the study of (mainly digital) games has developed as a distinct discipline of academic enquiry over the last twenty years. Like HCI, Game Studies embraces a wide range of methods which include qualitative methods, quantitative methods, mixed methods and research by design; indeed, games research "is characterised by rather exceptional multidisciplinary and interdisciplinary, which is rooted on the one hand in the complexity and diversity of its research subjects, as well as on the fact that modern scholarship of digital games is a rather young phenomenon." (Lankoski & Björk, 2015b, p. xi). Board Game Studies, in contrast, is clearly situated in studies of history and archaeology and embraces those methods of historical description.

More than multidisciplinary, interdisciplinary requires an attempt to synthesise elements of the core disciplines (Holbrook, 2013, p. 1867), integrating them

into a single approach (Lattuca, 2001, p. 20). Similarly, Deterding (2017, p. 18) notes the importance of continued engagement with each core discipline in interdisciplinary Game Studies research, even where one may be seen as the higher-prestige venue (as, he notes, is the case with HCI). In bringing together these different fields, I have embraced an interdisciplinary approach that recognises both the commonalities and the differences between HCI and Game Studies, integrating Game Studies' focus on play, artefacts and systems with HCI's techniques for studying, describing and interpreting interactions and objects in an environment characterised more by the absence of computers – the 'C' of HCI – than by their presence.

3.3.2. Ontology and Epistemology – theoretical perspective

At the heart of this research is a view of reality as socially constructed. This is an *idealist* ontology (Blaikie, 2007, p. 16; Crotty, 1998, p. 64) that values the ideas and perspective of the observer. Unlike the pure idealist, who denies the relevance if not the very existence of an external world (Blaikie, 2007, p. 16), I have adopted a *perspective idealist* position, regarding the constructed realities as different, equally valid, ways “of perceiving and making sense of an external world” (Blaikie, 2007, p. 17). This position, which privileges what people say, think and believe while still acknowledging the external existence of material artefacts, is fundamental to this thesis. I understand that serious leisure boardgamers collectively construct meaning through play and through their shared behaviours and beliefs. This constructed meaning references and acknowledges the materiality of the boardgames and practices that exist as artefacts in the world.

A theoretical perspective, or knowledge claim (Creswell, 2003, p. 6), combines epistemology and ontology. Epistemology describes the theory of knowledge embraced by the researcher – “what it means to know” (Crotty, 1998, p. 10) or “how we know” (Creswell, 2003, p. 6). It informs and directs the research by determining how a researcher understands and identifies knowledge and meaning. This enables validation of a research program or artefact according to the epistemological tenets that underlie it. Ontology describes the way that the researcher understands “what is” (Crotty, 1998, p. 10) – how the researcher understands and conceptualises knowledge. Together, they provide insight into the underlying assumptions and philosophy of a research

program. Table 2 shows the relationship between these elements of my research approach.

Table 2 Research approach (see Crotty, 1998)

ONTOLOGY	Socially constructed Perspectivist Idealist		
EPISTEMOLOGY:	Constructionist		
THEORETICAL FRAMEWORK:	Interpretivist Symbolic Interactionism		
METHODOLOGY	Pragmatic/mixed-method Qualitative		
METHODS	----- Qualitative -----		
	STUDY 1: GAMES	STUDY 2: GAMERS	STUDY 3: GAMING
METHODS	Artefact analysis Case study	Semi-structured interview Contextual inquiry	Observation, semi- structured focus group
ANALYSIS:	Theme identification Case-to-case synthesis	Thematic coding	Bottom-up, theme identification "phenomenological sensibility"
	----- Abductive -----		

Constructionist theories of knowledge seek to understand the world through subjective meanings towards experiences and objects. They understand that social phenomena develop in social contexts and see behaviours and practices as artefacts of that context. Knowledge is a product of social realities which are co-created by individuals and groups including the participant and researcher (Creswell, 2003, pp. 36-37), and which continue to evolve through social interactions. More simply, “meanings are constructed by human beings as they engage with the world they are interpreting.” (Crotty, 1998, p. 43); “it is impossible for fallible human beings to observe an external world – if one exists at all – unencumbered by concepts, theories, background knowledge and past experiences” (Blaikie, 2007, p. 17). A consequence of this is the view that there is no single truth, simply interpretations that may be more or less useful (Blaikie, 2009, p. 95; Crotty, 1998, p. 47).

Constructionism has four principal tenets: a focus on understanding; an acceptance of “multiple participant meanings”; an acknowledgement that understanding is socially and historically constructed; and a focus on theory generation (Creswell, 2003, pp. 6, 8-9). The constructionist researcher, therefore, privileges the participant’s experience and description, and the research is abductive; it starts from the data, rather than from a theory (Blaikie, 2007). Abduction is sometimes referred to as a “fruitful guess” (Fann, 1970, p. 35) as it is “very little hampered by logical rules” (Peirce, as cited in Reichertz, 2009) and therefore encourages creative insight and innovation (Bryant & Charmaz, 2007, p. 216).

My approach to this research is deeply and fundamentally constructionist. The Research Questions demonstrate the desire to understand the perspective, understanding and practices of the participants (RQ₁ to RQ₃). My recognition of the importance of the materiality of boardgames (RQ₄) arose from the data – primarily from the lengthy semi-structured interviews of Study 2, in which the participants described their experience of and engagement with boardgaming – and from the insights that they offered into the importance of those material interactions. These findings connect to earlier research, particularly that of Woods (2012), however it is the meanings that my participants place on their boardgaming hobby, rather than connection to prior research, that is the object of study. In the tradition of HCI research, this thesis is concerned with understanding the users within the situation of use; it seeks to explore the participants’ own meaning-making activities and their lived experience.

Maréchal (2010, p. 224) notes the following methodological issues for constructionist or constructivist researchers:

the problematic status of empirical data and delimitation of phenomena; the problematic status of the researcher resulting from subject-object interdependency or inbetweenness; methodological relativism; the emergence and contingency of research design; and the problematic ethics of results evaluation.

These issues are addressed in this chapter through discussion of my use of observation and thematic coding in identifying and analysing data, through reflexivity around my own role and embeddedness not only in the research but in the communities whose

habits and opinions I have studied. I describe the use of specific techniques to distance myself from the data being generated. I discuss the evolution of my research objectives and design through three distinct phases of data generation and describe ethical issues that I identified during those stages. Following Richards and Morse (2013, pp. 119, 122), I consciously use the term “data generation” rather than “data collection” to highlight my active role as the researcher in negotiating, creating, interpreting and analysing the data.

3.3.3. Theoretical framework and methodology

A constructionist epistemology implies an interpretivist research paradigm, requiring “an understanding of the social world” of the participant (Blaikie, 2007, p. 124) and methods that are qualitative (Coghlan & Brydon-Miller, 2014), local and specific (Guba & Lincoln, 2011, p. 165). It should provide “uncritical exploration of cultural meaning” (Crotty, 1998, p. 60) and create “informed and sophisticated reconstructions” and “vicarious experience” (Guba & Lincoln, 2011, p. 170). It requires us to take the viewpoint of the actor seriously; events and situations are studied from the perspective of the studied individual or group (Crotty, 1998, p. 75). Its validity rests on “factual accuracy” and the relationship between the findings and the data (Lankoski & Björk, 2015b, p. 2). Therefore, in evaluating the quality of constructionist work, “[t]rustworthiness and authenticity,” rather than statistics and data, are the criteria by which the quality this type of research should be measured (Guba & Lincoln, 2011, p. 170).

Below, I introduce four theoretical frameworks which align with the constructionist epistemology and which have informed my research. The discussion of these frameworks highlights their similarities as well as the ways in which they differ. More importantly, it demonstrates the ways in which each of them has informed and influenced my own theoretical framework and positioning as a researcher, and how each contributes to my understanding and use of data in response to the Research Questions. Although this work embraces a symbolic interactionist philosophy, my approach to understanding lived experience and my methodological stance reflects ethnographic concerns. I draw on rich methods of description from ethnomethodology and IPA, exploring situations in close detail to reveal processes, activities and shared understandings, and reflexively examining my role as a researcher. Lastly, from the

work of ethnomethodology, I draw perspectives on the situatedness of experience and cognition.

3.3.3.1. Symbolic interactionism

Symbolic interactionism sees the world through a lens of “negotiated order,” whereby “societal arrangements and procedures are considered to be constantly reworked ... there is an ongoing, albeit often tacit, process of negotiation and adjustment of action” (Crotty, 1998, p. 77). It is a pragmatist philosophy (Denzin, 2004, pp. 81, 84; Plummer, 2000) which came from the Chicago School of Sociology and is particularly associated with the work of Blumer (Blumer, 1969, 1986). It underpins Social Worlds Theory (Clarke & Star, 2008; Unruh, 1979) which describes how individuals move within and between social groupings – a fundamental concern for this research. Symbolic Interactionism is considered particularly suited to qualitative research as “a diversified and enriching matrix.” (Crotty, 1998, p. 78). It perceives the world as “peaceable and certainly growthful ... a world of intersubjectivity, interaction, community and communication” (Crotty, 1998, p. 63); it allows space for multiple perspectives and approaches (Denzin, 2004, p. 84).

Symbolic interactionism is traditionally considered to be defined by three core elements articulated by Blumer (1969, p. 2); (See, for example, Crotty, 1998, p. 72; Denzin, 2004): “Human beings act towards things on the basis of the meanings that these things have for them”; “The meaning of things is derived from, and arises out of, the social interactions that one has with one’s fellows”; and “These meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters”. An alternate perspective (D. A. Snow, 2001, p. 368) proposes four “orienting principles” for the framework. These unpack Blumer’s core elements:

- *The principle of interactive determination* requires that the researcher consider the interactions to which an artefact is exposed;
- *The principle of symbolization* attends to the processes through which events and artefacts take on particular meanings;
- *The principle of emergence* considers the potential for change in social life, meanings, and feelings; and

- *The principle of human agency* is concerned with “the active, willful [sic] character of human actors” (D. A. Snow, 2001, p. 373).

These four principles reflect and enlarge on the ideas that underlie Blumer’s core elements: the principle of interactive determination, for example, recognises that meaning arises from (among other things) “the social interactions that one has with one’s fellows” (Blumer, 1969, p. 2), and the principle of symbolization reflects Blumer’s third element. Emergence is reflected in Blumer’s second and third statements, and the principle of human agency arguably straddles the three core elements. These orienting principles provide a clear statement of the foundations of symbolic interactionism which I will use to demonstrate the alignment of my research to this framework.

Symbolic interactionism provides the primary framework for this research. Its focus on understanding the negotiated order in a situation aligns with my Research Questions, which seek to make sense of how hobbyist boardgamers understand their hobby as well as how they engage with it and how those practices may be transformed or extended through digitisation or through the game’s materiality. As a productive approach for qualitative research (Crotty, 1998, p. 98), it is congruent with the constructionist, interpretivist, perspective idealist approach that I have outlined above. Moreover, as I will demonstrate, the four orienting principles of symbolic interactionist research clearly relate to the diverse research methods that I have adopted.

3.3.3.2. Ethnography and ethnographic methods

Ethnography is a qualitative method and framework that aligns closely with symbolic interactionism because of its focus on the activities and meaning-making of a group of people (Crotty, 1998, pp. 74-78; D. A. Snow, 2001). It is constructionist: it sees meanings emerging from the particular situations and interactions of a particular group of people (Crotty, 1998, p. 48). Concerned with the study of a cultural group in its natural environment, it “evolves contextually in response to the lived realities encountered in the field setting” (LeCompte & Schensul, 1999, as cited in Creswell, 2003). More specifically, it is “an approach to understanding cultural life that is founded not on witnessing but on participation, with the goal of understanding not

simply what people are doing, but how they experience what they do.” (Dourish, 2014, p. 1). Founded in anthropology, ethnography’s methods and approaches have been extended to study a variety of subcultures, organisations, and even digital communities (Murthy, 2008). Ethnography is a useful research approach in HCI, because it allows the researcher to focus closely on a particular behaviour – to shift focus from technology to experience (Dourish, 2014, p. 2).

Strathern (2003, as cited in Dourish, 2014, p. 2) describes ethnography – and qualitative data generation in general – as “the deliberate attempt to generate more data than the investigator is aware of at the time of collection”. Ethnography is focused on discovery – of causal relationships and of the meanings embedded in situations and behaviours – rather than on testing whether such elements are repeated elsewhere (Hammersley, Gomm, & Foster, 2009, p. 236). Its focus is on “participation and engagement ... [it] revels in particulars” (Dourish, 2014, p. 12). It is only by re-visiting and re-interrogating the data in an iterative process that rich qualitative themes emerge. This is discussed further in Section 3.5.2 below.

Although this work does not follow formal ethnographic methods (Richards & Morse, 2013, pp. 54-61), it is informed by the tenets and approach of ethnography in that it seeks to understand the lived cultural experience of hobbyist boardgamers and to provide a rich description of their experience, with “rigorous attention to detail” (Randall, Harper, & Rouncefield, 2007). In this way, it approaches what is sometimes called focused ethnography, which refers to the study of subcultures where participants are not themselves part of a cohesive social group; the focus is “on their common behaviours and experiences resulting from their shared features” (Richards & Morse, 2013, p. 59). This aligns particularly with the symbolic interactionist principles of symbolization and emergence (D. A. Snow, 2001, p. 373). My methodological stance combines that of an “empathetic observer” – someone who can understand and empathise with the respondents’ position – with that of a “faithful reporter”, who allows the participants as much as possible to “speak for themselves” (Blaikie, 2009, p. 51). This respects the importance of the participants’ views as well as the integrity of the co-created data.

3.3.3.3. Ethnomethodology

Like ethnography, Ethnomethodology has roots in sociological analysis. Unlike sociology, however, ethnomethodology is concerned with the detail and specific circumstances of a setting (Rawls, 2008, p. 705). It understands social order as “a continuous process by which members [of society] create or adapt norms and use them in their activities together” (Blaikie, 2009, p. 100) and is concerned with the act of maintaining social order. As a theoretical framework, it has been used in both HCI and CSCW (Marcon & Gopal, 2003, p. 1). *Ethnomethodological indifference* is a key concept for its adherents, requiring independence from theoretical policies and methods (Garfinkel, 1996, p. 8) as the focus of evaluation is on what is seen as a “self-generating order” (Maynard & Clayman, 1991, p. 387). Ethnomethodological studies may involve what are termed “breaching experiments” (Blaikie, 2009, p. 101) which test assumptions by “disrupting the taken for granted identities, sensibilities, and interactional routines in familiar settings” (Lynch & Peyrot, 1992, p. 113). They require “phenomenological sensibility” (Maynard & Clayman, 1991, p. 388). Ethnomethodology focuses on the meaning of objects and actions, and how they are used by people to make sense of the world (Marcon & Gopal, 2003, p. 2) – but it is concerned more with the ‘how’ – the processes – than with the outcomes.

Ethnomethodology and symbolic interactionism share a constructionist orientation and a preference for qualitative methods (Dennis, 2011, p. 349). Close focus on the viewpoints of the research participants is a core feature of ethnomethodological work (Marcon & Gopal, 2003, p. 1). They differ primarily in their understanding and construction of meaning. Whereas in symbolic interactionism, meaning is “a product of social interaction [that] requires active interpretation to be acted on” (Dennis, 2011, p. 350), meaning itself is relevant in ethnomethodology principally where it is problematised in some way, for example through a breach (Dennis, 2011, p. 351). Although several of the ideas and theories that I reference in analysis (including distributed cognition and theories of situated action) are closely linked to ethnomethodology, this work is not itself ethnomethodological. It is the ways in which meaning is constructed – the processes – that are of interest to ethnomethodology, rather than the meanings themselves (Bergmann, 2004). Nevertheless, this thesis is informed by both the theories and the methods of ethnomethodology. In particular, I

have drawn inspiration from its deep commitment to detailed description and understanding of a setting.

3.3.3.4. Interpretative Phenomenological Analysis

Just as this research is neither strictly ethnographic nor formally ethnomethodological, neither is it phenomenological. Nevertheless, like ethnomethodology, it requires a “phenomenological sensibility” to understand both the concerns and orientation of the studied group and to interpret and analyse them for a non-serious-leisure audience.

Developed for use in psychology, Interpretive Phenomenological Analysis (IPA) builds on earlier work in phenomenology and hermeneutics to consider “the detailed examination of individual lived experience and how individuals make sense of that experience” (Eatough & Smith, 2008). Like ethnomethodology, IPA seeks to understand “how participants are making sense of their personal and social world” (J. A. Smith & Osborn, 2009, p. 54). Whereas ethnomethodology seeks to understand how individuals work together to create a system of social order, IPA’s focus remains on the individual. Like phenomenology (Hitzler & Eberle, 2004), it is concerned with the study of human existence, as well as the hermeneutics of the ways in which we interpret the world. IPA seeks to “explore/understand/make sense of the subjective meanings of events/experiences/states of the individual participants themselves” (J. A. Smith & Osborn, 2004, p. 230). Its methods include single case studies, where the focus is on the depth and quality of analysis of the specific case, rather than on generalisability or transferability. It is closely linked to constructionism and to symbolic interactionism, and requires the researcher to adopt an “insider perspective” (Dunworth, 2008).

Although this research does not adopt the perspectives of IPA, it shares a concern with the particular – with the detail of participants’ experience, sometimes described as an “idiographic commitment” (Storey, 2007). Like the research I describe in this thesis, IPA studies typically have small sample sizes (Eatough & Smith, 2008; J. A. Smith & Osborn, 2004, p. 230) and are concerned with rich description of data rather than with theory development (Dunworth, 2008). A key distinction between IPA and thematic analysis (see 3.5.2) is IPA’s overt consideration of the researcher’s

reaction to the generated data, and how this may influence analysis, rather than simply of what is said or of the participant's perspective (Storey, 2007). This goes beyond the level of reflexivity in other qualitative approaches (see Section 3.7).

IPA is primarily used in health sciences, particularly psychology, however it has also been applied in HCI (McCarthy & Wright, 2005; Ní Chonchúir & McCarthy, 2008; Stienstra, Marti, & Tittarelli, 2013). Several phenomenology-based approaches are applied in game studies (See, for example, Conway & Trevillian, 2015; Jørgensen, 2012; Keogh, 2018). The influence of IPA on this thesis is seen in the close attention to individual experience. Like ethnomethodology, IPA has informed the close attention that I pay to describing and understanding the detail of a participant's experience.

3.4. Data Generation Methods

In this section, I describe the methods with which I generated data for this research, situating them within a broader qualitative and constructionist research framework. In later sections, I will describe data analysis methods, and show how I used these specific methods in my research program.

Broadly, the methods for each of the three studies that comprise this research are qualitative. Moreover, they are informed by the ontology, epistemology and theoretical framework that I outlined above. They focus on participants' actions, experiences and stories. Through this research, I seek to understand the lived cultural experience of serious leisure (Stebbins, 2012, 2015a) hobbyist boardgamers – “the people who play games” (Lankoski & Björk, 2015a, p. 3) – and to provide a rich description of their experience, with “rigorous attention to detail” (Randall et al., 2007). Interviews and observational data – which I include under the broad umbrella of ethnographic methods – provide the framework for exploration of the importance of key themes – particularly materiality – within the data.

3.4.1. Artefact review

My use of artefact review as a method stems from my interest in the games themselves – the material objects at the heart of the boardgaming hobby. Artefacts are material, designed, and used. In other words, they leave traces in the world, they

embody a set of “knowledge, skills, and assumptions,” and they are significant not only in what they *can* do but in their interactions and dispositions (Dix et al., 2003; Rogers, Sharp, & Preece, 2011, p. 307). Artefacts are used to coordinate work, but they also dictate the forms that work may take (Woolgar, 1990) and may create use-histories which capture a record of the way that they have been used to date (Hollan et al., 2000, p. 187; E. L. Hutchins, 1995b).

Artefact review is used in HCI research where the artefact itself provides the context for analysis (Dix et al., 2003). It is constructionist in that it is particular to the studied artefact and the interactions that people (including the researcher) have with it; another person or researcher’s experience might be different (Crotty, 1998, p. 48). Like case studies, artefact review “attends to the idiosyncratic more than to the pervasive” (Robert E. Stake, 2009, p. 24); it is concerned with the specifics of a situation, object, or case. Thus, it can be seen as a highly specific form of case study research, seeking to understand not “a social situation or process” (Richards & Morse, 2013, p. 76) but a digital, physical, hybrid or abstract artefact. Sometimes, the studied artefacts have been designed or deployed by the researchers (Siek, Hayes, Newman, & Tang, 2014; Vetere et al., 2005), but there is also interest in studying artefacts that already exist in the world (Davis et al., 2014). HCI is concerned with understanding how people interact with both digital (Ducheneaut, Yee, Nickell, & Moore, 2006; Mavoa, Carter, & Gibbs, 2017) and non-digital artefacts (Ayobi et al., 2018; Norman, 2013), as well as with hybrids that combine digital and non-digital activity (Buruk, Özbeyli, & Özcan, 2017; Vetere, Davis, Gibbs, Francis, & Howard, 2006) and with abstract artefacts, such as a ruleset (Rogers et al., 2011, p. 307). It studies the relationship between “the things users characteristically want to do and need to do” and the artefacts which they use to achieve them (Carroll & Rosson, 1992), aligning with symbolic interactionism’s “principle of interactive determination” in considering both the artefacts and the interactions to which they are exposed (D. A. Snow, 2001, p. 368). When undertaken as part of a development cycle, it seeks to inform the future directions of that artefact. This recognises that use of artefacts is both situated (Suchman, 2007) and contextual. Artefact review is primarily a descriptive method, but it allows for interpretation through the analysis and description process.

As well as being used widely in HCI, artefact analysis is a core component of related disciplines and theoretical frameworks, including activity theory (Bertelsen & Bødker, 2003; Rogers et al., 2011, pp. 306-311) and Computer-Supported Collaborative Work (CSCW). Games User Research is positioned specifically as the study of video game artefacts – “an interdisciplinary field of practice and research concerned with ensuring the optimal quality of usability and user experience (UX) in video games” (Drachen, Mirza-Babaei, & Nacke, 2018, p. 1). In Game Studies, artefact analyses frequently focus on a particular game or games (Backe, 2015; Lucat, 2017; Schott, 2017) but may also examine a physical artefact, e.g. a game controller (Griffin, 2005; Jenson & De Castell, 2009; Keogh, 2018). Such concerns are also of interest to HCI (Ramcharitar & Teather, 2017; Rapp, 2018). In this thesis, I use artefact review to focus attention directly on games, principally informing RQ3.

3.4.2. Semi-structured interviews

I used interviews to generating information about participants’ involvement with the boardgaming hobby. Interviews are particularly well-suited for constructionist research, as they “allow participants to help direct the flow of the conversation, constructing the interview’s narrative together with the researcher” and allow researchers to explore “more specific phenomena” than more generalizable work enables (Cote & Raz, 2015, pp. 94,95). Interviews provide a “semi-natural setting” for research (Blaikie, 2009, p. 166), giving participants an opportunity to report on, describe and even explain their own behaviour.

Semi-structured interviews encourage participants to take the lead in the conversation and to explore a broad range of topics. They provide balance between a data-driven structured approach which provides consistency and a completely unstructured setting where the researcher listens with minimal interruption to the participant (Richards & Morse, 2013, p. 126). The naturalistic, conversation-like setting encourages the participant to raise new material and topics that were not foreseen in the initial interview design, essentially co-constructing the conversation in tandem with the researcher (Guba & Lincoln, 2011). Moreover, conversational-style interviews allow the researcher to explore a participant’s viewpoint in depth and to build rapport with participants (Cote & Raz, 2015, p. 94). In symbolic interactionist research, interviews primarily reflect the principle of human agency but also, through their

exploration of participants' meaning-making and of their changing circumstances, the principles of symbolization and of emergence (D. A. Snow, 2001, p. 368).

Interviews are widely used across a range of social research settings (Schensul, Schensul, & LeCompte, 1999; Seale, Charteris-Black, MacFarlane, & McPherson, 2010). They are used at different stages of the research process: to inform a design (Hicks & Gerling, 2015), to gain information about a group of users (Carrasco et al., 2018), to gain feedback as a result of a field study, usability study or play session (Bromley, 2018), or to learn about a particular practice (Beyer & Holtzblatt, 1995). In Games User Research, they are seen as a tool “to understand players’ motivations, their understanding of mechanics or features in the game, and why players act in weird ways!” (Bromley, 2018, p. 163); in game studies, they are typically used to engage with specific groups such as game developers (Paavilainen, 2016) or to elicit information from players (Hullett, Kurniawan, & Wardrip-Fruin, 2009; Stuckey, Swalwell, & Ndalianis, 2013). Sometimes interviews may be the only way to elicit information, as is the case with “bad” or unreleased games (Navarro-Remesal, 2017) or when researchers wish to study experiences that occurred in the past (Stuckey, Richardson, Swalwell, & de Vries, 2015). The interview data in this thesis explores how hobbyist boardgamers describe and define their hobby, as well as the practices which they report as part of that participation. It focuses on the “gamer” but also offers perspectives on games and on gaming.

3.4.3. Participant Observation

Participant observation allows a researcher to understand an activity through close attention to participants' practices. The degree to which the researcher observes rather than participants can vary from complete (passive) observer to complete participant (Richards & Morse, 2013, p. 55; Rogers et al., 2011, p. 251), as can the visibility or obtrusiveness of the observation (Richards & Morse, 2013, pp. 129-130). In this research, I use remote (passive) participant observation as a tool for understanding the experience of play. The method offers “direct and objective insights” into participants' actions and behaviours (Sangin, 2018, p. 175). Described as “the qualitative method *par excellence*” (Blaikie, 2009, p. 206), participant observation is useful for answering observational and descriptive questions, for understanding an experience, and for focusing attention on a particular practice or activity (Richards &

Morse, 2013, p. 30). It can assist the researcher to “understand the users’ context, tasks and goals” (Rogers et al., 2011, p. 247). In HCI, participant observation is frequently coupled with “Think aloud” techniques in an attempt to see “into the head” of the participants while they complete a particular task (Hoonhout, 2008, p. 66; Rogers et al., 2011, p. 256). In symbolic interactionist research, observing participants as they interact with artefacts informs understanding of all four orienting principles (D. A. Snow, 2001, p. 368).

Participant observation provides a primary source of data about the way that participants interact with a system or artefact. It is an established, well-understood method for gaining understanding of participants’ experience (Sangin, 2018, p. 178). Similarly, in Game Studies literature, there has been attention to the observed experience of the player (Conway & Trevillian, 2015; Pearce, 2006) and to spectatorship of play – the observed experience of observing play (Cumming, 2018; Karhulahti, 2016). Participant observation is an established technique in both disciplines and is firmly aligned with a constructionist viewpoint. In this thesis, I use participant observation to illuminate the experience of gaming, addressing RQ 4 to reveal the ways in which a game’s materiality supports its play.

3.4.4. Gaze tracking

Gaze is an accepted indicator of attention; additionally, it can reveal information about perception, saliency, and cognitive processes (Navalpakkam & Churchill, 2014, pp. 330-335). Wearable gaze tracking has been used to study a range of interactions in the physical world including detecting eye contact (Ye et al., 2012), flirting (Bee, André, & Tober, 2009), and monitoring driver vigilance (Ji & Yang, 2002). It enables rich and deep analysis both of individual interactions and of amalgamated data. Although gaze tracking has been widely used in screen-based interaction design research (Bergstrom & Schall, 2014; Agnieszka Bojko, 2005; Aga Bojko, 2013; Navalpakkam & Churchill, 2014; Nielsen & Pernice, 2010), the use of wearable gaze trackers to understand interactions in the physical world is a more recent development (Horning, Ohnstein, & Fritz, 2013; Mayberry, Hu, Marlin, Salthouse, & Ganesan, 2014; Park, Lee, & Choi, 2008; Segall, Taekman, Mark, Hobbs, & Wright, 2007). Other studies have used screen-based trackers in conjunction with on-screen representations of wider space (e.g. photographs) to study these reactions (Nordh & Østby, 2013).

Although gaze tracking is often used to generate objectivist, experimental data, in this thesis, I demonstrate its value as a qualitative method. I use it to supplement observation data, particularly in addressing RQ4. To the symbolic interactionist researcher, gaze informs understanding of the principles of interactive determination, symbolization and human agency (D. A. Snow, 2001, p. 368). Gaze data provides contextual information that can be used to inform richer and more nuanced qualitative analysis of studied events.

3.4.5. Online communities and forums

Posts in online communities and forums provide a searchable historical archive of conversations and discussions. They are a rich source of material for analysis, as well as an historical record of conversations and opinions preserved “in the now” (Seale et al., 2010, p. 56). Research using Internet posts has been described as a form of ethnography (Hine, 2000, p. 45) particularly appropriate to studying online activities or behaviours (Kozinets, p. 109) – observation of a field site situated not in another country but online. For the symbolic interactionist, this archive of posts allows the researcher to explore the emergence of ideas, mores and beliefs (D. A. Snow, 2001, p. 368).

Reviewing online posts is a fast and convenient way to access a broad range of opinions (Adair, Marcoux, Williams, & Reimer, 2006, p. 545), but researchers must recognise the inequalities that affect access to the Internet as well as willingness and ability to participate (Seale et al., 2010, p. 48). These posts reflect the opinions of a microcosm of Internet users which may not reflect the same demographics as the audience being studied (Adair et al., 2006, pp. 538-539). Moreover, there may be different communication norms in online forums as opposed to offline or face-to-face communication (Seale et al., 2010, p. 48)

Terveen, Riedl, Konstan, and Lampe (2014, p. 98) propose a hierarchy of levels of access to such online communities. At level 1, the researcher accesses basic usage data, including posts to the site. At level 2, they access the users, for example by posting surveys and polls to the site or by random assignment experiments such as A/B testing. At level 3, they have access to APIs and plug ins which facilitate deeper

empirical analysis, and at level 4 they can access the underlying software infrastructure of the site. Different levels of access enable different methods and facilitate different forms of analysis. Ethical issues may arise when older data is collected; it can, for example, be challenging to obtain informed consent from participants when older posts are retrieved (Seale et al., 2010, p. 53). I discuss these ethical issues further in Section 3.8.2.

In this thesis, I use posts from online communities to supplement other data, particularly where I have identified a particularly pithy or relevant post that sums up what I have observed, or what participants they tell me. In particular, I have used these posts as a tool for understanding the process and effects of digitising boardgames and as a reservoir of opinions and observations for analysis.

3.5. Data Analysis Methods

Having described the different methods and techniques used to generate data, I now turn attention to analysis. In this section, I describe my approach to coding and to analysis of those codes and outline the formal and informal methods that I have used or adapted for this research. These methods share an approach that is rooted in abduction (Reichertz, 2004).

3.5.1. Grounded Theory Method and Grounded Theorising

Grounded Theory Method (GTM) is an interpretivist method for data analysis, used widely in symbolic interactionist literature. Proposed by Glaser and Strauss (1967), GTM has proved particularly useful with broad, open research questions. It is an iterative process of data gathering, coding, analysis and theory building, which is repeated until the research space has been exhausted and there are “no further surprises” in the data (Muller, 2014, p. 38). Theoretical sampling gives GTM a “rigorous form of abductive inference” (Muller, 2014, p. 27) (see Section 3.3.2). To ensure appropriate rigor, the researcher inductively tests theories at their weakest, rather than at their strongest, points (Muller & Kogan, 2010, p. 7; Reichertz, 2009).

Data collection ends “when all of the categories appear to be adequate to explain all of the data” (Muller, 2014, p. 39), or at “the point in the research where

collecting additional data seems counterproductive” (Anselm Strauss & Corbin, 1998, p. 136): this is known as achieving theoretical saturation. The resultant theory is therefore “grounded in” the data: “[t]he thought-processes and procedures are focused on the data, and always return to the data” (Muller & Kogan, 2010, p. 2). As a tool for theory building, GTM allows for open exploration of a topic by accommodating complexity and is therefore “fitted to studying process and change” (Orlikowski, 1993, as cited in Bryant & Charmaz, 2007, pp. 341-342). In HCI, GTM has been used across a range of settings (A. Adams, Lunt, & Cairns, 2008, pp. 138-139).

My analysis is inspired by GTM – although this inspiration lies more in the referencing of GTM as “a kind of signal that [the researchers] coded their data carefully” (Muller, 2014, p. 41) and as a method of generating concepts for thematic analysis (Bryant & Charmaz, 2007, p. 347) than in a textbook implementation of a formal GTM Project (see, for example, Corbin & Strauss, 1990). This approach has been referred to as ‘grounded theorising’ (Hammersley, 2010, p. 156) or “grounded theory ‘lite’” (Braun & Clarke, 2006, p. 81).

3.5.2. Thematic analysis

Thematic analysis (TA) is “a foundational method for qualitative analysis” (Braun & Clarke, 2006, p. 78) which supports “identifying, analysis and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). It is useful for identifying commonalities across a corpus of data, for example, a set of interviews (Vaismoradi, Turunen, & Bondas, 2013, p. 400). TA frees researchers from the formal structure and commitment of a full GTM analysis (Braun & Clarke, 2006, p. 81). Although it has similarities to IPA, it is not committed to any particular theoretical framework. TA is widely used in constructionist research, but it can equally be used in positivist research (Braun & Clarke, 2006, p. 85).

A key question for TA is what constitutes a theme. Braun and Clarke (2006, p. 82) stress that a theme “captures something important about the data.” Themes are not developed quantitatively, for example by counting how often or on how many occasions a theme was raised, but rather should be understood and prioritised in the context of what they have to say about the overall research question. TA ensures that reporting is analytical rather than merely a summary of what was said (Storey, 2007).

Like ethnography, TA “revels in particulars” (Dourish, 2014, p. 12); it is specific to the research setting, and is enhanced by rich description of the data from which it is derived.

Braun and Clarke (2006, p. 87) provide a six-phase model for conducting a TA, as well as a 15-point checklist of criteria for good thematic analysis, covering transcription, coding, analysis, overall and the written report (Braun & Clarke, 2006, p. 96). This requires, for example, that there has been a thorough coding process, with coherent and distinctive themes, that the analysis tells a convincing story, and that the language and concepts used in the report are consistent with the epistemology of the report. Other accounts describe the ways in which themes may be “pieced together” from different sections of the data and discuss in more detail the need to relate identified themes to existing literature (Aronson, 1995).

TA has been used in both HCI (Iacovides, Jennett, Cornish-Trestrail, & Cox, 2013) and Game Studies (McLean & Griffiths, 2013). It is a flexible tool for analysing qualitative data that aligns well with the symbolic interactionist perspective and approach to meaning-making, allowing for recognition of multiple viewpoints and areas of interest.

3.5.3. Case-to-case synthesis

Case-to-case synthesis is an inductive, inferential technique for analysis of data (Yore & Rossman, 2010). This approach results in more generalisable analysis than a single case-study approach while still providing the richness of the underlying data. Unlike other forms of meta-analysis, which require comparability between studies, case-to-case synthesis allows for secondary analysis of generalised patterns in qualitative data (Rossman, Yore, Hand, & Shelley, 2009).

A case-to-case synthesis seeks to align data from several case studies, providing an analysis across cases rather than within a particular case. Like the meta-ethnography proposed by Noblit and Hare (1988), case-to-case synthesis allows for the alignment of different interpretivist literature and findings. It allows for analysis of data from multiple sources or of data that has been generated independently, by analysing themes that recur across the data (Rossman et al., 2009). The method has

been used in disciplines including education and soil science (Celardin, 1996; Tippet, 2011), but I have not found examples of its use in either HCI or Game Studies.

3.6. Study design

This research unfolded through three distinct research activities. In Section 3.2, I demonstrated how these have informed the Research Questions. In this section, I will describe each of the activities and demonstrate its alignment with a qualitative, constructionist research approach and with a symbolic interactionist theoretical framework.

For Study 1, I conducted an artefact review of three popular boardgames. This was case study research, analysed through case to case synthesis. The method for this research is described in Section 3.6.1 of this chapter. Following this, for Study 2, I conducted a series of in-depth, semi-structured interviews with hobbyist boardgamers, using thematic analysis to analyse these. A fuller description of this study is in Section 3.6.2. Lastly, for Study 3, I invited hobbyist boardgamers into a research lab to play boardgames, so that I could observe the play experience. This provided a wealth of eye tracking and observational data, which were analysed using thematic analysis and through a novel hybrid method which is described below, in Section 3.6.3.

These three studies complemented one another, providing different perspectives on materiality: the artefact review provided context for the research, the interviews provided the essential participant perspective, and the game session observation allowed me to focus on actual practices. This research stands alone as a snapshot of the hobbyist gamer experience and also provides a foundation for future research into the materiality of boardgames, informed by a thorough understanding of their play experience in their traditional – cardboard and wood – medium.

3.6.1. Study 1

For my first study, I conducted an artefact review of three popular boardgames which have been digitised in at least one form. This was an exploratory study, which sought to understand how digitisation affected the play of popular boardgames.

After selecting the three games and digital implementations which serve as the study's focus (see Appendix D), I conducted a case study of each game. In each case study, I noted key elements of gameplay, as well as the theme and the history of the boardgame – when it was released, as well as its critical reception – and characteristics of the digital games. I re-played each game, with the exception of X-Box *Puerto Rico* which I was unable to access. I also conducted a brief review of web forum posts relating to the digitised game. This review used purposive sampling (Adair et al., 2006, p. 542; Battaglia, 2011) with level 1 access to posts (see Section 3.4.5). I did not initiate any discussions for the purpose of the study, but rather reviewed existing posts in online communities and web forums, with the aim of identifying interesting comments and opinions rather than of conducting a representative or systematic review. The method for this study thus comprised these three individual case studies followed by a case-to-case synthesis which identified three primary themes across the case studies. The output of this study was the paper included as Chapter 4.

This work aligns clearly with the symbolic interactionist viewpoint. It considers the interactions to which the boardgame is exposed in its physical and digital forms, it describes the processes which imbue elements of the game with meanings, it discusses how digitisation leads to change not only in the game itself but in the players' relationships with the game, and it identifies the choices made by players and developers. The study focused on RQ3, examining how digitisation affects hobbyist boardgamers' practices of engaging with their hobby.

3.6.2. Study 2

The second key study of this research was a series of eleven semi-structured interviews with serious leisure hobbyist boardgamers. These interviews aimed to understand the importance of boardgames in the lives of serious hobbyist boardgamers, and the ways in which they engage with and value them. To analyse interview data, I used an iterative process of thematic coding derived from thematic analysis (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006; Muller, 2014, p. 37) to determine key themes and issues.

Outputs of this study included here are Chapters 6 and 7. The latter, an exploration of the impacts of parenthood on a boardgamer's hobby participation, is an

example of unexpected results identified during the thematic coding process; participants consistently discussed parenthood, although it was not a topic that I had anticipated would feature so prominently in the interviews. Additional outputs of this study included conference presentations which are listed in appendix B, as well as Chapter 5 which provides a bridge between this study and Study 3.

Like Study 1, this work aligns strongly with the symbolic interactionist viewpoint (see Section 3.3.3.1). It considers the interactions of play; it explores the meanings that games and gaming hold in the lives of the participants; it discusses the way that the centrality of gaming in participants' lives changes over time; and it is directly concerned with the choices and values of boardgame hobbyists.

In Appendix E, I describe methods for participant selection and recruitment, interview format and protocols, and issues surrounding reporting of the data, including anonymisation and the use of pseudonyms.

3.6.3. Study 3

Many contemporary games are too big to be described as a whole. For many purposes, first one needs to find a part of the game or parts of games that are analyzed. (Lankoski & Björk, 2015a, p. 28)

Although Lankoski and Björk are writing primarily about videogames here, this statement nevertheless holds true. There are myriad different aspects of games that can be studied. My third study used participant observation and eye tracking to observe the interactions that occur during gameplay. It explored the ways in which the game's materiality is used by the players as a tool for planning and as a tool for tracking and understanding the gameplay. The primary output of this study is Chapter 8; I have also published information about the novel gaze tracking method that I developed for the study (see Section 3.4.4) at a symposium on games research methods as well as at the CHI PLAY conference on player-computer interaction. I provide more detail about the methods for this study in Appendix F and Appendix G.

This study moved attention to RQ4, examining the ways in which players use and manipulate the materiality of the game during play. Like Studies 2 and 3, this work is situated in the symbolic interactionist tradition (Blumer, 1969; Plummer, 2000; D. A.

Snow, 2001). It describes the interactions between players and artefacts as well as between players; it explores the symbolism of the artefacts and the ways in which they are used as representations; it investigates the ways in which the gameplay and artefacts may change over time; and it calls attention to the choices and decisions made by the players during the play.

3.6.4. Challenges

There were significant challenges both in designing and in implementing this research. One limitation of this work relates to sample size. In Study 2, the gamers interviewed were all long-time hobbyist boardgamers, representative of the people who have built and fostered the boardgaming hobby over many years. There has, however, been significant growth in the hobby in the 18-35 age group (Graham, 2016), even since I conducted the interviews in 2015. Anecdotally, these newer players appear to be driven by the broad availability of games on crowdfunding platforms like Kickstarter, as well as by the social play that they afford, and may be coming to boardgames after playing (and continuing to play) digital games. This group are missing in my interviews. It would be interesting to consider whether they describe the hobby in similar ways to the longer-term participants, how they enact that, and how they feel about the games being offered on digital platforms. Research on MMO games has pointed to changes in participants' gaming preferences over time – “age, preferences, play motive, play style, identification as a gamer, and player experience shift away from a focus on performance and towards a focus on completion, choice, and enjoyment” (Max V. Birk et al., 2017, p. 157) which would also be a fruitful avenue of investigation. This study serves, therefore, as a presentation of the serious leisure hobbyist boardgamer, but does not pretend to capture the breadth of different styles of engagement with boardgamers even amongst those who self-identify as gamers.

This research illuminates certain practices of hobbyist boardgamers (see, for example, Chapters 5, 6, 7, and 8), but does not claim to be an exhaustive survey of all the ways in which people talk about or play boardgames. Rather, it is a snapshot of elements of the hobbyist boardgaming experience, drawn out through detailed interviews and observation, supported by analysis which draws on my own experience of hobbyist boardgaming.

3.7. The researcher's role in the study

"One cannot enter into an online game or virtual world without joining in the performance." (Pearce (2009), as quoted in Hjorth, 2011, p. 60). As a researcher of games and of play, it is essential to be a participant, but it is not sufficient to be a participant. The researcher must also reflect on their participation and on how it has influenced their research (A. M. L. Brown, 2015; Coghlan & Brydon-Miller, 2014). Researchers must take care to "[p]rovide descriptions of the researchers' background, interests, etc. to reveal potential biases to the readers." (Crotty, 1998; Lankoski & Björk, 2015a, p. 27). The researcher's relationship to the problem or community being studied may be that of an outsider or insider, and of an expert or learner (Blaikie, 2007, pp. 11-12). These roles are defined not by the researcher's relationship to the community under study but by their position with regard to the data that are the subject of the study. The researcher-observer necessarily takes an outsider role, the researcher-participant is the insider.

Recognising that I am myself one of the hobbyist boardgamers that are of interest to this study, it is important to reflect on how my own experience of serious leisure boardgaming has influenced both my understanding of the data I have generated and the data itself. In this research, I have attempted to separate myself from the data, to take the role of the outsider-expert rather than of insider-participant. This is not the ethnographer's approach of joining a community as a means to study it (Dourish, 2014; Richards & Morse, 2013, p. 54); this is studying a community from an established position within it. My connection to the hobbyist boardgaming community enables, informs and complicates my position as researcher. But despite this connection, this is not an autoethnography. It is not the history of my own engagement with games but is rather the stories of the people I interviewed and observed. At times, their experience of boardgaming parallels my own; at others, our experiences diverge. The stories here are theirs, not my own, although my understanding of them is necessarily shaped by my own experience and participation. In this section, I will reflect on recruitment, data generation, and analysis, and consider the way that each has been influenced by my own embeddedness within the serious leisure boardgaming community.

3.7.1. Recruitment

Being established within the hobbyist boardgaming community has given me access to hobbyist boardgamers to participate in interviews and game sessions. It lent my work a sense of credibility and reliability within that community (see Bonner & Tolhurst, 2002, pp. 8-9) and reassured participants that I was not a “seagull’ ... who flies into a community [and] craps all over everything then leaves the community to tidy up the mess.” (Drew, 2006, p. 40). I conducted snowball recruitment (Atkinson & Flint, 2001) for these studies through posting to BoardGameGeek and social media, at local gaming events, and at local game stores, all environments where I was already known.

The problem with insider research is that it can easily become “Research with Friends”. “When one is already, at some level, an insider in their field, it is probable that they have pre-established friendships—often close friendships—in that field and it is also probable that such close friendships will shape the researcher’s work and influence their positioning within the field.” (J. Taylor, 2011, p. 8). Several interview participants referred to this shared history, although often obliquely through a perceived connection to my family rather than directly to me. For example, one participant described playing *Ascension* with my husband and elder daughter, and another referred to having met my husband at a gaming event. Another participant described his desire to “visit Melbourne”. This personal knowledge and sense of connection appears common amongst hobbyist boardgamers and forms an important element of my academic and lived understanding of what it is to be a hobbyist boardgamer.

3.7.2. Data generation

In data generation, this closeness to my topic enhanced the conversational feel of interviews in Study 2. It allowed participants to use forms of shorthand language or jargon when describing their engagement with the hobby or with a particular game, with a reasonable expectation that I would understand what they meant. Discussing gameplay, Diana commented that, “I find people that play the 18xx games, you know, they have this little co-op mentality, oh, we don’t block each other, well that just totally changes the game.” She assumed that not only would I understand the meaning of ‘18xx game’, ‘co-op mentality’, and ‘blocking’ but that I would understand how the

combination of those factors ‘totally changes the game’. Oliver and Mike also mentioned 18xx games: “my third favourite game is 2038, which is an 18xx style game, but set in the future, so getting to be less and less in the future every year.” (Mike).

I asked Mike to explain what he meant by ‘18xx games’. His answer illustrates the importance of unpacking the use of jargon, demonstrating the complex and lengthy meanings that may be hidden in a deceptively short expression. I include it here in full, to demonstrate my concern with the reality and richness of the data.

It would be about 40 years ago now, a gentleman in England, Francis Tresham, came up with a game called 1829. 1829 was a game that modelled the development of the rail lines in the UK, and the really brilliant piece of this was, rather than having the players take turns doing things, the players would buy stock in companies and the companies would be the ones that were actually doing the development and trying to earn money and players would get their money, with which they could buy stock, from the dividends which were paid by the company. And that basic idea was then redeveloped into the game 1830 and has since been developed into literally hundreds of different games, all with the same - with many of the same premises, many of the same rules, but their own twist, their own - so they’ll have different geographies, but the different geographies don’t tend to be as important as the specifics of the rules for a particular game. And one of the things that I’ve always been impressed by is, Tresham later developed some additional games in the series, and one that he developed is a game called 1829 *mainline*, in which he set out to break essentially every rule that he had set for the system. And so you have typically, there are strict limits on how much track can be built. He eliminated that. Typically, there are - in these games, trains only operate for a certain amount of time and then they rust. He eliminated that. Typically, you can’t sell a train back once you’ve bought it. He eliminated that. And so, he went through all of these different base assumptions for the system and broke all of them, which is always impressive to see done in an interesting way. So anyway, there are a lot of different games that fall into this system, there are different games that come close to this system, but in general, 18xx tends to refer to games derived whether directly or much less directly from Tresham’s original 1829.

Whether or not such explanations succeed in their aim of explaining 18xx games to a “Friend or Neighbour that doesn’t play games,” they were valuable to me in confirming that Mike and I share a common understanding of 18xx games, effectively introducing a form of triangulation into the data analysis process. Moreover, to participants, they stressed the importance of their own understanding, emphasising that it was their experience rather than mine that was of interest for this research. This

borrows from the HCI practice of contextual inquiry, which allows the researcher to be an “apprentice” to the expert informant (Beyer & Holtzblatt, 1995). It is consistent with the ethnographic stance where the researcher presents themselves as a learner “so that people in the community feel comfortable teaching them” (LeCompte & Schensul, 2015). To the reader, these examples demonstrate the richness of meaning that a shorthand expression like “18xx games” can convey.

Throughout Study 2’s interviews, participants referenced this shared body of knowledge and expected that I would understand the terms and references that they used. But there are risks associated with overreliance on shared knowledge. The researcher “may find it difficult to ‘see’ the beliefs, values, practices, and behaviours embedded in everyday life.” (Richards & Morse, 2013, p. 56), and may therefore need to construct and manage artificial boundaries between themselves and their participants (A. M. L. Brown, 2015, pp. 83-84) both for self-protection and to avoid a perception of interfering with research outcomes. “Thus, the ethnographer’s task ... is to reassure informants continually that researchers really are learners, interested in minute details of history, behavior, and belief” (LeCompte & Schensul, 2015). I was careful to assume a level of distance from participants, distancing myself from interview participants’ experience in Study 2 by asking them to explain critical terms or expressions as they would to a non-gaming friend or neighbour, and maintaining physical distance in Study 3 by not joining in the game sessions and observing from another room.

3.7.3. Data analysis

My closeness to the subject matter enriches the description of activity, as it enabled me to understand and describe the Study 3 boardgaming sessions in rich detail. As a hobbyist boardgamer myself, I can identify patterns and behaviours that might elude a non-gamer, understanding concepts and interpreting data not only through what is said but also through what is done. For example, in the *Concordia* session, I understood the effect of the players’ customisation of the layout of their player boards; in the example above, I identified that “18xx games” was a shorthand expression for a complex and interesting concept.

In analysis and discussion, the perspective of my supervisors as non-members of the serious leisure community was particularly valuable. Discussions with them

served as a form of triangulation to validate my analysis (Flick, 2004) and as a sounding board to ensure that the concepts and observations I expressed would be understood and seen to have validity even outside the hobbyist community.

3.8. Ethics

Both of my later studies – the interviews and the observations – were reviewed through and approved by the University of Melbourne’s Human Ethics Advisory Group. In considering research ethics, I was guided initially by the three pillars of the Belmont report: respect for persons, beneficence, and justice (Belmont, 1979). The User Experience Professionals’ Association (UXPA) Code of Professional Conduct elaborates on this within an HCI setting; the Australian Computer Society’s Code of Professional Conduct provides a local perspective.

Each of these identifies respect for persons as an essential component of professional and research ethics. In this research program, I addressed this through rich and respectful treatment of participants’ stories and experiences at the point of data generation as well as at each subsequent point throughout analysis and dissemination. In this section, I consider two key ethical considerations that have underscored this research: participant anonymity, and digital methods. I reflect further on ethical considerations in Chapter 9.

3.8.1. Anonymity of participants (Studies 2 & 3)

The University of Melbourne’s Human Ethics Advisory Group (HEAG) is the gatekeeper for research involving human subjects. Its gatekeeping process performs an important function in validating research approaches and ensuring that research activity is justified and appropriate, however I experienced conflict between the HEAG’s requirements and the wishes of my participants. The HEAG placed high importance on participant anonymity, requiring it as a condition of approving my research, but several of my interview participants (Study 2) wanted to be acknowledged as the authors of their ideas and experience (Crow & Wiles, 2008, p. 1). One participant asked whether he could put a transcript of our interview on his personal blog.

It has been acknowledged that “it is important for the ethical researcher to rethink power relations between researchers and participants, and offer participants more voice ... Subjects may wish to be named in written accounts.” (Bruckman, 2014, p. 457; see also Markham & Buchanan, 2012). Thomas and Hodges (2010, pp. 95-96) note that well-known or high-profile participants may be willing to be identified by name in research outputs. In response to these and other concerns, Kaiser (2009) proposes a three-tier post-interview consent model which allows participants to request specific treatment of their data from full disclosure to changing details to obscure identity. This recognises that a pseudonym alone may be insufficient protection against possible identification, particularly in small, well-connected community groups (Damianakis & Woodford, 2012, p. 709). Even with the anonymity provided by pseudonyms, it is possible that some of my research participants – particularly those in Australia – will be identifiable. I have further obscured identity by using different pseudonyms in each study for the two participants who participated in both Study 2 and Study 3. Additionally, I invited Australian participants, as members of a small and well-connected community, to review a draft of the profiles in Appendix C, to provide an extended member check of the accuracy of the content and, essentially, of their anonymity within it.

I have followed the dominant paradigm (Kaiser, 2009) of anonymising participants’ names and obscuring key identifying details, complying with the HEAG’s dictate even where a participant would have preferred me to acknowledge them as the author of the ideas. To the hobbyist expert, validation can be important; to my research participants, I apologise unreservedly that I was unable to offer this to you.

3.8.2. Digital methods (Study 1)

Online privacy is complex and nuanced, and individuals’ and researchers’ understanding of privacy may vary. A specific ethical concern that arose during Study 1 was the use of web forum posts. There has been considerable debate as to whether research of this kind requires informed consent and ethics approval (E. A. Buchanan, 2011; Waskull & Douglass, 1996; Zimmer, 2010). Several studies have taken the stance that the posting of material on a public forum obviates the need for informed consent or ethics review, even in highly sensitive settings (e.g. Seale et al., 2010). Sveningsson Elm (2009, p. 70) notes that privacy protects “research subjects’ right to integrity and

self-determination”, and Moreno, Goniou, Moreno, and Diekema (2013) discuss the question of whether social media posts can be considered to be public or private. The Association of Internet Researchers outlines six guiding principles for ethical Internet research (Markham & Buchanan, pp. 4-5). Beyond this, issues may arise around decontextualisation and amplification of posts (Highfield & Leaver, 2014).

Building on an accepted tradition of observational research on “behaviour performed within the public domain” (Sixsmith & Murray, 2001, p. 425) is the suggestion that “Where it is reasonable to argue that there is likely no perception and/or expectation of privacy ... use of research data without gaining valid consent may be justifiable.” (British Psychological Society, 2013, p. 7). Similarly, Moreno et al. (2013) observe that “access ... is public [where] information is identifiable, but not private; and information gathering requires no interaction with the person who posted it online.” These authors suggest that the level of risk associated with a particular behaviour might also be a consideration for the ethical researcher.

The main public sources used in Study 1, the forums on BoardGameGeek and play-Agricola.com, as well as online reviews, do not require a password to view posts. The cited posts in Chapter 4 are clearly intended to announce information (about the game *Agricola* or about a website or app) to readers, rather than to convey private information. Although play-Agricola.com does not appear to publish Terms of Use, the Terms of Service of BoardGameGeek.com explicitly allow for reuse of content by site users (Boardgamegeek.com, n.d., clause 4E). Moreover, boardgamers are not a vulnerable group, and participants’ opinions on boardgames are unlikely to attract any undue censure. Accordingly, I understand these postings to be in the public domain and their use in this research to be both permissible and ethical. I have not anonymised or ‘rogetised’ material from social media. In fact, I have made an effort to acknowledge the individual authors of posts and comments that I cite, respecting their right to ownership of their comments. Importantly, I have treated these quoted posts with respect and dignity, representing them fairly, and not exposing posters to the risk of mockery or of harm (Markham & Buchanan, 2012). My goal in using the selected quotes is to allow individuals to speak for themselves, rather than putting words in their mouths.

In retrospect, three years after writing Chapter 4, and having had time to more fully consider the ethical implications, I regret not doing more to ensure informed consent from participants. This study represents a missed opportunity to consider ethical treatment in a more thoughtful and active way. For future work, I aim to pursue a more nuanced model for treatment of online posts with a similar model to the retrospective consent proposed by Kaiser (2009), attempting to contact participants with a request to quote their comments offering four options:

- No, you may not use the comment;
- You may use the comment but should take steps to obscure details, including changing some words to make it difficult to find as the result of a search;
- You may use the comment but please use an alias; and
- You may use the comment as is, attributing it to me.

In cases where participants fail to respond, but consent can be presumed (e.g. publicly viewable posts on a website), the second option, where comments are both anonymised and rogetised, provides the most appropriate model.

3.9. Conclusions

In this Chapter, I have provided an overview of the three studies that contributed to this thesis, describing the methods that I used and positioning the studies within a constructionist, interpretivist, symbolic interactionist framework. I have demonstrated links to the core disciplines of HCI and of Game Studies for the frameworks as well as for the methods used for data generation and analysis. Moreover, I have shown how those methods are deeply connected to the theoretical framework for the research as well as to the Research Questions that motivate and direct it.

I have also considered my own role in the data and in the analysis of that data, reflecting on the ways in which my own experience as an active participant in the boardgaming hobby may have influenced this research. In considering the treatment of online posts, I have identified an opportunity to improve the ethical treatment of data harvested from the Internet.

Having introduced the relevant literature that has supported and informed this research, outlined the methods that generated the data and analysis, and described the limitations in the data, the next chapters will present the findings of my research.

Part I: Boardgames

Chapter 4.

Digitising Boardgames:

Issues and Tensions

4.1. Introduction

Having provided both the disciplinary context for this research and outlined my methodology and the methods used, I now turn attention to games. In Chapter 2, I described different definitions of what constitutes a “game”. Key attributes, which I will return to in this discussion, include the notions that games are playable artefacts, they are material, and they enable and encourage play. This goes beyond the understanding of games as “systems defined by rules” (Björk, 2008). This chapter provides a detailed review of the digitisation of three boardgames: *Agricola* (Rosenberg, 2007), *Ascension: Chronicle of the Godslayer* (Fiorillo & Gary, 2010), and *Puerto Rico* (Seyfarth, 2002). The review examines how the digitised games are presented, as well as some discussion around both the games and digitisation in general. In doing so, it addresses RQ3: How does playing a tabletop boardgame differ from playing it in digital form?

In this case study research, which looks at the games *Agricola* (Rosenberg, 2007), *Puerto Rico* (Seyfarth, 2002) and *Ascension* (Fiorillo & Gary, 2010), I focus on the ways in which the rules and systems of these games are implemented across at times very different platforms. At first glance (see Figure I.1), it may seem odd to equate the *Puerto Rico Evolver* spreadsheet (Mitton, 2005) with the published game or with the cluttered interface on *Brettspielwelt*, but if we are concerned with the game not as artefact but as a playable assemblage of rules and systems, this correlation is clear.

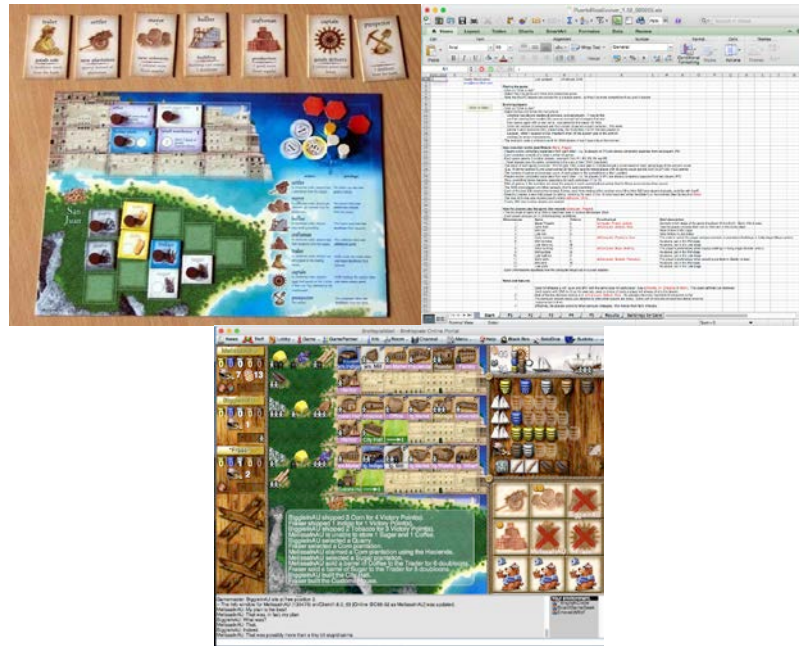


Figure 4.1 Three ways to play Puerto Rico: in its material form; on the Puerto Rico Evolver spreadsheet; and on Brettspielwelt.

In this chapter, I argue that there are three key tensions that arise through digitisation of boardgames. Firstly, there is tension between the original materiality of the game and its presentation on digital devices – ultimately, this revolves around the selected interaction metaphor that is adopted for the game. Boardgamers prefer a literal interaction metaphor, yet publishers increasingly hide certain elements of the game from users. Secondly, there is a tension between revealing or concealing (or automating) the housekeeping chores of the game (Xu et al., 2011). Players may appreciate being released from the need to focus on potentially tedious elements of the game – addition of scores, money or resources, or on tracking key information – hiding too much detail of the gameplay may reduce the players’ understanding of the state of the game (Pape, 2012; J. R. Wallace et al., 2012). I link these housekeeping chores to the concept of articulation work (Anselm Strauss, 1988), showing that the two concepts can both be used to describe a broadly similar range of events. Thirdly, there is a tension between hiding and revealing information about the game’s underlying calculations – informing play (Zuboff, 1988) and enabling what is known as theorycrafting (Paul, 2011). As this paper demonstrates, the unofficial digitised versions of *Agricola* and *Puerto Rico* reveal information about the game’s operation and underlying systems that affects not only online play but also play of the physical game.

The result of this is that even players who choose not to play the digitised game may benefit or be otherwise affected by the knowledge that accompanies it.

4.2. Prior publication

As noted in Chapter 1, this research is submitted as a thesis with publication. Accordingly, this chapter is presented as-is, in its published form, as required by The University of Melbourne (Graduate Research Hub, n.d.). I have cropped page margins for improved fit and legibility, but otherwise the paper is unaltered. The paper was originally presented at the Digital Games Research Association (DiGRA) annual conference in Lüneburg, Germany, in 2015, and was published in the proceedings as a full paper. It was peer reviewed by two reviewers and a meta-reviewer prior to acceptance. Although the four complete papers included in this thesis were written to stand alone, each contributes to my overall argument. As well as the short additional discussion below, the discussion and conclusions in Chapter 9 bring together my findings, including those in this paper and in other previously published work.

4.3. How does this paper contribute to the thesis?

This paper responds to RQ3, introducing the discussion of boardgames by presenting the contrast between physical boardgames and digitised formats. As an output of Study 1, and the first output of my research project, it sets up my area of focus – modern European boardgames, or “Eurogames” (Woods, 2012) – and situates this work in the disciplines of Human-Computer Interaction and Game Studies. Moreover, it introduces the idea of digitisation of boardgames – although digitisation is not the focus of this thesis, is it nevertheless a concept that is present across it, and that I return to in Chapter 9. Indeed, my original intent was for this research to examine the digitisation of boardgames, however the research in this paper as well as the semi-structured interviews described earlier led not to digitisation as an end in itself but to an understanding of the importance of the materiality of boardgames.

This paper demonstrates three key decisions for designers and publishers of digitised boardgames and illuminates the surrounding tensions between the desires of game designers, of app developers, and of hobbyist boardgamers:

- How literal should a digital implementation of a boardgame be?

- How much should housekeeping tasks be revealed or hidden?
- How much should be revealed to players about the underlying algorithms and calculations in the game?

It suggests that these design decisions have broader applicability both in the design of natively digital games and even in pervasive gaming environments.

4.4. Methods

This study – Study 1 – used a case study method based on artefact review for data generation and analysis, with a case-to-case synthesis for analysis. These methods are described in Chapter 3. In Appendix D, I describe the process for choosing these games, my own (re-)familiarisation with them, and how I identified relevant articles in online communities and the mass media. Further, I provide additional detail around the methods used for generation and analysis of data.

4.5. PDF of paper

Digitising Boardgames: Issues and Tensions

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ABSTRACT

In this paper, we discuss the different ways in which modern European boardgames (“Eurogames”) are converted for digital play. We review digitised versions of three popular tabletop boardgames: *Puerto Rico*, *Agricola* and *Ascension*. Using these examples, we demonstrate the tension between the interaction metaphor of the original analogue medium and the metaphor of a digital game. We describe the importance of housekeeping chores to gameplay and position them as a form of articulation work, which is typically hidden by digital implementations. Further, we demonstrate the types of information that are created through digital play and discuss how this influences game play of both digital and physical boardgames.

Keywords

Board games, interaction metaphor, articulation, theorycrafting, informing

INTRODUCTION

Boardgames, traditionally played in their physical format using boards, cards, dice, playing tokens and the like, are increasingly being translated to digital form for devices such as smartphones, computers, videogame systems and tablets. To date, little attention has been paid to how and the degree to which this digitisation affects or transforms the experience of play. There is growing tension between the desire for digitised boardgames to be true to the interaction metaphor (Sharp et al. 2007, 58-63) of the original medium and the desire to extend the game to explore the potential of the digital medium. Importantly, digitisation of games can change the gameplay activities and the ways in which they are managed, including being hidden or made explicit. In this paper, we provide case studies of three representative boardgames and their digitisations. We demonstrate the tensions that arise between the analogue and digital mediums, in particular in the ways in which administrative management tasks are realised in the digitised game. Further, we show how different approaches to digitisation lead to different play experiences and informate (Zuboff 1988) the game, leading players to develop new strategies based on detailed statistical evaluation. Decisions about how to digitise boardgames can impact not only the play of the digital implementation but also that of the physical game, even for players who have never played it in digital form.

The games chosen for this study reflect our interest in modern European boardgames (“Eurogames” (Woods 2012)), a genre that is increasingly being digitised both to cater to

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the boardgame enthusiast and to attract new players. The selected games are representative of the genre: both *Puerto Rico* (Seyfarth 2002) and *Agricola* (Rosenberg 2007) have spent significant time at the top of the BoardGameGeek.com rankings and remain in the top 5 games. Each has been digitised several times and in different ways. *Ascension* (Fiorillo and Gary 2010) was chosen in counterpoint both as a representative of the popular “Deck Builder” genre and for the designer-publisher’s embracing of a semi-native digital format in parallel with the boardgame. Each of these games is largely deterministic, in that there is minimal uncertainty in the game, with player skill the paramount element. In *Puerto Rico*, there is uncertainty in the selection of player order and to the order in which plantation tiles are drawn; in *Agricola*, uncertainty arises from the drawing of occupation and minor improvement cards as well as from the (semi-programmed) order of Round cards; in *Ascension*, the deck is shuffled randomly but players choose which cards to “buy” or attack from a tableau. This focus on luck minimisation or mitigation is a core element of the Eurogame genre (Woods 2012, 113) and is in opposition to other styles of game, which rely more heavily on random elements.

The approaches to digitisation that we describe in these case studies are typical for the Eurogame genre. The digital implementations reviewed generally offer players the chance to play against one another rather than against an AI opponent, with the exception of one particularly influential early implementation (the *Puerto Rico Evolver* (Mitton 2005)).

Data for this study has been derived from online forums at BoardGameGeek, play-Agricola.com and Ascensiongame.com, as well as from the physical and digitised boardgames that we discuss. Rather than providing a separate literature review, the relevant literature will be discussed throughout the paper.

PUERTO RICO

Puerto Rico was the seventh published game by designer Andreas Seyfarth, whose game designs have twice won Germany’s critically-acclaimed *Spiel des Jahres* (Game of the Year) award. Seventh in the popular “big box” line by German publisher Alea (an offshoot of Ravensburger Spieleverlag), in 2002 the game won the prestigious *Deutscher Spiele Preis* (German Game Prize) award for best family/adult game, as well as the coveted *Essener Feder* (Essen feather) for best-written rules. Other awards followed from Japan, USA, Germany, France, the Netherlands, Poland, the Czech Republic and Spain. Seyfarth himself says that it was with the design of *Puerto Rico* that he finally achieved his goal of developing a game that would fill an evening, with an appropriately-themed setting and long-lasting challenge (Aleaspiele.de n.d.). *Puerto Rico* was the highest-ranked game on Boardgamegeek for six years.

Puerto Rico is a game for three to five players in which players develop the island of Puerto Rico. They can raise crops, construct buildings (which enable crop harvesting and also confer other in-game benefits) and ship goods back to Europe in exchange for Victory Points (VP). Each round, players take turns to select a role; each role allows all players to take a particular action, but confers a benefit on the player who selects it. A player who selects the Captain, for example, receives one extra VP for shipping, but allows other players, in turn, to ship their goods; a player who selects the Craftsman allows all players to produce goods but receives one additional good as a bonus.

An expansion to *Puerto Rico*, comprising 14 new buildings, was released through German gaming magazine *Spielbox* in 2002. Another, which introduced “nobles”, was included in the *Alea Treasure Chest* – a collection of small expansions for games published by Alea – in 2009. A limited anniversary edition published in 2011 included both of these expansions as well as new artwork and redesigned components including metal coins, together with the 2-player variant rules which had previously been published on the Alea website. The game was controversially re-released in 2013, with new artwork and both expansions, as game 16 in Alea’s Big Box series¹ - although to date only in German, Italian and Hungarian. *Puerto Rico* also inspired the card game *San Juan* (Seyfarth 2004), which designer Seyfarth has said he prefers to *Puerto Rico* (Vasel 2006).

Digitising *Puerto Rico*

There have been several digitised versions of *Puerto Rico* across multiple platforms. Two are particularly interesting due to the choice of platform and audience.

The *Puerto Rico Evolver* is a spreadsheet that “plays” *Puerto Rico*. At its core is its “evolution” of new opponents: “Computer-controlled players are created randomly and can then play many, many games against each other. The winner of each game survives and has offspring (via a type of sexual reproduction with other successful players). The losers die.” (Mitton n.d.). As at September 2014, the *Evolver* had been downloaded from Boardgamegeek.com nearly 60,000 times. The *Evolver* is designed “to evolve reasonable players of the game from a random start” (Mitton 2010b) and has remained popular due to the strength of its opponents and ease of play. “From a pure efficiency of the game, what’s the best port of Puerto Rico? It was an Excel version (Puerto Rico Evolver) that showed the info in easy to compare columns. Sure it sacrificed the beauty of the game, but the efficiency and richness of info was perfect. It even had shortcuts so I could play an entire game in 10-15 minutes.” (S. 2011). With neither graphics nor rules explanation included, its audience is the purist; those players who are happy to play a game distilled to its core mechanisms against increasingly competitive opponents. The *Evolver* has no official status – it was not approved by the designer or the publisher – and has not been licensed or promoted.

A different approach was adopted by the programmers of *Brettspielwelt* (BSW), a web platform created in 1998 (Zbiek n.d.), where users can play multiplayer boardgames in real time against human opponents. Through its “meta-game”, registered users of BSW can organise into cities, which function as administrative units and have much in common with *World of Warcraft*’s guilds in that they “frame a player’s social experience” and ‘put “social pressure” on their members to play longer’ (Ducheneaut et al. 2006, 5), as well as into guilds, which function as a fan club for an individual game, promoting its play across BSW by running tournaments, learning sessions and special events. On BSW, all implementations are officially licensed – publishers engage in a commercial relationship with the platform in order to have their games featured, with games increasingly released simultaneously on cardboard and in digital form. Strong relationships with publishers and BSW’s narrow focus on boardgames ensure that the games are implemented precisely according to the rules as written, although variants are sometimes allowed as options. BSW’s reputation is recognised by its formal relationship (since 2001) with the German Board Game Team Championships; from 2015, between one and three teams will be able to qualify on BSW (rather than through regional tournaments) for the tournament’s finals (Janshoff 2014).

After a period where *Puerto Rico* was withdrawn from BSW after the sale of its electronic rights (Madmax 2007), it returned in 2010 (Maloney 2010). BSW's *Puerto Rico* implementation offers players the choice to play with the base game, the first expansion or a combination of the two. Although the interface uses the game's original artwork, the interface to BSW itself is clunky and dated, with a reliance on user-customised menus and command line interfaces. Real-time text-based chat is available through "channels" including one for the user's home city, as well as through the game room itself. BSW maintains basic statistics on players' games played, win rates and opponents, but not on in-game events such as roles selected and buildings purchased.

An iOS version of *Puerto Rico* (Codito Development Inc 2011) was released in August 2011. Like the BSW implementation, this uses game art to deliver a visually similar experience to the original boardgame, borrowing its colour palette and fonts. It adds a tutorial, as well as "help" and "hint" functions and seven different AI players across three levels of difficulty.

AGRICOLA

The first "big box" game by designer Uwe Rosenberg, *Agricola* (Rosenberg 2007) was released in German at the *Spiel* game fair in October 2007. Recognised for its engrossing gameplay and tight integration of theme and mechanic, *Agricola* uses the "Worker Placement" mechanic, where players' pieces are used to select an action that only that player may perform during the current round. Designer Rosenberg has written of his desire to approach the narrative complexity of a computer game (Rosenberg and Jensen 2007); the rich theme of the game is strongly tied to the potential actions that are available. Having taken and held the top ranking on Boardgamegeek.com from *Puerto Rico*, *Agricola* is currently ranked fourth out of over 70,000 (10,081 ranked) games and has won more than 20 critical and popular awards including the *Deutscher Spiele Preis* for best family/adult game and a special "Complex game" award from the *Spiel des Jahres* jury.

Agricola is played by 1 to 5 players, who assume the role of farmers in 17th century Europe. Players start with two tokens, representing a farming couple, but may later increase the size of their family to a maximum of five tokens (each providing one action per round). There are 14 rounds in total before the game ends, with players scored for the diversity of their farm: the presence of pastures containing up to three types of animal, ploughed fields with grain and vegetable crops, a renovated clay or stone house rather than the initial wooden shack, and of course a large farming family to help with chores. This growth seems organic, although slow at first: players must collect wood in order to fence pastures before they can hold animals, and must collect grain and plough a field before they can sow it, harvest it, and bake it into bread to feed their family. The limited number of turns makes each action valuable, particularly as players come under pressure to produce crops, gather resources and breed animals before the end of the game.

Agricola is supplied with three decks of cards, although it can be played in a simplified form without these. At the start of the game, players collaboratively select a deck or combination of decks (E – entry, I – interactive, K – complex) and are each dealt 14 cards. They play these cards during the game, which costs valuable actions but delivers other benefits that will, ideally, outweigh the action cost. These cards introduce additional randomness to the game, and there has been considerable discussion of how this can be mitigated, including suggestions of card drafting and a "draw 10, discard 3" rule, both of which increase the chance of obtaining cards which can be combined for exponential

benefit. Although *Agricola*, like other similar European-style boardgames, lacks direct player interaction (Woods 2012, 104), players must monitor not only the frequently complex interplay between cards but also the indirect interaction on the common action spaces (for example, another player taking the "build fences" action or "shoe shopping" by taking an accumulated supply of resources (Rosenberg 2009, para. 92)). Many decks of cards have been published as expansions, and one larger expansion was released in 2009. A 2-player game, *Agricola: All Creatures Big and Small* (Rosenberg 2012) was released in 2012, and *Agricola*-themed small card decks for popular games including *Skat* and *Memory* have also been produced.

Digitising *Agricola*

As the popularity of *Agricola* grew, its fans began to look for opportunities to play it online. Fan Chris Deotte launched play-Agricola.com, justifying the availability of its 6 (now 20) online game rooms as format-shifting of his own copies (Deotte n.d.)². The site is unusual in that it does not programmatically implement the administration of the game (e.g. the "restocking" of spaces at the end of a round): as in the physical game, the players must move the required resources onto the available spaces. The site allows players to use variant card drawing rules including a draft where players select the number of starting cards and then each draft 7 cards.

In 2013, developer Playdek released an iOS app for *Agricola* (Playdek 2013)³, offering both online and offline play, including pass-and-play for both the simplified (card-free) Family game and the base (E-deck) game, as well as solo play including the "Solo series" challenge. Additional decks were added later as low-cost in-app purchases. The app allows players to choose variant card drawing rules, including the "Draw 10, discard 3" variant. Key elements of the game's artwork have been animated, with the boardgame's action cards shown as buildings in a village rather than as physical cards, but the overall appearance of the game has remained true to the boardgame's visual design and uses Klemens Franz's original artwork. The app has gained acclaim both from players of the boardgame and from those who came to the game through its digitisation: "*Agricola* is a superlative port of an equally exceptional game." (Eklund 2013), "This is truly one of the best, if not the best, board game apps you can play on your iDevice." (Neumann 2013).

ASCENSION

*Ascension: Chronicle of the Godslayer*⁴ (Fiorillo and Gary 2010) was released in 2010. A deck-building game, it was designed by a group of *Magic: The Gathering* (Garfield 1993) Pro Tour champions. Like *Magic*, *Ascension* has a complex and largely unrealised backstory rooted in epic fantasy which is revealed piece by piece as new decks are released, but is very much secondary to the gameplay: "The story never really came into play during my time with *Ascension*, and I'm perfectly fine with that. ... If I wanted to read a novel I'd download one. I just want to play cards." (Fahey 2011). *Ascension*'s gameplay is straightforward, and similar to other deck-building games: Draw a hand of 5 cards, play some or all of them to gain points, use those points to acquire other cards, discard any remaining hand cards and draw a new hand. In its most basic form, *Ascension* allows players to gain two types of points: Runes build strength to acquire new cards, Power builds strength to kill monsters. "Construct" cards, when played, remain in the player's tableau and confer a permanent ability. Players accrue Honor (Victory) Points throughout the game (For a detailed review of *Ascension*, see Nealen 2013).

A series of expansions adds not only new cards but also new gameplay elements and contributes details of the backstory. Each can be combined with other games or played as

a stand-alone 2- (small expansion) or 2-4-player (large expansion) game; rules are provided for combining the different sets. This adds what has been called “development uncertainty” which keeps the game fresh by regularly adding new content to the existing pool (Costikyan 2013, 68) and builds on the proven success of *Magic: The Gathering*’s regular release cycles (Planet Money 2015).

Cleverly, each new two-game storyline “resets” the franchise, rather than simply building on the extensions of the previous block. Thus, *Ascension: Rise of Vigil* (Gary 2013) introduces new features rather than directly building on those introduced in *Ascension: Storm of Souls* (Dougherty et al. 2011) and *Ascension: Immortal Heroes* (Dougherty et al. 2012). Selected features are re-implemented, but the designers have wisely chosen to focus each new release on two or three major features, ensuring that the game does not become overly complex or intimidating: “As a game’s card pool grows unchecked, its metagame begins to stagnate, and the game falls apart under its own weight.” (Fantasy Flight Games 2014). To play *Ascension* with all six decks would be unwieldy, with an unacceptably low chance of achieving the special combinations that make gameplay exciting and give players the feeling of having done something clever or unexpected.

Digitising *Ascension*

Publisher Stone Blade Entertainment has embraced the digital medium. Its second game release, *SolForge* (Garfield 2013), is a digital trading card game by the designer of *Magic: The Gathering*. The company has a single website for the digital and physical games of *Ascension*, and its central website presents *Ascension* and *SolForge* side by side. All of the official *Ascension* expansions, as well as selected mini promotional expansions, are currently available on the Playdek iOS app, which has been acclaimed as an outstanding digitisation of the game. “The digital implementation of the real world card game is really pretty top notch. The layout on screen is clear, which to be honest I was a little surprised by since there’s a lot of information that needs to be conveyed.” (Zuccarelli 2011), “Combining the graphic design of collectible card games with the fast pace and accessibility of a board game, the iOS version of Gary Games’ *Ascension: Chronicle of the Godslayer* is a godsend to fans of card-based gaming.” (Fahey 2011). Interviews with gamers support this claim, with several noting that they prefer the digital version over the cardboard original, while also noting that they use it to fill in time, as “almost a mindless activity”.

THE BOARDGAME METAPHOR

Although for many, online play is a distant second to playing the physical boardgame – “I’d rather play face to face, but if I want to play *Magic*, and there’s nobody around, I play online.” (Trammell 2010, 17) – its proponents recognise that online play can increase opportunities for play and for learning. Woods (2012, 167) has shown that social interaction is critical to players’ enjoyment of the boardgame experience; Stenros et al. (2009) demonstrate that sociability occurs not only within digital games but also around their play, with even single-player games incorporating a social element. This desire to play – and to enable play – and the recognition that the game is the same (but maybe a little different) is fundamental to the digitisation of boardgames.

Common to almost all these boardgame digitisations⁵ is the adoption of the metaphor of the boardgame. In interaction design, a metaphor “utilizes well-understood concepts or attributes from one domain to make points or provide insights about another.” (Hamilton 2000, 239): it is “a device for seeing something *in terms of* something else” (Burke 1941, 421). In the formal language of metaphor, a digitised boardgame IS a boardgame,

although there is tension between remaining true to the metaphor and providing enhanced functionality. The source (“boardgame”) provides a context for understanding the target (“digitised boardgame”) (Stubblefield 1998, 73). Whilst “interfaces strongly based on a well-known metaphor require very little explanation to users,” “magical” functions – which provide enhanced functionality that is not present in the literal interpretation of the metaphor – may require explicit explanation (Smith 1987, 61-63). At first glance, boardgame interfaces are extremely literal: digitised cards behave like cards; digitised dice are rolled to generate random numbers; digitised pieces are seen to move. An exception is in tracking players’ scores: whereas physical boardgames usually use a scoring track, known as a *Kramerleiste* (Kramer scale) (Eggert 2006), in digital boardgames this is simply represented as a number, which (magically) increments when a player scores.

For the experienced player, then, much of the interface is easy. Even to a player who has not played the physical game, the familiarity of the literal boardgame metaphor provides clues as to possible actions even in a digital environment. This metaphor has been extended to natively digital games (notably *Hearthstone* (Blizzard Entertainment 2014) and *SolForge*), leading one reviewer to comment that Playdek’s *Agricola* “is so convincingly themed and touch-friendly that an innocent soul could be forgiven for thinking that they were playing a iOS original with board game styling” (Eklund 2013). Games like *Hearthstone* echo the development of early MUDs and MMOs which built on the familiar experience of early Role-Playing games like *Dungeons and Dragons* (Gygax and Arneson 1973) by adopting its structure of experience points, levels, character stats and classes, as well as its familiar fantasy tropes of exploring dungeons, killing monsters and collecting treasure.

This use of metaphor extends to the game components and even its visual design. BSW’s *Puerto Rico* looks like Alea’s physical *Puerto Rico*; *Agricola* looks like *Agricola*, *Ascension* like *Ascension*. Digitised cards ARE cards, digitised cattle ARE cattle tokens. An exception is *Agricola*’s Round cards, which act not as a card (with a card’s affordances of being held, dealt or shuffled) but as an action space (where workers may be placed in order to take the corresponding action). Playdek have represented these cards as areas on a village green, choosing to reflect their function (action space) rather than their form in the digitised game. Similarly, the iOS *Puerto Rico* game represents colonists not as tokens on the board but by function: colonists enable buildings and plantations to produce, so adding a colonist to a building animates that building (Cummings 2011). These developers have adopted a new metaphor which reflects the function that the card plays in the game, rather than its appearance.

Arguably the most important part of the game is its rules. Evans (2013) sees rules as a form of participatory text, positing that games “are produced in the interaction between players, pieces and rules” and noting the importance of translation in ensuring that gameplay is consistent across different versions. This consistency is important not only across languages but also across modalities; Playdek CEO Joel Goodman has commented that, “our *Agricola* has to be completely, 100% literally true to the rules of the boardgame. Uwe [Rosenberg] wouldn’t allow us to change a rule or how anything was played.” (Faraday 2013). He continues, however, “from a Playdek perspective though, we’ll never do that again. We’re forging forward to create incredible experiences in hobby gaming but we’ll also take advantage of the platform. We make video games”. Goodman sees Playdek’s role not as a translator but as an interpreter: “you’re opening the doors to ‘non-hobby gamers’ — that’s a more appropriate term than ‘casual’ gamer for

who you're trying to reach." (Faraday 2013). Developers, it seems, would prefer the freedom to add magic to extend the game beyond a literal translation.

On the other hand, both Goodman and Chris Ewington of Codito Software, who created an iOS version of *Puerto Rico*, recognise that fans of a boardgame are "passionate" about the game as they know it (Faraday 2013, Nicholson 2012). There is an inherent tension in staying true to the boardgame while maximising the affordances of the digital medium.

ARTICULATING THE PLAY EXPERIENCE

The types of work required to negotiate and organise collaboration in team-based projects have been termed "Articulation work" (Strauss 1988). Articulation work is outside a project, "extraneous to the [core] activities" (Schmidt and Bannon 1992, 8). Accepting that "games are *social* in nature and therefore exhibit essential characteristics of cooperative work" (Crabtree et al. 2007), the concept of articulation work provides a useful framework for understanding the game's chores or "housework" – "the *work* necessary to make the *play* happen" (Xu et al. 2011, 3) – which enables the game but is not explicitly part of its play. Indeed, there are marked similarities between the two: "Insuring the flow of resources" (Strauss 1988, 166) relates to "manipulation of physical objects" (Xu et al. 2011, 7); "making arrangements about the division of labor" (Strauss 1988, 166) surely incorporates "discussion about turn taking" (Xu et al. 2011, 7); and "supervising delegated or assigned responsibilities for task performance" (Strauss 1988, 166) encompasses "enforcing and/or learning rules" (Xu et al. 2011, 7).

It is in these three types of articulation that digitised boardgames typically are distinguished from their cardboard counterparts. In all of the examples discussed, turns and turn-taking are managed automatically by the implementation: players are alerted when it is their turn. Some games even incorporate a log of actions, enabling players to see what happened on previous turns.

Manipulating objects and managing the supply of resources, however, is more complicated. In *Puerto Rico*, a player who takes the Mayor role has the opportunity to manage the number of tokens which will be available to the next player to take the role. Should she forget to do this, her opponents are permitted but not obliged to remind her: "forgetting" to remind the Mayor to restock is a potentially successful strategy, at least for novice and intermediate players. In the digital versions of *Puerto Rico* reviewed here, this restocking is performed automatically, removing this (arguably unsporting) feature of play. A similar, possibly more familiar, example occurs in *Monopoly* (Darrow 1936): players must explicitly demand rent payment from their opponents, who are not obliged to offer payment to an absent-minded landlord. In *Ascension*, significant articulation work is required to transform cards, change card values, monitor which cards have already been used in a particular round, shuffle decks and track Honour Points, Runes and Power – the iOS application manages all this, although arguably with an associated loss of granular control and oversight. In physical play, the restocking of an *Agricola* board between rounds ensures that players understand the cycle through which resources enter the game and become available for collection: at play-Agricola.com, this rules knowledge remains explicit as players perform the restocking themselves. Playdek's app automates the game's chores: "In the actual board game you have lots of moving parts, tons of bits, and you manage everything yourself. ... The iOS game is more of an experience." (Adams 2013). These administrative chores comprise "a rich source of social interaction" (Xu et al. 2011, 3) in analogue physical play, and play an important role in reinforcing players' understanding of the underlying systems of the game, whereas

in online play "things [may] happen automatically, instead of you knowing the rules." (Trammell 2010, 18). Echoing this, Wallace et al found that increasing automation of tasks affecting game state in a digitised version of the game *Pandemic* (Leacock 2007) could confuse players, "especially after complex events" (2012, 234). That "the system should make the underlying model accessible to users" (Schmidt and Bannon 1992, 20) is a tenet of articulation work. This sense that playing the physical game is more real or meaningful than the digital game, or that the work of articulating a game in some way contributes to learning it, supports the proposition that magical interfaces are harder to learn than literal replicas (Smith 1987). As a player we interviewed said, players on the *Yucata* game platform "still have to know how a game scores, whereas on the iOS implementations, I find you don't need to know as much."

Digital games are expected to enact and enforce the rules of the game. For example, there is evidence that the *Puerto Rico Evolver* is used as an authoritative source of rules, either to resolve disputes (Newman 2006) or as a learning aid, to improve the player's own play or practice (Jones 2013, Cheyne 2010). Digitised boardgames have become a pathway to the physical game rather than simply a tool for devotees (Alvaro 2011, Melby 2013). The inclusion of tutorial modes in the *Agricola* and *Ascension* iOS implementations explicitly recognises that it has become the role of the device, rather than of the players, to perform the essential role of teaching and enforcing the rules. Indeed, the language of developers at times suggests that they see rules as an obstacle to (rather than an enabler of) play: "Board Game Geek has a scary breakdown of how [the game] works, but we advise that you not look. The upcoming iPad version, as with all of Codito's awesome ports, will focus on cleaning up the experience and putting the rules in the background" says Codito Software's Chris Ewington (as cited in Nicholson 2012) of his company's digitisation of *Le Havre* (Rosenberg 2008), a successor to *Agricola*. Ewington sees the role of the digitised game as providing the magic rather than literally replicating each element of the experience – and it is the articulation work which is removed or hidden. "Our challenge is to take care of as much of the mechanics as we can and support the game experience without taking away from it. Let's get all the other crap out of the way so you guys can just have fun playing the game and have fun with the theme and figuring out how to kick your friends ass without having to remember all the rules and picking up all the pieces and sort them out" (Ewington, as cited in Nicholson 2012). Playdek's philosophy is similar: "In order to amass a huge 50-, 60-point score in *Agricola*, you have to get extremely good at the strategy. But just to get from one end of the experience to another and finish with 5 points or negative 2 points, you can still get there and have the experience of plowing a field, picking up sheep. At that point they're miles away from the true depth of the game, but that shouldn't be prohibitive to that player's enjoyment of the game." (Faraday 2013). Digitisation in the mass market has broadened the games' player bases and explicitly recognised that games offer enjoyment at many levels of play, with articulation work seen by players and researchers as an essential part of the play experience and by developers as an unpleasant chore that is best avoided.

INFORMATING THE GAME

At the heart of these games' strategy is the player's own assessment of subjective probability: which of the limited available actions is most likely to bring the greatest reward? Digitisation has allowed for new data to be gathered and compared – it has allowed games to be informed (Zuboff 1988) to a degree far beyond what their designers or publishers might have envisaged. For many players, absorbing this data and finding ways to apply it has become a core element of the pastime of gaming (Carter et al. 2014): it is not simply playing a game that is enjoyable, but rather attempting to solve it.

The *Puerto Rico Evolver* provides raw statistics about its AI players in plain text, indicating the frequency that selected buildings were bought by winning “evolved” players at the end of Turns 4 and 10 and the end of the game. These data suggest that an optimal play strategy combines the Small Indigo Plant, Harbour, Customs House and Guild Hall and does not include the University; a player who memorises and acts on this information can expect to perform well not only against the AI but also against human opponents. At the same time, there are players who reject this “Groupthink”, but the success of the informed methods typically leads these players to reject the game itself rather than continue to play organically and sub-optimally.

Similarly, publication of cards’ statistical data at play-Agricola.com makes the relative strengths and weaknesses of cards and strategies overt. Play-Agricola.com creator Deotte (2011b) has suggested in his site’s forums that players can “use these (generated) statistics to win more”, whilst card designers can “use statistics like these on newly developed cards to balance cards”. In response, “Hala” comments that the statistics “could help you draft more powerful cards (whose power is not so obvious) and avoid cards whose stats prove they are “fooling”.” The experience in the natively digital game *World of Warcraft* is similar: “Instead of simply ‘playing’ a game, the goal becomes attempting to optimize one’s approach. In doing so, the game shifts from something where there are choices to make to one where there are clear rights and wrongs to follow.” (Paul 2011). Players are not necessarily improving their flexibility and skill at manipulating the game elements but are demonstrably increasing their ability to identify the most powerful cards and to implement them at the optimal moment in the game. For these players, subjective probability is replaced with objective probability, as informed by the learned game statistics.

A more overt example is seen in the digitised game *Carcassonne* (Wrede 2000), where players are able to view which tiles have or have not been played in the current game, and an X is displayed on spaces where no remaining tile will fit. Although some players are able to memorise the tile mix and are therefore aware of this state, they are a very small minority and are inevitably fallible; the digitised game provides concrete and definite information to inform play.

Even where this data is not explicitly published, collecting data about a game for the purposes of improving one’s play is a common activity: for example, players of *World of Warcraft* (Blizzard Entertainment 2004) engage in “theorycrafting”, using mathematical analysis to identify the “underlying formulae that govern *WoW*” (Paul 2011). This process can itself change the nature of the underlying game. By publishing this information, play-Agricola.com facilitates and even encourages theorycrafting, with a focus on the use of cards and combinations of cards, just as the *Puerto Rico Evolver* reveals statistics about buildings and suggests optimal strategies based on the buildings’ apparent relative strengths.

This theorycrafting is seen as a learning experience by players; a way to improve their own performance. In discussion in the play-Agricola.com forums (Deotte 2011b), user “treyalsup” notes that published card statistics have “already helped my game quite a bit for making me aware of many cards I was evaluating incorrectly. It especially made me look at cards I didn’t fully understand that are winners for others.” This mirrors “Brian’s” account of playing *Magic Online*, asking more experienced players for advice during a card draft and using that advice to learn more about the game and become a better player (Trammell 2010, 11). Like reading rules and managing game pieces, theorycrafting is

arguably another form of articulation work, occurring remotely from the game, outside the immediate play setting. In an apparent demonstration of the strengths of this method, play-Agricola.com creator Deotte claimed a victory for the site at the 2011 World Boardgame Championships (Deotte 2011a). Reporting on the results of the tournament, he noted that of 100 entered players in that tournament, the 25 semifinalists included all six of the entered play-Agricola.com “regular players” and the top three places in the contest were taken by those regulars. Similar claims have been made about the quality of BSW’s *Puerto Rico* players (see Maloney 2010). Meanwhile, tools like the *Puerto Rico Evolver* allow players to run alternative scenarios and experiment with the cost of buildings, and may have inspired the designer’s own comment that “he would indeed decrease the cost of the university by 1 doubloon and increase the cost of the factory by 1 doubloon.” (Rosenberg 2009, para. 95). It is notable that none of the official implementations that we have reviewed enables this overt tinkering. Game developers have suggested that they see this type of information as useful to developers and designers in balancing a game but potentially game-breaking in the hands of consumers or players (Sztajer et al. 2014). For many players, however, as well as their opponents, digitisation, with its support for informing and theorycrafting, has fundamentally changed their engagement with and experience of the game.

CONCLUSION

The examples of *Agricola*, *Puerto Rico* and *Ascension* demonstrate that the choice and design of a digital platform can influence the ways in which digitisation affects a boardgame. The tension between the specific metaphor of the boardgame and the affordances of the digital medium remains largely unexplored. Whilst there is widespread acceptance of some simplification on the periphery of the game, modifications to gameplay remain controversial and hint at a divide between the boardgame industry and the digital game industry, where developers seek to extend the game and add magic as they translate it to the digital medium rather than simply copying the game literally from one medium to the other. Digitisation can support the player community by supporting sophisticated players and/or by making the game accessible to new audiences, but there is a need for game developers to recognise the effects of automating key articulation activities, which may assist players to understand the rules and strategies of a game. Importantly, hiding the “work” of the game may obscure rather than simplify the player’s understanding of the game’s structures and systems; articulation tasks are more than just “crap” to be endured, they contribute to players’ understanding of the game’s rules as well as its patterns of play.

A digitised boardgame can be a valuable learning tool, but can also create new information about the game through informing game statistics, and can engender new tactics through theorycrafting, which may be equally effective in face to face play as in a digital implementation. Publishing informed data and statistics makes theorycrafting an overt activity which increases some players’ enjoyment of the game through their perceived improvement in performance while interfering with the enjoyment of others, who feel that the gameplay has been reduced to an exercise in “groupthink”.

Although this paper focuses on digital boardgames, its implications extend more broadly within the digital game environment. The metaphor of “game” frequently leverages tropes of analogue games which are tested within the boardgame environment but extend beyond it into digital and even pervasive gaming. Further work in understanding these design choices, in particular the way that boardgame designers and publishers, players and digital game developers perceive the relevance of the metaphor of the physical

boardgame, as well as exploration of types of chores found in digitised boardgames and the way in which they are represented to the users, will inform development of digital boardgames and provide broader insight into the experience of play across analogue and digital environments. Informing or theorycrafting is known to occur in natively digital games as well as in digitised boardgames; understanding its effects may allow for it to be directly leveraged within gameplay. Lastly, developing an understanding of articulation of play and how this contributes to learning, strategy and a sense of wonder or magic will not only contribute to successful digitisation of boardgames but will also suggest opportunities to hide or reveal elements of the structure of natively digital games to enhance and innovate their play.

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ENDNOTES

¹ See for example <http://boardgamegeek.com/thread/1060609/new-edition-being-released> and <http://boardgamegeek.com/image/1815278/puerto-rico-limited-anniversary-edition> - the Alea Big Box series is seen as a collector's set, with the games to be "shelved" in order, and many felt that they did not want to see the same game twice in the series. Similar concerns were expressed when its eighth game, Mammoth Hunters (Moon and Weissblum 2003), was published in English without the series number "8" on the box.

² Whilst Lookout Games has never officially commented on the legality or otherwise of the site, tacit approval was provided by Lookout's Hanno Girke, who provided public feedback after using the interface for a solo game (Girke 2008, October 9)

³ *Agricola* can also be played online (in English, French and German) at boiteajeux.net, albeit with a restricted set of cards (diplojak 2011). Card drafting is available; players can also choose the "Draw 10, keep 7" option. The site offers online turn-based (asynchronous) play of 49 different boardgames and ranks users using an Elo style rating system common to other gaming sites including the Playdek app, but does not offer the detailed statistics and analysis that are routinely found on play-Agricola.com.

⁴ A word on terminology. The game itself is generally known as *Ascension*; each boxed edition has historically had its own title (*Chronicle of the Godslayer*, *Rise of Vigil*, etc). With the third release of the game, the core set (*Chronicle*) was rebranded as *Ascension: Deckbuilding Game*.

⁵ The *Puerto Rico Evolver* is unusual here in that it breaks the boardgame metaphor. Comments from its programmer suggest that this was expediency rather than a design choice – "I an [*sic*], indeed, not a professional programmer and the only programming-like tool I have available at both work and home is Excel." (Mitton 2010a). The *Evolver* is an unusual case, however, and is not representative of mainstream design choices.

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4.6. Discussion

This chapter presents the results of Study 1, in the form of an accepted, peer-reviewed conference paper. It describes three key ‘tensions’ that I identified as occurring when a boardgame is digitised. In the context of this thesis, it introduces the ‘Boardgames’ perspective, showing what can be learned through study of the game as an artefact, and responds to RQ3 which aims to understand the way that digitisation affects the practices of hobbyist boardgamers.

As an early piece of work during my candidature, this paper was important in shaping my thinking about boardgames and their digital representations. In particular, it allowed me to consider whether the traditional form boardgame and the digital representation were “the same game” as well as some of the unexpected effects of digitisation. It also highlighted the importance of the materiality of the boardgame, which emerged as a major theme of all three studies conducted during my research, as well as of articulation work. This led me to the Distributed Cognition framework that I use in Chapter 8.

The primary contribution of this study is in its identification of three key tensions that arise when boardgames are digitised. The first is the literality of the interaction metaphor, with many of the game’s material elements represented as-is in the digitised game. Dice roll and bounce, pieces move on the screen, the game’s artwork is preserved. A game’s components are important to its players, as I explore further in Chapters 5 and 6. The second is the importance of articulation work in enabling gameplay. I touch on this here and return to it for deeper discussion in Chapter 8. The third key tension concerns theorycrafting and the information that is created by and about playing the game. Although I have not returned to this topic specifically, it remains an important consideration in digitising boardgames as well as in other forms of game development. I return to these key findings in Chapter 9.

Chapter 5.

“I Love All the Bits”:

The Materiality of Boardgames

5.1. Introduction

Moving on from overt discussion of the relationship between physical and digital games, in this chapter I look explicitly at boardgames in their physical form. I offer a rich description and conceptualisation of the importance of the materiality of a game, which extends from the game components through the game box, the immediate place of play, and the broader home environment. I focus on boardgames as material artefacts and consider the many ways in which this materiality is valued by boardgamers. I present the concept of parallel use, where boardgamers engage with a game in both its physical and digitised format, and reference Actor-Network Theory and notions of material specificity in understanding the importance and value that boardgamers place on a game’s materiality. This focus on materiality refines and nuances Juul’s (2005) notions of the game as inherently transmedial, pointing to some of the ways in which the experience of gaming may be transformed through changes to the material form of the game. Moreover, I position the process of digitising a boardgame, discussed in Chapter 4, as a form of interpretation rather than translation.

This chapter responds to RQ₂ by shedding light on the material practices of boardgaming. Contributing to RQ₁, it shows that hobbyist boardgamers value the game’s materiality across multiple contexts and describes how they seek to both protect and enhance it. It moves attention from the games themselves to what hobbyist boardgamers say about the games, as well as to their practices. Further, it introduces what I later refer to as the ‘four pillars’ of the hobbyist boardgamer’s appreciation of boardgames: *sociality*, *intellectual challenge*, *variety*, and *materiality*.

5.2. Prior publication

As noted in Chapter 1, this research is submitted as a thesis with publication. Accordingly, this chapter is presented as-is, in its published form, as required by The University of Melbourne (Graduate Research Hub, n.d.). The paper was originally presented at the ACM SIGCHI Conference on Human Factors in Computing Systems in San Jose, USA, in 2016, and was published in the proceedings. The overall acceptance rate for the conference was 23%. It was peer reviewed by four reviewers and a meta-reviewer prior to acceptance. Although the four complete papers included in this thesis were written to stand alone, each contributes to my overall argument. As well as the short additional discussion below, the discussion and conclusions in Chapter 9 bring together all of my findings, including those in this paper and in other previously published work.

5.3. How does this paper contribute to the thesis?

This paper highlights the importance of the materiality of boardgames, which is an important theme in this thesis, and is picked up again in Chapters 6, 7, and 8. It primarily addresses RQ 2 – How is serious leisure boardgame hobbyists’ conceptualisation of their hobby realised in their practices of engaging with it? It demonstrates firstly that hobbyist boardgamers value the materiality of the games, and secondly that this informs their practices in engaging with games.

This paper further explores the distinction between playing a physical boardgame and playing its digital counterpart. Interviewees frame this as a distinction between reality and virtuality. It points to the potential to leverage this understanding in development of hybrid boardgames that use the affordances of a digital medium. The notion of “parallel use” provides an explanation for the way that these hobbyists make sense of their interactions with the same game across different media. Further, the paper explores the material specificity hypothesis and its applicability to boardgames. As I note in Chapter 2, material specificity is linked to the (perceived) affordances of the medium. It is a compelling and useful framing for understanding the importance of the “bits” of a boardgame.

5.4. Methods

This study – Study 2 – is based on a series of semi-structured interviews with hobbyist boardgamers. I used thematic analysis to analyse the generated data. A more detailed explanation of the method for this study, including reflections on the interview format and reporting, is included in Appendix E.

5.5. PDF of paper

Designing New Player Experiences

#chi4good, CHI 2016, San Jose, CA, USA

"I love all the bits": The Materiality of Boardgames

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ABSTRACT

This paper presents findings from a study of boardgamers which stress the importance of the materiality of modern boardgames. It demonstrates that materiality is one of four significant factors in the player experience of tabletop gaming and describes four domains of materiality in boardgaming settings. Further, building on understanding of non-use in HCI, it presents boardgames as a unique situation of parallel use, in which users simultaneously engage with a single game in both digital and material, non-digital environments.

Author Keywords

materiality; boardgames; board games; tangibility; leisure activities; serious leisure; digitization; parallel use

ACM Classification Keywords

H.5.2 [User Interfaces]: Miscellaneous; K.8.0. [General]: Games; H.1.2 [User/Machine Systems]: Human factors

INTRODUCTION

In parallel with the rise of digital games, over the last 20 years there has been a resurgence in interest in boardgames. Hundreds of thousands of enthusiasts attend game fairs like GenCon (Indianapolis, USA) and Spiel (Essen, Germany) each year [1, 31], and in 2013 one publisher reported having sold over 750,000 items related to a single game franchise [66]. Although modern boardgames are increasingly being played on digital devices, physical games remain popular, with many users choosing to engage with a game in both its digital and non-digital form.

In this paper, we present findings from a study of boardgame enthusiasts that stress the importance of the materiality of boardgames. Drawing on a series of rich, semi-structured ethnographic interviews with dedicated boardgame players, we demonstrate that materiality is a significant and valued factor in the player experience of boardgaming. Building on our understanding of the dimensions of boardgame play most valued by players, we

identify four domains in which players value, customise and protect the physical or material elements of their play experience. Drawing on interview data as well as online postings, we identify this interaction with tangible material components and play environments as a key element of the pastime of boardgaming [15] and discuss the contribution and importance of this materiality to the overall gaming experience, showing it to be a key factor that is driving parallel use of material and digital boardgames.

The research reported in this paper provides insight into why people are engaging with boardgames – what it is about the gaming experience that they find attractive – as well as how they are choosing to engage. These findings are used in understanding the – apparently inherently contradictory – situation whereby participants engage with boardgames for the overtly social experience and cherish their materiality, yet simultaneously choose to play these games in a digital environment with very different sociality [25, 81] and no physical interaction with the game itself. Further, building on understanding of non-use in HCI, we present boardgames as a unique situation of parallel use, where users simultaneously engage with a single game in both digital and material environments. This research extends prior research to a new domain, that of boardgames, building understanding of the boardgamer as user of (physical and digital) boardgames.

After reviewing relevant literature from both HCI and the emerging domain of game studies, this paper begins by discussing the reasons our participants give for enjoying playing boardgames. These reasons are echoed in our analysis of the four domains in which players value the materiality of the boardgames they play, which draws attention to similar themes elsewhere in the HCI community. We discuss these findings in the context of the growing number of digital representations of boardgames, describing implications for HCI including reality and virtuality, parallel use and material specificity.

RELATED LITERATURE

Although there has been specific attention to the user experience of digital games [8, 21, 37-39, 54, 55], little attention has been paid by researchers to the design and user experience of boardgames. Boardgames are occasionally used as exemplars to make points in general articles about usability [71], or augmentation, or in the context of a specific, novel digital device [10, 40, 65], however there is little published research about their user experience in tabletop or digital form. An exception is the

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work of Grider [33] which proposes, from the perspective of a developer, a series of usability guidelines for mobile apps based on boardgames. Like other work in this field, Grider's research focuses on the way that the rules of the game are enacted by the digital interface rather than on the role of the game components in enabling gameplay.

Two recent studies [16, 19] have addressed the material practices associated with tabletop gaming, highlighting the important role that materiality plays in tabletop gaming, in the context of the Miniatures game *Warhammer 40,000* [62]. The pastime of Miniatures gaming is deeply and fundamentally material, inviting painting of miniature gaming figures, construction of detailed game “terrains” and rolls of, potentially, over a hundred dice at a time [15, 16, 19]. Miniatures players value the material aspects of the gameplay experience: tactility, noise and spectacle.



Figure 1. Board & components for *The Pillars of the Earth* (image © Jeremy Harrison)

Lundgren [49] has linked gameplay design to interaction design. Like Schell [75], she sees gameplay as the enabler of experience; in this instance, interaction. Games allow for modelling of complex interactions like negotiation and trading as well as observation, body language and bluffing, and typically involve multiple users.

We position boardgame hobbyists not merely as people who enjoy playing games; they are “serious” gamers [79], who place value on “active participation within the hobbyist culture, the acquisition and accumulation of games, and a degree of evangelism for the hobby” [94] and are both passionate and deeply knowledgeable about their hobby. For these players, it is the broad experience of playing rather than the narrow goal of winning that is important. A much-quoted comment from game designer Reiner Knizia echoes this sentiment: “We all thrive to win – even though winning as such is utterly unimportant. It is the objective, the aspiration that counts” [47], often simplified as “When playing a game, the goal is to win, but it is the goal that is important, not the winning”. (see also [7]).

In the only comprehensive study of modern hobbyist boardgamers conducted to date, Woods found that the primary source of enjoyment in games, selected by nearly

60% of respondents, is “Social Interaction” [94]. Other similar responses such as “In-game interaction” and “Shared Fun” appear in 4th and 8th position respectively, with around 18% and 11% of respondents. In second place, selected by around 27% of respondents, was “Strategic play” – a topic that is echoed in choices like “Intellectual challenge” (3rd, approx. 22%). In a boardgame, therefore, the path to winning should offer intellectual stimulation as well as opportunities for social interaction along the way.

In this paper, we present results from an ethnographic study that sought to gain a deep understanding of the motivations and experiences of dedicated hobbyist players of modern European-style boardgames. Our work does not focus on understanding games as systems: it is primarily concerned with understanding the enthusiasts’ culture of boardgamers, as well as their experiences when engaging in the pastime of play (gaming) [9, 15]. Our participants are committed to playing physical boardgames, but we were interested in exploring why they choose to play them and how this affected their uptake of both digitised boardgames and natively digital games.

Our research reinforces Woods’ findings of the importance of social interaction and intellectual challenge [94], but also highlights the importance of variety and novelty in game selection as well as the important role of the materiality of the boardgame and the gaming environment. These four dimensions inform our discussion of the materiality of games and play.

RESEARCH DESIGN

Participants were recruited through an advertisement on the Boardgamegeek.com website as well as through social media, using the first author’s contacts in the hobby. Four were female and seven male, aged from mid 20s through to early 60s. Seven of the eleven participants have children, whose age ranges from under 10 to early 20s. None have grandchildren, and all work in white-collar jobs (one is retired; another is a PhD student). Participants live in Australia (6), Europe (3) and the USA (2).

Interview process

Semi-structured interviews were conducted by telephone and skype, as well as face-to-face, by the first author. An interview guide was used, which outlined general questions for the interview, although these were not generally asked verbatim as the discussion was allowed to develop naturally. One hour was allocated for each interview, although many took more time due to the participants’ detailed responses. Although the general style was conversational, contextual inquiry-style summarisation techniques were used to check the researcher’s understanding of participants’ comments and responses. Additionally, in places, participants were asked to describe a concept “as you would to a non-gaming friend or neighbour”. This prioritised the participant’s, rather than the researcher’s understanding.

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Analysis & Coding technique

Interviews were transcribed verbatim (omitting ums and ahs) and the text was analysed and coded using thematic coding [11, 17]. Themes (codes) were derived directly from the data and represent the “particulars” in which “Ethnography reveals” [23, 24].

Recognising the importance of acknowledging “when the researcher is, and is not, an embedded member of the community being researched” [12], we note that the first author is an active participant in the boardgaming hobby community and was known, either personally or by reputation, to all interviewees; indeed, her role in boardgaming communities provided connections to participants as well as “insider” credibility for recruiting participants and conducting and analysing interviews.

THE ENJOYMENT OF BOARDGAMES**Sociality**

Participants in our interviews stressed the importance of the social experience of play; of spending time with like-minded people. In some cases, the boardgames even took a back seat to the underlying sociality of the evening:

“It’s a great excuse to get together with a bunch of people, doing something that involves using the mind but is also relaxing: you sit, you chat and have fun. ... And I’ve had occasions where I’ve gone for “an evening of gaming” where no actual gaming took place because we just started talking and had a fun evening.” (P5)

Indeed, when participants were asked to state what they *didn’t* like about playing boardgames, they typically described “fun-murdering” behaviours which break the sociality of the event and violate Knizia’s axiom that players should play to win.

“I don’t like when people do something that ruins for someone else, without having an obvious advantage for themselves. ... I’m just ruining it for you because I can or this doesn’t really give me much, but it ruins a lot for you, so I’ll do it anyway.” (P7)

Although general complaints about specific individuals or an exaggerated desire to win might seem incongruous in a competitive setting, understanding gaming of any form, including digital, as a social activity in which players collaborate in the act of play [18, 82, 89] explains this explicit focus on the sociality. If players are not simply opponents but friends and peers, then it follows that play itself is an expression of that friendship and a breach of the conventions of play offends not only the play setting but also the underlying social relationship itself.

Intellectual challenge

“It’s the intellectual stimulation, I think. ... It’s about decision making. It’s active and it’s engaging all the parts of my brain.” (P9)

Participants spoke in detail about the intellectual challenge presented by the boardgame. Indeed, this challenge is the focus of many attempts to define a game; strategic thinking and the sense of trying to solve the game’s underlying systems are an essential component of play.

“Power Grid, Hansa Teutonica are really about the challenge of trying to understand what other people are going to do and why they’re going to do it and how to benefit from those decisions or be unharmed by those decisions - they’re all about the mental challenge and the depth and complexity” (P4)

Many participants tied this into broader choices that they make in their lives about pursuing intellectual activities – they frequently mentioned their love of reading and several had also explored their own potential as a game designer.

Through this deep thinking about the play of games and the systems which they comprise, boardgame players incorporate them into their (extended) perception of self [6]; games become an integral part of their identity.

Variety

“One year I tried to play games from every letter of the alphabet.” (P6)

Unlike serious mass-market or traditional game players who participate in clubs and contests oriented toward a particular game, the hobby gamer values “diversification and accumulation” [94]: it is the pastime of gaming [15], rather than a specific game, that they are serious about. Acquisition of games is an important part of participants’ engagement with the boardgaming hobby, with an individual’s games, like their other possessions, contributing “an important component of sense of self” [6]. The emic term “the cult of the new” is used to describe some boardgamers’ preference for acquiring and playing the latest titles over replaying older games.

“New games come out and you think ohh I really like this but after about 10 plays you go, Yeah yeah what’s the next one, moving on – ... it’s like getting a new album. And you play that album over and over again until you go, no, what else have I got? But you do have a couple of favourite albums that are always close by that you can put on whenever you want.” (P2)

Participants valued the opportunity to play a variety of games and game types and used a variety of methods to classify them by genre, theme, mechanic, number of players, duration, designer, artist or publisher. Variety is achieved by altering any or all of these elements.

“Strategy games, ... economic games, ... games about Egypt ... or word games versus worker placement games, there are many different ways of describing them. At least with other more serious gamers, they could have a conversation go, why don’t we play an auction game set in ancient Egypt, and we could come up with at least a couple of games that fit that type or category.” (P1)

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Many participants track their games played, some over many years, and are able to cite statistics about their own game playing habits. Several even set goals around the number of games that they wish to play in a year, or the number of times they wish to play a particular game, or even the types of game that they will play. Others aim to improve their gaming “h-index”, or create “five and dime” lists of games played five or ten times over a year; Boardgamegeek.com allows users to track their “plays,” and at least one Smartphone app [88] enables users to monitor and update this information, even at the gaming table.

Participants reported spending as much as A\$15,000 per year on their boardgaming hobby, although this figure included costs of travel to participate in international boardgaming events as well as game purchases.

“I think we’ve gone from the 20 something games that [partner] had when we first started - when I first started seeing him - to our collective collection is about 300.” (P3)

Although the overall size of a game collection might remain static over a period of time, the content of the collection can vary as the gamer regularly purchases and then trades or sells games, often as a means to manage their collection size as well as to limit the overall cost of participation. Participants are aware of their “collection size” both as an objective figure and as a subjective position in a hierarchy of game owners.

“We do have many games, roughly about a thousand board games, war-games ... I haven’t seen recent figures on BoardGameGeek but I think that would put us in the top 5% or possibly 3 or 4% in terms of collection size.” (P1)

Materiality

Each participant in our study described the importance to them of material elements of the game.

“I do love components. There’s something about the way games look. I’m looking at a copy of Orléans at the moment and it looks fantastic ... there’s the tactile nature of the components and the colours and the pictures and the in-jokes that people put in games, and the shuffling of things and the moving things about, the tile-laying - it’s that - there’s a lovely dexterous, sensuous feeling you get from just interacting with the physicality of the game that I really love.” (P10)

In the following sections, we will explore the ways in which this materiality is realised and extended during the gaming experience.

FOUR DOMAINS OF MATERIALITY

Our interviews with dedicated hobbyist boardgamers suggest four domains in which they value and seek to control or improve on the material elements of their play experience.

Players value and protect game components as objects, and seek to “pimp” or customise games by collecting or making improved or additional game components such as counters, playing pieces or victory point tokens as well as by adding items which contribute thematic detail. Further, they enjoy the boxes or materials in which the games are stored, and customise these principally to protect pieces or streamline setup of the game but also for purely aesthetic reasons. Outside the game, boardgamers describe the importance of play-enhancing environment features such as an appropriately-sized table, comfortable chairs and adequate lighting, all of which directly impact on the player’s experience during gameplay. Other attributes of the wider home environment, such as shelving for game storage, the use of game boards and components as artwork and even the availability of dedicated game rooms for gaming, are also important in creating an environment of “props which invite, space which allows” [see also 32, 44], reflecting and extending the player’s identity.

Game board & components

Participants emphasised the importance of boardgames’ material components, although they stressed that they were secondary to the gameplay itself. A good game benefits from good components, but components alone are not enough to save a bad game.

“A really nice Crokinole board, a really nice Snooker table - they’re just examples of craftsmanship, they’re just marvellous.” (P4)

Boardgame players frequently seek to customise games, not to remedy a perceived deficiency but rather to improve on something that they already admire and to reinforce the game’s personal meaning to the participant: “we make things a part of self by creating or altering them” [6]. Additionally, participants sought to protect the game components, either because they admired the game and wanted to look after it or (in limited cases) because they wanted to protect their financial investment in the game.

Valuing components

“Unboxing” videos, in which a game’s components are lovingly removed from the box, explored, counted and displayed, are familiar to consumers of tech products, and offer a ritualistic spectacle of unveiling, touch and physicality. They highlight the importance that boardgame enthusiasts place both on the components and on the box as their proxy. Purchasing a game allows the gamer to “unshrink” the game (removing its shrink wrap) and “punch” it (removing tokens from the enclosed token sheets); these acts of appropriation and ritual unveiling are the sole prerogative of the game’s owner, who controls it for their own personal use [6]. The game’s components embody and represent the theme, rules and potential actions encompassed by the game.

“There is a major rush the first few times you open the jam-packed box to see (straight from the back of the box

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description): 300+ wooden pieces, 60 acrylic nuggets for ores and rubies, 16 game boards, 400 pieces from 16 punch boards, 30 cards, 1 scoring pad, 1 rule book and 1 appendix.” [59]

Images of boardgames in play reveal players’ tendency to fiddle with pieces, aligning them with one another, or creating sculptures and groupings. The pieces of a game have toy-like properties, proposing the question “When people see my game, do they want to start interacting with it, even before they know what to do?” [75]. Of course, in some cases, components may also have negative impacts:

“I saw [Agricola] at the convention in Essen and it has these really large playing pieces. ... In short, I was thinking, family rules, large playing pieces, suitable for tiny children’s hands. This is probably not a game for me. It turned out it was the game for me and I enjoyed it a lot.” (P8)

This focus on the materiality of the game is not unique to modern European boardgames, although the game components and their affordances may vary across different game genres. Carter, Harrop and Gibbs [16] describe the play of *Warhammer 40K* [62], where players may be required to roll and resolve 100 or more dice at one time – a quantity of dice more than sufficient to “fill two cupped hands” – yet they were unable to find a single player who elected to use a readily available simulator to perform the dice rolls. Like our boardgame enthusiasts, *Warhammer* players valued tactility and spectacle, seeing these as inherent parts of the gameplay experience.

Valuing components leads to a desire for completeness. Players do not wish to lose that which they consider valuable, particularly when the loss of a piece, card or tile can effectively prevent successful play of the game. Packing a game away is seen as an important part of the experience of play, which commences when the game is removed from a shelf or container (and arguably even earlier) and does not end until it is returned, complete, to its place (or after, if there is a lengthy post-mortem discussion either in person or via social media) [51]. It goes without saying that failure to abide by these mores will be punished, usually by removal of access to the game.

“We got advised [returning home from a gaming event] that one of our games was missing a component ... something that obvious should have been caught before the games were returned to us. Needless to say, that’s the last time [my wife] brings them to [that event].” (personal correspondence)

Customising components

As well as enjoying the game itself, several participants described enhancing the experience of play by “pimping” the game: adding new material or replacing supplied components with other objects. Like other productive leisure practices such as crafting, which are of considerable interest to HCI researchers [69, 70, 83, 93], this curation

and customisation is a “democratized technological practice [which] unifies playfulness, utility, and expressiveness” [83].

Although boardgames are published with beautiful artwork and the components needed for play, many boardgamers enhance their play experience by replacing components with other, more beautiful or thematically appropriate components. Third-party companies, as well as game publishers, sell sets of replacement pieces to upgrade popular games, and discussion of game pimping abounds on online forums. It is considered particularly appropriate to replace generic items with something that is thematically matched to the game’s content. For example, when the game *At the Gates of Loyang* [68] was released in 2009, the publisher offered early purchasers a pair of Asian coins to replace the more generic wooden discs used to mark player position. Modelling tools like FIMO are widely used to create replacement pieces for more generic components; this generates both aesthetic pleasure and “pleasures of production” [83], and further appropriates the game for its owner.

“I like making my games pretty. So for example, one of my games - Fresco - I’ve made little tuckboxes to hold the cards and the paint tiles - I’ve a pile of FIMO sitting there, waiting for me to make little amoebas and poos for my Primordial Soup - just cos I think that’s a very cool game and I think, if any game deserved to be pimped out, it’s a game about evolution and eating other amoebas’ poos.” (P3)

Participants were clear that this type of customisation was to enhance rather than to remediate the games, which are complete and adequate as received, however we are aware that some gamers do remediate their games, particularly on ideological grounds. Others use “paste-ups” or stickers to localise an international version of a game or add visual aids, for example to help colour-blind players.

Protecting components

With the cost of boardgames running from A\$20 for a simple card game to over A\$140 for rare or component-heavy games, boardgames represent a significant investment and their owners understandably seek to avoid preventable damage to their games. Just as losing components can be annoying and can even render a game unplayable, damage to components, boards or boxes is to be avoided. In the unlikely event that it happens, there is often an expectation that the offender will offer restitution in the form of a new or at least clean copy of the game. While not all accidents are as extreme as that reported on a boardgaming site by Dontanville – “When you spill a drink on your board, the first thing you want to do is mop it up. When someone pees on your board, you don’t want to go anywhere near it.” [22] – many gamers have rules about food and drink at the game table. These range from an anything-goes attitude – “if I was overly worried about it I wouldn’t have brought it to the bar in the first place.” [56] -

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to the banning of all food, all drink, everything except (and sometimes even including) water, in the interest of preventing a “Snackastrophe” [84].

The practice of “sleeving” game cards in thin, custom-sized plastic pockets not only protects cards from greasy fingers and accidental spills, it also ensures that newer cards are indistinguishable from old and that normal wear and tear does not inadvertently mark a card or type of card so that it could be identified in the course of play.

“I wish that I had sleeved my [Battlestar Galactica] cards. The last time I played, a player with long fingernails was shuffling the skill decks, and now two of the Leadership cards are permanently marked.” [76]

Sleeving can be an expensive activity – some gamers prefer to replace a set of cards when needed rather than invest in sleeves for an entire game. A game like *Dominion* [86] comprises some 300+ cards and can be bought for as little as \$25 US (new price on Boardgamegeek.com, 9/3/15); sleeving the game, at \$16.95 USD for 500 high-quality sleeves, adds significantly to the expense of owning the game.

The game box

It is difficult to determine exactly when an experience starts or ends [51]. Our interviews make it clear that the experience of play commences well before the first player takes a turn, and even before the pieces are removed from the box. The game box comprises part of the game’s fundamental materiality: it represents the game and keeps it safe, and may even form the basis for the players’ game selection. Durable, yet ephemeral to the gameplay itself, the game box, like other forms of packaging, “is integrally tied to the ongoing performance of the product offering” [85].

“Klemens [Franz]’s artwork is just beautiful.” (P10)

Gamers value the artwork of a game and the design of the box. Boxes of modern European boardgames typically credit the artist as well as the designer, with some – Doris Matthäus, Franz Vohwinkel, Michael Menzel, Klemens Franz – now household names for hobbyists. Companies design games to have a similar look and consistent size across a range; for example, German publisher Alea has produced three numbered game series which are referred to simply as Alea’s big, medium and small box games.

But the tangibility of a game goes beyond merely visual. The smell of the new components marks the experience of opening the box for the first time. Smells provide additional context; Lundgren [49] notes that the use of smell “exemplifies how games open up new aesthetic dimensions and questions.” Further, gamers relish the sound that the box makes, often referred to as “box fart” or “fart factor”. *“You ain’t heard nothin’ until you hear this one cut loose. It’s an extra deep box which clearly helps the resonation and acoustics. Also, the box is more flexible than most,*

which actually helps it in this case. The box fart is incredibly deep and loud. It’s like a tuba.” [72]

Beyond a mere receptacle, the game box acts as a proxy for the game, the container of the space of possibility that the game represents.

Component storage

Although boardgamers may admire the function, smell, artwork or “fart factor” of a game box, many devote even more attention to the way that pieces are stored within the box. Customising storage options within the box fulfils several functions: it may protect pieces from damage; ensure that all pieces are packed away (preventing loss of valuable components); sort components to expedite setup or simply satisfy an urge to (further) customise the game.

“I have each player’s pieces in one baggie of course (and color-coded, except for Purple, because it would cost me thousands of dollars to custom-order purple baggies, although I’m considering a Kickstarter for that!).” [3]

In the emic language of boardgamers, to “bag” a game is to pack game components into multiple smaller (usually self-closing) bags to sit inside the original game box. One gaming event even advertises a “bagging station” where players can “have your game bagged and organised by us”. Bagging a game may dispense with the need for a “box insert” – a shaped or moulded plastic or cardboard piece which sits inside a game box to hold the sorted pieces securely. “Tuckboxes” are custom boxes, often shared as PDF files on hobbyist websites, designed to hold the cards or tiles of a game, often reusing the game’s artwork to adapt the boxes to the game. Some Tuckbox designers even offer a choice of depths to accommodate cards with or without sleeves. Like hacking and crafting practices in other media, this “is a performance closely related to creativity and individual identity” [69]. Fabric bags are valued as draw bags for game pieces, particularly where the fabric pattern matches the game in some thematic way.



Figure 2. Egyptian-themed tile bag for the game *Ra* (image © Diane Close)

The game box provides the external storage not just for the game components but for the owner’s personal storage

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solution and customised pieces, which in many cases is valued more than the functionality of a custom box insert.

Immediate play environment

“If you print a card game, you need colours [so] that it’s possible to play it in a pub, or not in bright light, in nearly dark. It is different than a board game, which is normally played on a table where you can use different colours or different material.” [Friese, personal communication]

The environment where a boardgame is played is critical to the players’ enjoyment of the game – and even to their ability to play a game at all. Whereas a light social game might be played at a coffee table or in a bar, longer and more strategic games require a table and chairs, as well as a well-lit playing space that is not too noisy to allow conversation and concentration. But the desire to customise and control the play environment goes beyond these basic needs, and many boardgamers describe making choices about the way their table is set up, and choosing furniture to maximise playing space or to protect game components from prospective damage:

“We have side tables. Or “Safety tables” as they are called by my friend who managed to spill a full glass of water over my copy of Descent. With all the expansions.” [77]



Figure 3. An image shared by a gamer who took her own light to a gaming event in a bar with inadequate lighting (image © Kerrin Addis)

The selection of appropriate furniture demonstrates the value that players place on the gaming environment. Custom game tables are marketed with information about how they improve the play experience, for example through integrated cup holders that prevent players’ drinks from accidentally being spilled on the playing area. Many also provide storage for in-progress games, allowing play of longer games over several sessions, with the in-progress game stored securely between sessions. Through in-built or add-on features like drink caddies and separate side tables, the choice of furniture on which to game can improve the experience of play and allows players to protect their games from potential damage.

Customising the home

Overwhelmingly, gamers that we interviewed spoke about the importance of having a place to play beyond simply a

table and chairs in a dining room or den. Whilst some have a dedicated game room already, others described their wish for such an area, both to get their games out of a common or shared area (typically a dining room) and to create a dedicated space for both storage and play. Space is seen as a limiting factor on the size of participants’ game collections; just as serious leisure expands to fill, and often exceed, available time, so a player’s collection expands to fill and exceed available space [79]. The sociality of the gaming experience contributes to this desire to dedicate space to one’s game collection, given that “we are ... likely to treasure most those possessions associated with pleasant memories” [6].

“We’ve framed the premium Caylus edition, so we’ve got the original boardgames art and it’s, you know limited edition, signed, blah blah blah, we’ve got that, we’ve got P.I. , we’ve got El Capitán, so - where there’s beautiful art, we like to present it as art.” (P3)

Gamers share and discuss “Shelfies” – photos of their (filled) game shelves. As in other Maker communities, there is pleasure in sharing and discussing solutions. A recent twenty-minute video – with over 7,000 views in its first month – compares the relative merits and storage capacity of three different IKEA shelf solutions for storing a boardgame collection [57]. Further, Shelfies provide an opportunity to share the spectacle of one’s collection, “to be discussed and to be shared with others” [78].

“Right now, the shelves are set up in the dining room. That was supposed to be a temporary arrangement. They’ve been there for 10 years [laughs]. ... So that’s the plan, is to finish the basement once again, have all new shelving downstairs for the games, so that we can take them out of the dining room, put ‘em down there But yeah, they’re temporarily in the dining room, been there for 10 years. Much to my wife’s consternation [laughs]” (P6)



Figure 4. A (partial) shelfie, showing game storage in a home. Image © Melissa J. Rogerson

As objects are integrated into the home, they undergo what has been called a “cultural redefinition process” which

moves from objectification through incorporation to conversion [64]. Objectification represents the entry of items into the home. Initially purchased purely as objects, boardgames are incorporated into gamers' homes as they make time to play them and integrate this into their routines. Conversion represents the presentation of these items to others. This echoes the ways in which people incorporate their own possessions into their extended self [6]. Boardgame enthusiasts repurpose space within their home to present themselves as serious hobbyists and repurpose game components to not only display their games as games but also as art, reflecting the value that the enthusiasts place on these physical items.

IMPLICATIONS FOR HCI IN DIGITISING BOARDGAMES

It is clear that absence is no barrier to the desire to play: people have been playing games with absent friends for hundreds of years. The earliest origins of correspondence chess are unclear, but date back at least to the 1800s and likely earlier [90]. More recently, games like *Diplomacy* [13, 14] and others that were specifically designed for the play-by-mail market have been played by correspondence, email and online. Boardgame adaptations have developed from early play-by-mail through play-by-telegraph and play-by-email games through to Smartphone apps and console gaming, which represent a digital evolution of the earlier correspondence-based games.

Whereas digitised interfaces typically aim to improve or extend the non-digital interface (for example, eBooks allow bookmarking, change of font & font size, even hypertextuality [95]), we find that boardgame interfaces tend to an extreme of literality. Game components are represented in their original form in digital implementations – boards appear as boards, cards as cards – although in some cases a functional approach has been adopted. The rules of the original boardgame are applied directly to the digital medium; it is rare to see rule changes in a digital implementation.

"It's the same game, same rules, not physical so not sort of being able to see the other people and interact with them that way" (P1)

This blurring of the lines between digital and tabletop boardgames is hardly surprising. Both types of game have similar elements, in that their rules describe both "the actions players take and the outcome of those actions" [73]; indeed, it has been argued that "almost all of game design is the same whether you're working with the tabletop or video" [63]. The essential difference is the medium. Although tabletop and digital games are often discussed separately, due to their distinct media and the affordances that these bring, it is clear that they share not only a history but also many common design elements.

Although the rules of the game remain constant, the affordances of a game pawn – touching, rotating, stacking, placing – differ from the perceived affordances of the same

pawn when represented on a screen. The digitised game offers other advantages however:

"there's a lot of numerical housekeeping involved in playing [Ascension] - you might turn over a card and that means that two of the cards in the middle now cost less, something else was impacted; turn over another card and that may change something else and - the iPad version takes care of all of that for you and presents it to you so you can play a game in a couple of minutes ... I wouldn't want to play in real life because there are so many fiddly little things that go on, that it would actually be quite a chore to play it." (P1)

Reality and Virtuality

Although some of our participants choose not to play boardgames in digital format, the choice to engage with a boardgame or a digitised boardgame need not be a binary choice. Publisher Days of Wonder's CEO Eric Hautemont has noted in media interviews that sales of digital boardgames drive sales of the physical game:

"Unlike the music industry, where for the most part it has been transitioning to digital, for board games the two experiences are complimentary, ... People that buy the iPad version of a game ... are then purchasing the board game" [61].

This recognises that virtual and real technologies sit alongside one another, and that "the introduction of new 'virtual' technologies can actually stimulate more of the corresponding 'real' activity" [96]. Several of our participants used the term 'real' to describe the tabletop boardgame experience. They noted that manipulating the game components supported their learning and understanding of the game's core mechanics and strategies.

"I think I understand Ticket to Ride because I played it in real life ... I need to play it in person with the decks and the cards and tokens and things to understand the processes, the logic of it because [the digital implementation] does so much automatically for you, you can't follow what's happening." (P9)

Research has shown that lower levels of game automation in a digitised boardgame – which more accurately correspond to the physical experience of play – led to improvements in players' understanding of the state of the game [91]. Two of our participants, however, noted that excessive interaction with game components could be "dull" or "fiddly". These players identified complex articulation tasks [67] as a key element where they appreciated the role of a digital device in manipulating game elements and keeping score.

"when I play [Small World] in the real boardgame, I don't enjoy it ... because you've got to know how that counting works - so, I can just play it [on a device] as a random activity - and I do, I play it as an activity rather than a game, so - oh OK, so if I go here, go here, go here, I can

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get more points, but I don't have to worry about the actions of doing all the counting and keeping track of all that stuff, it – it takes the bookkeeping out of the equation.” (P3)

Although new media can be “forced to do the work of the old” [28], a challenge for design lies in understanding what that work entails and what new media offer [97]. The boardgame developer must interpret the game, identifying which features should be retained and where the digital medium can enhance the experience without compromising the player’s understanding of the game state, rather than simply translating the game directly to digital form. The digitised game must enforce rules and prevent player error; it must retain the ‘real’ feeling of the interaction but should at the same time avoid fussy or fiddly tasks. As we have discussed elsewhere, developers must consider carefully the ease of collecting, distributing and “theorycrafting” game statistics and the impact that this might have on the gameplay not only in the digital version but also in ongoing play of the original boardgame [67]. Our data from this study suggest that a developer may modify the rules that articulate the game to suit the digital version, but must retain its core gameplay mechanics. For example, the rules for the game *Tichu* [36] specify that it is played in anticlockwise order; this is disrupted and rendered irrelevant by the absence of a “player seating order” in the digitised game, however the ‘partnership’ play mode, special card-passing rules, trick-taking and scoring must be retained. Additionally, developers must choose whether it is preferable to represent the game’s state functionally or literally, for example by hiding or highlighting choices according to their availability. Lastly, a digitised game should support playful interaction not only within the game but also with its components, by allowing customisation and by giving players an opportunity to play with the game components, for example by rearranging cards or tiles in their hand or by stacking or sorting game pieces. Although some level of customisation is frequently a feature of videogames [20, 42, 87], we are aware of only limited customisation options in digital boardgames.

Many of these considerations highlight the potential for development of hybrid games where a digital device is used to provide error correction or deliver random or semi-programmed content within a tabletop boardgame, as is the case in the Ravensburger smartPLAY line, where a Smartphone is mounted above the gameboard and semi-programmed content is delivered via a game-specific app. Similarly, *Alchemists* [45] is able to be played with or without a ‘helper app’ which simplifies the game’s deductive element and – essentially – provides valuable error-checking functionality.

The affordances of the digital medium can reduce the cognitive load for players by representing clearly what is allowed and what is prohibited, without compromising or changing the gameplay itself, but they can also confuse and

confound players when their effects obscure the real underlying engine of the game.

Use and non-use

The phenomenon of non-use is of increasing interest in HCI [4, 29, 30, 35]. An understanding of why people choose not to engage with a technology can illuminate the experience of users of that technology and inform further design decisions – or inform a decision not to design at all [5].

Satchell and Dourish [74] identify several varieties of non-use, which they term lagging adoption, active resistance, disenchantment, disenfranchisement, displacement and disinterest. Common to all of these is the choice not to engage with a particular technology or with technology in general. This decision may occur before the person has engaged with the technology or may represent a change of approach or attitude; a person may reject or surrender a smartphone, e-reader or other piece of technology.

Research on e-readers highlights some of the reasons given for the choice to be a non-user and tallies with several of our findings amongst boardgame enthusiasts, in particular in their focus on the materiality of the reading (or play) experience. Just as boardgamers relish “new game smell,” non-users of e-readers identify the smell of a book as a fundamental part of their reading experience [50]. Book-lovers value the ability to customise their books through annotations and to display them “to signify their social status,” seeing the books as an extension of self [50]; similarly, as we have discussed, boardgame enthusiasts curate, customise and display their game collections. Like books, boardgames become part of their owner’s extended identity and the decision to engage with them on a digital platform is intertwined with the player’s identity as a gamer and with the embedded sociality of play.

Despite suggestions that e-readers may have the potential to replace book collections [58], none of the boardgamers we interviewed described getting rid of games as a reason for playing digital versions of games; although several commented on the space that was occupied by their game collections, this was seen as a reason to expand or remodel their home rather than a reason to reduce their boardgame collection size. In fact, we found that our participants more commonly had adopted what we term a parallel use approach, where they engage with both digital and analogue games and frequently purchase the same game in both digital and analogue formats.

Despite parallels with the book publishing industry, we see the boardgame market as a highly specific example of non-use. Those participants who choose not to play digital boardgames do not reject them because of an inherent failure in their design [30] or because they should not have been built at all [5] – indeed, many digital boardgames are rated highly by those who do play them – or even as a rejection of digital media or consumerist culture [4] – but because these digitised games are not the tabletop

boardgames that they choose to play. To our participants, the game *is* the medium, and it is the material interaction with that medium that allows and enables the game’s overt sociality.

Material specificity

Historically in HCI, materiality has been approached through the study of the affordances of materials as tangible interfaces, computational materiality and the communicative roles of materials (craft as HCI) [34]. Drawing on work from the philosophy of film, Gross, Bardzell & Bardzell discuss the “medium-specificity hypothesis,” which contends that “each medium is uniquely positioned to enable certain modes of expression and afford certain aesthetic experiences” [34]. Medium specificity is related to material recalcitrance because it articulates “what [the medium] is uniquely able [or not able] to do”. Criticisms of this perspective suggest that it is overly prescriptive and ignores the historical development of media forms; they suggest that it is the “conventional, symbolic and sociohistorical layer” rather than the medium itself which gives rise to this specificity [34]. The medium may not *be* the message [52], but it surrounds and embodies it.

An alternate perspective is offered by Fuchsberger, Murer and Tscheligi [28], who echo earlier work [52, 60, 97] in stressing that “new media and materials require new ways” – rather than focusing on the constraints or recalcitrance of a given medium, they see new media as a space rich with new possibilities. They adopt the theoretical framework of Actor-Network Theory [48], whereby the materiality of an object is itself seen as an actor “as the qualities constrain and enable certain ways of interaction ... The users are influenced by the materials, which direct them to reach a goal” [28]. In the context of understanding the boardgaming experience, this approach recognises that the game itself (and the materials it comprises) contributes to the overall play experience. Common to both of these approaches is the recognition that materiality fundamentally affects and constrains or enables interaction.

“[at the table] You can see [other players], interact with them, both within and without the game, at the spot, which you don’t get with most computer games” (P1)

The participants in our study, all passionate about their boardgaming hobby, stressed the importance of their interactions with tabletop boardgames, including the overt, face-to-face sociality. None felt that digital games had replaced boardgames, despite the variety of digital boardgames now available and the ease of playing them with friends and strangers around the world. Instead, many spoke of playing games in different modes at different times – on a phone or tablet in a boring meeting or during a commute, while travelling, or when local opponents were not available.

“It’s the same game, same rules, not physical so not sort of being able to see the other people and interact with them that way. When I was playing Tigris and Euphrates on the iPad I was playing with somebody in America and somebody in Scotland, so - um, the game takes a bit longer ... So I suppose for me, the computerised versions of boardgames – you get to play with people which you’re not going to be able to physically play with because you’re in other parts of the world // and you know, you either rarely see or in many cases, have never met.” (P1)

Although some participants played against known or unknown live opponents, others expressed frustration with waiting times and perceived obligation to play in both real-time and turn-based digital boardgames, preferring to engage in solo matches against an AI player. Many players owned a subset of boardgames in both digital and physical format, creating a unique adoption pattern of parallel use. Our data suggest that selection of a particular medium for gameplay may reflect a process of functional separation whereby the player constantly attempts to balance their appreciation of sociality, intellectual challenge, variety and materiality with the desire to engage in play with known and unknown, human and non-human opponents.

CONCLUSION

“I love all the bits. So I miss all the bits” (P2)

In this paper, we have identified four domains of materiality of boardgames, in which boardgame enthusiasts value the physical components of the game as well as on the broader environment in which play occurs. We have described the importance not only of the game components but also of the box and of the broader environment of play and even of storage, and have shown that boardgamers seek to customise their gaming experience in each of these domains. Further, we have discussed these domains in the context of digitisation, identifying the HCI implications of reality and virtuality, use and non-use and material specificity. We have shown that digitisation is a process of interpretation rather than translation, whereby the core rules remain the same but their implementation may vary, and have identified material specificity as one factor that affects this interaction. Further, we have shown that functional separation of the two forms of media has resulted in a new form of non-use, parallel use, whereby users simultaneously engage with the same game in both its digital and its physical form. This contributes to understanding the continued growth in popularity of boardgames on both tables and devices.

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5.6. Discussion

This chapter presents material from Study 2, in the form of an accepted, peer-reviewed conference paper. It describes the importance of materiality to hobbyist boardgamers, demonstrating that this is more than just talk. Hobbyist boardgamers enact the value that they place on materiality across four related domains. In the context of this thesis, this chapter extends understanding of the 'Boardgame' and highlights that it has importance simply because it is an artefact. Relying on data from Study 2, this chapter also provides a bridge to Part II of the thesis, which looks at Boardgamers. It focuses primarily on RQ2, and foreshadows my interest in materiality that led to RQ4.

This paper was an early result of the thematic analysis of the interview data. This analysis identified what I now call the four pillars of hobbyist boardgaming; this paper represents an exploration of the role of materiality. This theme is relevant not only in understanding games – and gamers' enjoyment of them – but also in enjoying the experience of gaming. This paper highlights that materiality is not only about the game pieces as physical objects but also about their affordances, about the value that is placed on them and about the "stubbornness' of material reality" (Apperley & Jayemane, 2012, p. 7)

The primary contribution of this study is its identification of materiality as one of the four pillars of hobbyist boardgaming, and its exploration of the four domains of materiality of boardgames. It demonstrates that boardgamers' enjoyment of the materiality of a game is not limited to the components themselves but extends to the game box, the location of play, and the broader domestic environment. Further, it contributes to understanding of digitisation as interpretation rather than straightforward translation and identifies parallel use as a conceptual framing of boardgamers' tendency to interact with the same game in both digital and physical format.

Alasuutari et al. (2013, pp. 467-468) describe the importance of artefacts in the lives of fans of a TV series. In particular, they discuss the way that these artefacts are placed and displayed on bookshelves and the importance of that spatial arrangement. Identifying as a member of a group of TV enthusiasts gives meaning and credibility to

that enthusiasm – just as these hobbyist boardgamers' habits and practices acquire meaning and credibility through their membership of a group. I consider this more in Part II.

Part II: Boardgamers

Chapter 6.

Being a Hobbyist Boardgamer

6.1. Introduction

In framing the three perspectives of gamers, gamers and gaming, Björk (2008) notes that focusing entirely on games as artefacts or systems loses sight of the sociality that is inherent in play. Accordingly, in Part II, this thesis considers the boardgamers, the people who *play* hobbyist boardgames. This reflects both Game Studies' interest in the players of games and HCI's focus on understanding the user.

This chapter presents the particular motivations, practices and expertise of the “Boardgame Geek” – the serious leisure hobbyist boardgamer – and examines the “rich, dynamic, and prolific” (Chen, 2013) activities that surround play. Unlike Chapters 4, 5, 7 and 8, this chapter contains new material, although I have previously explored many of the ideas in it at conferences, symposia and workshops. In it, I present a picture of the hobbyist boardgamer – what matters to them, what motivates them, and what sets them apart from others to whom boardgames are a pleasant activity rather than a way of life. Building on the discussion in Chapter 5, I describe the four ‘pillars’ of hobbyist boardgaming and demonstrate how each is important. I show that hobbyist boardgamers have opinions not only about who they are as boardgamers and hobbyists but also about boardgames and the practices of boardgaming, and present their specific hobbyist expertise.

6.1.1. Method

This chapter explores RQ 1 - How do serious leisure boardgame hobbyists describe and define their hobby? – as well as RQ2 – how this is realised in their practices of engaging with the hobby. Like this thesis, it is structured around the trichotomy of Games / Gamers / Gaming (Björk, 2008). It considers what hobbyist boardgamers tell us about *themselves*: their hobbyist expertise, and what they value

about their hobby. It considers what they tell us about *boardgaming*: the different ways they game, the different activities that form part of their practice of gaming. Lastly, it considers what they tell us about *boardgames*, with a focus on materiality and on the domestication of boardgames – the ways in which boardgames are integrated into the hobbyist's home as both artefacts and as a means to express identity. As detailed in Chapter 3, this research is constructionist and interpretivist. It privileges the participant's experience and starts from the data rather than from theory. This chapter describes the meaning that hobbyist boardgaming has for hobbyists.

Like Chapter 5, this chapter is based on Study 2, a series of eleven semi-structured interviews with hobbyist boardgamers, conducted in 2015¹⁴. These interviews aimed to understand the importance of boardgames in the lives of serious hobbyist boardgamers, and the ways in which they engage with and value them.

With a small sample come issues of confidentiality. Distinctive patterns of speech, age and even gaming preferences can be difficult to obscure when reporting data from within a relatively small and well-connected community (Allen & Wiles, 2016, p. 151; Damianakis & Woodford, 2012). To the extent possible, I have attempted to obscure the identity of participants; this, together with other ethical issues, is discussed in Chapter 3. The papers included as Chapters 5 and 7 use numbers rather than names, to highlight the anonymity of my interview participants. In reporting on the same interviews here, I have instead used pseudonyms. These highlight that interviewees were real people with the concerns and interests of a real person.

¹⁴ The method for this study is described in Chapter 3; additional detail is provided in Appendix E.

Table 3 provides an overview of interview participants including pseudonym, age, gender and location. It also indicates whether the interview was conducted in person (face to face) or remotely, by skype or telephone, and provides the total duration of the interview. In two cases, the interview was interrupted and was subsequently resumed.

Table 3 Interviewees - Study 2

ID	Nick	Age	Gender	Location	Mode of interview	Total duration of interview(s)
1	Tom	51	Male	Australia	Face to face	18:51
2	Helen	61	Female	Australia	Face to face	01:12:30 + 00:24:43
3	Diana	43	Female	Australia	Face to face	00:59:49
4	Simon	45	Male	Australia	Face to face	01:50:28
5	Mike	47	Male	USA	Telephone/skype	00:57:45
6	Rick	Est 50	Male	USA	Telephone/skype	01:12:40
7	Sophy	30	Female	Europe	Telephone/skype	56:03
8	Matthew	37	Male	Europe	Telephone/skype	01:39:00
9	Laurel	41	Female	Australia	Telephone/skype	37:56 + 01:26:10
10	Oliver	47.5	Male	Europe	Telephone/skype	01:20:05
11	Eric	41	Male	Australia	Face to face	01:03:11

Following Sanjek (1991), I use the “ethnographic present” tense in describing what participants said about their current practices at the time of the interview. The past tense is used to identify things that they had previously done but no longer did at that time; future and conditional tenses are used for things that will or might occur. This is doubly useful; it clearly illuminates participants’ current practices, highlighting the distinction between past, present and future, and it focuses the discussion on the content of the interviews themselves (Alasuutari et al., 2013, p. 459).

6.2. Gamers on Gamers: What does the hobbyist boardgamer know and enjoy?

This section discusses what it means to be a hobbyist boardgamer. It examines four key questions: the difference between being a boardgame player and a “serious leisure” hobbyist boardgamer; the nature of hobbyist boardgamers’ expertise; the importance of participation; and crossovers between hobbyists and industry. This section extends previous understanding of hobbyist boardgamers and relates this to information about less dedicated or casual boardgame players before focusing on some of the specific practices of the boardgame hobbyist.

Chapter 3 introduced this research as constructionist and interpretivist. This requires a focus on understanding and an acceptance of “multiple participant meanings” (Creswell, 2003, pp. 6, 8-9), which are influenced by the participant’s own

life experience and orientation towards their hobby. Additional detail about interviewees is available in Appendix C, in the form of what Miller (2009) calls “microethnographies”.

6.2.1. Four pillars of hobbyist enjoyment of boardgames

Boardgamers enjoy playing boardgames. They voluntarily invest their leisure time in this activity. This section describes why this is; it shows what they enjoy about playing boardgames and relates this to other work on both hobbyist and casual boardgamers.

Stewart Woods’s survey-based research with members of BoardGameGeek found that their principal enjoyment of play came from social interaction, followed by strategic play and intellectual challenge (Woods, 2012, p. 165). These interviews with hobbyist boardgamers further highlight the importance of these two elements and add the concepts of materiality and variety (see also Chapter 5). Figure 6.1 shows these four elements and relates them to the contexts of games and gaming.

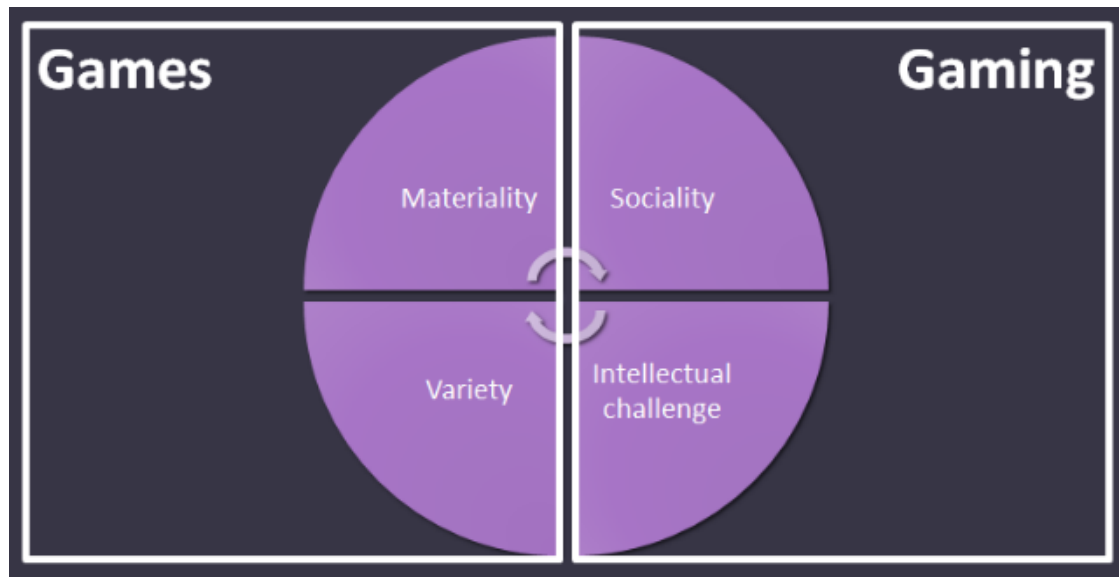


Figure 6.1 The four pillars of boardgamers' enjoyment of boardgames. Two relate to gaming, two to games.

These hobbyist boardgamers value boardgaming as an inherently social activity. They also describe the importance of strategic play and thinking, even when the strategies that they tried are not successful:

I would much rather try something new, different, silly, than try and do my best to win. Now, having done something silly, I do try to play as well as I can, given the premise that I have set for myself. But I am perfectly happy to set a premise that I think is unlikely to be successful.
(Mike)

Thirdly, as discussed in Chapter 5, the game’s materiality– the feel, heft, sound and visual appeal of the pieces and the game box – is significant to participants. Lastly, variety is important – when asked about his favourite game, Eric suggested that it was “Probably [the] last game I played if I liked it,” then went on to name twenty games that he likes. Matthew described his rated games on BoardGameGeek as his “official list” of favourite games and referred to it when asked to name his favourites. Laurel, by contrast, who had the smallest game collection of the people I interviewed, had one clear favourite – “*Lost Cities*¹⁵ ... we went through two decks. We used one up completely until the cards were useless and then went and got a new box.”

These elements – sociality, intellectual challenge, materiality and variety – are the four pillars of hobbyists’ enjoyment of boardgames. Although individuals may prefer one or another, they consistently return to these four dimensions to describe what that they most enjoy about their hobby.

6.2.1.1. Serious hobbyist or casual player¹⁶?

Hobbyist boardgamers’ enjoyment differs from that of casual boardgamers. A study of over 90,000 people who play modern boardgames (Yee, 2017b) suggests that women, men, and people with non-binary genders primarily value different elements of the gaming experience, although all find Accessibility – defined as “Game is easy to learn, accessible to newcomers” (Quantic Foundry, 2017) – to be important. Motivations selected by at least 10% of respondents are shown in

¹⁵ (Knizia, 1999)

¹⁶ This section presents ideas that I first explored in the extended abstract paper “Playing, winning, and the importance of the gamer”, presented at the DiGRA 2017 Boardgame Studies Round Table workshop. I thank the workshop’s participants for their valuable feedback.

Table 4.

Table 4 Primary motivations of people identifying as non-binary, women, men - per Yee (2017b).

Non-binary genders	Accessibility (16.0%), Immersion (14.7%), Social Fun (10.6%), and Cooperation (10.3%)
Women	Accessibility (17.7%), Social Fun (16.1%), Chance (12.2%), Need to Win (11.6%), and Cooperation (10.1%)
Men	Need to Win (12.8%), Discovery (11.4%), Accessibility (10.3%), and Strategy (10.0%)

Although sociality appears here as social fun, discovery (variety), intellectual challenge (strategy) are under-represented and materiality is markedly absent. As I will show, this reveals a key difference between a person who dabbles in boardgames (Stebbins, 2014) and a hobbyist boardgamer.

After BoardGameGeek users including Stewart Woods and myself questioned these broad findings (Yee, 2017a), the responses from around 19,000 users who had supplied their BoardGameGeek user name as part of the data collection process were reanalysed¹⁷. Results from this analysis, shown in Figure 6.2, highlight that the top motivations for hobbyists were Discovery (22.1%), Strategy (9.9%), and Aesthetics (9.1%). Hobbyist boardgamers are less motivated by Accessibility (8.1%) than any of the three gender groupings.

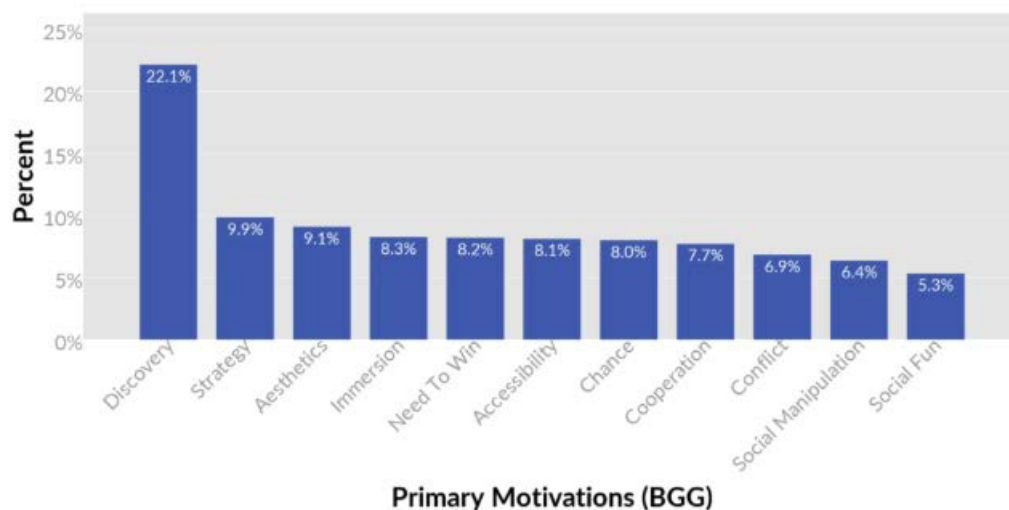


Figure 6.2 Primary motivations (BGG) – from Yee (2017b)

¹⁷ “being a member of BoardGameGeek” is here equated with hobbyist boardgaming.

In presenting this reanalysis, the researchers noted that “neither Strategy nor Aesthetics made it into the top 3 in any of the charts in this blog post, but they did here in the BGG [BoardGameGeek] sample.” (Yee, 2017b). These findings reflect my own and those of Woods (2012) more closely. Whether you consult eleven people (my research), six hundred (Woods, 2012), or ninety thousand (Yee, 2017b), there are broad similarities across responses. In this sense, these three studies provide a form of triangulation for understanding hobbyist boardgamers’ enjoyment. They demonstrate that hobbyists are attracted to “Learn(ing) new and innovative game systems or mechanics” (Variety), “Thinking, Planning, Skill-based, Complex Rules” (Challenge, Strategy) and “Beautiful artwork, components reflect theme” (Materiality) (Quantic Foundry, 2017). I will discuss the surprising absence of sociality (Social Fun) in the next section.

Unlike my own or Woods’s work, this survey provides a benchmark of casual boardgamers’ preferences. As has been noted, “few researchers purposefully include novice players in the research process” (Kirschner & Williams, 2013, p. 5) – novices and casual players are beyond the scope of the research described in this thesis, which focuses on hobbyist boardgamers. Nevertheless, these studies show that hobbyist boardgamers – the “buffs” who evangelise their hobby (Woods, 2012, pp. 140-144) – have quite disparate likes and – potentially – gaming practices – when compared to casual players.

6.2.1.2. Social fun and sociality

Sociality was the most common reported factor for enjoyment of play in Woods’s survey (Woods, 2012, p. 165). In Yee’s survey, “Social Fun” was ranked highly by participants who identified as non-binary (10.6%) and as women (16.1%), although less so by men (6.3%). In the BoardGameGeek data, however, “Social Fun was the lowest motivation (at 5.5%). This led the study’s author to suggest lightheartedly to BoardGameGeek members that “you guys are no fun at all” (Yee, 2017c). In this section, I interrogate this finding and identify some possible causes of this apparent discrepancy. Rejecting out of hand the suggestion that boardgames are not fun, I consider whether these findings can be explained by gender, by divergent preferences between hobbyists and casual boardgamers, or by the construction of the “Social Fun” category and survey instruments.

Are men no fun?

One possible reason for the low rating of Social Fun could be the gender of respondents. Social Fun is the lowest of the eleven motivations for respondents identifying as men, comprising just 6.3% of respondents' primary motivations. Were men's preferences dragging down the fun rating?

This seems unlikely, for two reasons. Firstly, men are among the participants in both my study and Woods (2012), where they clearly identify sociality as a factor of their enjoyment. Secondly, the survey's other results from BoardGameGeek users do not mirror its results from men. For example, 12.8% of men were motivated by the need to win, yet only 8.2% of the BoardGameGeek group had this as their primary motivation. Additionally, Discovery was a primary motivation for 11.4% of men versus 22.4% of the BoardGameGeek sample. Clearly, gender cannot explain this large difference in the results.

Are hobbyists no fun?

A second possible reason for the discrepancy is that the results of the survey are completely accurate; that hobbyist boardgamers, unlike more casual boardgamers, do not value "Social Fun". Preliminary results from a survey investigating the motivations of 1038 BoardGameGeek users (Kosa & Spronck, 2018) appear to add weight to this theory. Building on studies of videogame players' motivations, this survey explores the reliability of 14 different dimensions of motivation. The findings show that half of these factors are sufficiently reliable for further analysis. The authors note with some surprise that Socializing is not amongst these.

This is not what hobbyist boardgamers say. Sociality was a key theme in interviews. Sophy, for example, commented that "With boardgames, I really enjoy the social aspect of it". Similarly, Oliver reflects on the games that his local group enjoys: "We do like *7 Wonders*¹⁸, as well, because you have such a laugh when we play it. There's lot of banter that goes with these games".

¹⁸ (Bauza, 2010a)

Although these studies (Kosa & Spronck, 2018; Yee, 2017b) raise questions about the role of sociality as a motivator of play, it would be wrong to say that hobbyist boardgamers do not value it. Indeed, Kosa and Spronck (2018) highlight this not as a novel finding but as an indicator of a potential problem with their survey instrument “as we surmise that socializing is at the core of the attraction of tabletop games.” (Kosa & Spronck, 2018, p. 2). A failure to recognise the importance of sociality would directly contradict my participants’ comments that one of the things they enjoy most about boardgaming is the social contact.

Is fun no fun?

If the differences in rating of sociality are not explained by gender or by hobbyist/casual orientation, a further consideration is whether these researchers are actually measuring the same thing when they talk about “sociality”, “socializing, and “social fun”. This offers the most compelling explanation for the apparent discrepancy.

Boardgames are a regular feature of Rick’s family get-togethers, where he plays people from different generations of his family:

Thursday nights we have dinner at my parents’ ... and I try to bring games that can accommodate a lot of people, because I’ll play with my wife, with my mom - and mom’s in her 80s - she still likes to play games - my sister in law, my boys. ... So we have sometimes 4 or 5, sometimes it goes up to 8 or 9, depends who’s there that night and it’s just great that we get together once a week, socialise and meet, have dinner - a different kind of gaming than my game on Tuesday nights.

I coded responses like this, as well as more direct comments like Sophy’s “I really enjoy the social aspect of it” as reflective of the sociality that hobbyist boardgamers enjoy in gaming. This reflects a broad approach to sociality that values playing boardgames as “a great activity to be doing with like-minded people” (Helen). Mike provides a concrete example

I was on a business trip last week that took me to California, among other places. And while I was in California, [I] got together with a few local gamers that I knew, two different evenings, and each evening, [we] played a couple games but probably spent at least as much time talking as we did playing games.

Although Kosa and Spronck (2018) do not clarify what they mean by socializing, their separate “relationships” category suggests a narrow definition.

Similarly, Yee's study defines "Social fun" as "Lighthearted fun, laughter, chat, social interaction" (Quantic Foundry, 2017). This focuses on a very specific form of enjoyment and excludes the other forms of sociality that interviewees describe and value, particularly spending time with family or friends. It evokes Huizinga's contention that more deterministic games leave little room for "the merry play-mood" (Huizinga, 1950 [1938], p. 11). This difference in the way that players view the game has been demonstrated for *Chess*: "while serious players put a lot of emphasis on strict adherence to the rules, quiet, hard work, and competition, recreational players take these issues more lightly." (Puddephatt, 2005, p. 301). Hobbyist boardgamers recognise and value that boardgames are *already* social, even before the chatting begins.

Sociality is fun

Although casual leisure is purely concerned with fun, serious leisure extends beyond fun to issues of lifestyle and identity (Alasuutari et al., 2013, p. 460; Stebbins, 2012, p. 85). Nevertheless, sociality is clearly an important source of enjoyment to hobbyist boardgamers as well as to the other groups identified by the Quantic Foundry survey (Yee, 2017b). Hobbyist boardgaming is a highly social and sociable experience, although this is not recognised by the surveys that I have described. The many different forms of sociality and social contact that are important to hobbyists do not only include noisy laughter and chatter but also incorporate quiet and introspective practices and even just being in the same room as other hobbyist boardgamers.

6.2.2. Hobbyist expertise

In Section 2.6.2.4, I introduced hobbyist expertise. In this section, I describe its manifestation in hobbyist boardgaming, where we see it in the transfer of skills from one game to another (Chen, 2013) and in the identification of those key similarities that can be leveraged by a knowledgeable player.

In understanding hobbyist boardgamers' expertise, it is necessary to distinguish between *domain expertise* of the type associated with serious leisure – the hobbyist's broad and specific knowledge of boardgaming – and the *expert ability* of the professional *Bridge*, *Chess* or *Go* player. Boardgamers do not need to be good at playing boardgames to enjoy the other practices that are part of being a boardgamer, because

the hobby of boardgaming is about more than just playing the games; as I showed in Chapter 2, it is about participating in a community of hobbyist boardgamers. Unlike Bobby Fischer or Park Ji-eun, champion players of *Chess* and *Baduk* (Go), the hobbyist boardgamer's expertise takes a different form. In this section, I will consider the importance of the shared repertoire, gaming literacies and gaming capital, as well as trajectories of serious leisure involvement and personal histories of gaming.

6.2.2.1. Shared repertoire

In boardgaming, hobbyist expertise frequently includes the memory of the early days of the modern hobby – a knowledge not only of the games, but of the events and activities that were important or influential for the hobbyist community. There is a specialised language – boardgamers speak of ‘worker placement games’, ‘rondels’, ‘Kramer tracks’, ‘Ameritrash’, ‘sprues’ and ‘*Siedler*’ with no need for further elaboration¹⁹. It is assumed that other boardgamers will speak – or at least understand – the same shared shorthand language, which marks the speaker as a competent member of the community. In Chapter 3, I showed that it took Mike nearly 350 words to explain the meaning of the simple expression “18xx game”. Similarly, Matthew explains the game *Caylus* (Attia, 2005) as using a particular mechanism, then explains the term:

Caylus uses a worker placement mechanism. It was one of the first games that use that. That means that there are a number of actions

¹⁹ In *worker placement games*, players use their ‘workers’ (pawns) to select specific actions. *Rondel games* were popularized by Mac Gerdts with *Antike* (Gerdts, 2005). In *Rondel* games, players’ pawns move around a segmented circular ‘rondel’. Each segment allows a particular action, but movement limitations restrict players’ choice of action on any given turn. *Kramer tracks* (Eggert, 2006) are scoring tracks which do not otherwise constitute part of the gameplay and sit around the outside of the board, as in *Ticket to Ride* (Moon, 2004). The first game to use this layout was *Heimlich & Co.* (Kramer, 1984). “*Ameritrash*”, or *American-style*, games feature high and direct interaction between players, are highly thematic, and feature modelled pieces and artistic boards. *Sprues* are the cardboard surrounds on a sheet of tiles, which are left behind after the tiles have been punched. *Siedler* – more fully, *Die Siedler von Catan* – is the German name of Klaus Teuber’s *The Settlers of Catan* (Teuber, 1995), frequently cited as the game which brought modern European-style games to the masses. Many older English-speaking gamers use the shorthand *Siedler*, rather than *Settlers* or *Catan*, to show that they were a part of the hobbyist community before the game became available in English.

available and each player has a number of workers, hence, worker placements. Each turn you are required to play one of your workers on one of those actions. When everybody is done placing their workers, those actions are executed.

These shorthand expressions and in jokes communicate more than their overt meaning; they communicate group membership and shared culture and history. You had to be on BoardGameGeek in 2007 to understand Yahoo Boots (Agaria, 2007), or to know why it was important to solve the thousand-year old mystery of four-player chess (McHarg, 2017) - “A joke only 0.5% of BGG will get” but, nevertheless, “a good joke”. Understanding them demonstrates that hobbyist expertise extends not only to knowledge about games and events but also to personal histories of the hobbyist community.

6.2.2.2. Gaming literacies

Of course, hobbyists are not just knowledgeable about the practices and language surrounding games, they are also knowledgeable about the games themselves. Oliver’s description of his enjoyment of *Lewis and Clark* (Chaboussit, 2013) shows his interest in the underlying mechanisms and systems of a game and the intellectual challenge that that offers:

it's got that worker placement in the middle but I love the card management bit, the fact that everybody has their own ... It's like a relative game, your turn, your round if you like, before you reset your cards is relative to everybody else's. It's not a fixed round for everybody. Yours might be long or short compared to everybody else's. I love the idea that sometimes long rounds that you have are brilliant and it'll help you win. Sometimes, you want lots of little, short rounds. It's very clever mechanically.

Tom, meanwhile, describes the appeal of playing with other knowledgeable hobbyists as broadening the variety of games as well as the quality of the interaction.

With other more serious gamers, they could say, why don't we play an auction game set in ancient Egypt, and we could come up with at least a couple of games that fit that type or category.

The value of these literacies manifests itself when we consider the importance of variety to hobbyist boardgamers. Even among experts, it is common to teach and learn new games; with thousands of new games published each year, it is not only members of “The Cult of the New,” a term used to describe people who are constantly

chasing the latest new game, who are teaching and learning games. In boardgaming, these procedural literacies (Bogost, 2008; Walsh & Apperley, 2009) may be represented in the use of shorthand terms and by reference to other games with similar mechanisms for play or scoring. For example, the game *Machi Koro* (Suganuma, 2012) can be described as “like *Dominion* meets *Settlers*”²⁰. Such references reduce the cognitive cost of engaging with the variety of games that hobbyists value so highly.

6.2.2.3. Gaming capital

More than a specialised language, boardgamers’ hobbyist expertise encompasses cultural knowledge of the institutions of gaming. These institutions include not only the games and their mechanisms, but also the game designers (often known – like supermodels – by a single name) and publishers, the events and even the personalities of the gaming world. Hobbyists gain gaming capital (Consalvo, 2007; Walsh & Apperley, 2009) by being on first name terms with designers, sharing stories about when they last saw them, or photos with them. Some have games signed and personalised; others prefer not to mark or ‘damage’ their games. Events like *Spiel* (“Essen”) and *Gen Con* are seen to have their own character, which is understood simply by reference to the event. The expert recognises this and understands the nuance of the language and concepts integral to the boardgaming hobby.

6.2.2.4. Trajectories of serious leisure

In Chapter 2, I discussed the trajectories of knowledge accumulation and behavioural orientation that form part of the serious leisure hobbyist experience. These trajectories are found in all forms of serious leisure, and are explicitly plural (Clarke & Star, 2008, p. 119). There is more than one way to be a boardgame player, just

²⁰ This comparison combines the importance of di(c)e rolls in generating resources (as in *The Settlers of Catan* (Teuber, 1995)) with the importance of building and curating a set of cards (*Dominion* (Vaccarino, 2008)). To a similarly knowledgeable listener, this gives a sense of how the game might be expected to play out, shortening – or at least easing – the learning process. Arguably more importantly, it demonstrates the speaker’s insider knowledge or boardgaming capital, performing her identity as someone with hobbyist expertise. Common vocabulary and experience allows for easy, shorthand explanations and a base of shared understanding.

as there is more than one way to be a rubber duck collector (Lee & Trace, 2009), a home brewer (Duarte Alonso, Alexander, & O'Brien, 2018), a barbershop singer (Nash & Nash, 2016), a quilter (Stalp, 2006), a gourmet cook (Hartel, 2010), or a shag dancer (C. A. Brown, 2007). There are trajectories of skills and expertise, trajectories of gaming, trajectories of hobby participation, and trajectories of volunteering. Of these, participants primarily discussed their personal histories of playing boardgames, which leads into their hobby participation, but others talked about the new activities that they have become involved with through boardgaming.

Several interviewees have connections to the boardgame industry as well as to the hobby. In most cases, these are to designers or smaller publishers. Self-publishing or hobby publishing represents a significant part of the hobby, reflecting the idea that making games is an element of gaming literacy (Zagal, 2010) and therefore of hobbyist participation (see Stebbins, 2014), and demonstrating the value of "devotee work" (Stebbins, 2014, pp. 14-15).

Tom, for example, does voluntary, unpaid work as a local distributor for friends in Europe who run a small publishing company, and acts as a playtester for others. Mike extends this crossover between boardgamer and industry, having designed several published boardgames. He remains, however, primarily a hobbyist in his participation and aspirations, and has not published a game in six years. Oliver, also a boardgame designer, has taken another approach, becoming a publisher himself. He describes the excitement of seeing his game for the first time in much the same way as he describes opening any new game:

The whole thing physically being there in front of me just reinforced that this was a real thing. It was actually happening. It wasn't a dream. ... to see something there and you think, "This is great!" Physically there, and you open it up and very reverently you get that little box fart and you lift it up. You're punching things. You're unwrapping the cellophane around the deck of cards. You're pushing the wooden cubes and goodies around the box. It's all very lovely. You know how you open a new book? When you get a nice edition of a book and you open it up, the smell of the paper ...

This crossover to industry – to publishing and to designing games – is an extension of hobbyists' leisure careers, rather than a separate activity. The excitement, joy and wonder that hobbyists bring to boardgames continues even as they embrace this

devotee work, ensuring that even those who step away from it can still remain a devoted hobbyist boardgamer.

6.2.2.5. Personal histories of gaming

Although all participants identified as boardgamers, many referred to other types of gaming. In this section, I discuss the personal histories of their gaming “leisure careers” (Stebbins, 2014). In places, these point to the trajectories of their leisure careers, but they are also deeply connected to other life events.

Several participants, particularly those aged in their late 40s or early 50s, present their gaming history as an exploration of ever-new emerging styles of game. Rick, Mike and Tom were born in the early 1960s; they were young teenagers when *Dungeons and Dragons* (Gygax & Arneson, 1973) was released and were older still before the ubiquity of the home computer or console gaming system. Tom, for example, was a role-playing game enthusiast before moving to boardgames:

I used to be much more into roleplaying before we had children and then, suddenly there was less time for more involved things like that, so games that had shorter periods or could be completed in shorter times became more prominent in our gaming life.

He notes that “role-playing games didn’t exist until the mid-70s, so before then I was into more generic mass-market boardgames and war-games”; he started playing *Dungeons and Dragons* in 1975 or ’76. Although these days Tom identifies as a boardgamer, he has kept his old role-playing games and wargames and counts the wargames as part of his total of “about a thousand boardgames”.

Almost without exception, participants described a multitude of happy memories of childhood gaming, often with family. Eric remembers playing *Monopoly* (Magie & Darrow, 1933) as well as some early computer games before he was ten; Laurel, Matthew, Tom and Eric talked about gaming with school friends; Helen played Chess, Checkers and mass-market games like *Careers* (J. C. Brown, 1955) with her extended family; and many participants played games like *Gin Rummy* and *Scrabble* (Butts, 1948) with their mothers or grandparents. Simon remembers boardgames as a feature of family holidays: “We used to play a lot of boardgames [at our holiday house]. This is the 1970s, television reception was terrible, so I can remember playing a lot of games.”

Although some mentioned siblings, others seemed to play more with adults than with other children. In particular, Sophy, Oliver, Tom and Simon talked about memories of their grandparents – Tom played 500 with his grandmother, and Simon remembers watching his grandmother and her friends play Mah-jong. Oliver played games like *Risk* (Lamorisse & Levin, 1959) and *Diplomacy* (Calhamer, 1959) with his grandfather, and Sophy's grandfather taught her to play Gin Rummy, Poker and Pinochle, using matches as stakes: “[At] about four years old I would be sitting in their lap on their team and helping pick what cards to play and looking for patterns.” For Laurel, artefacts sustain and reflect the importance of these memories:

I remember duels to the death over bloody *Cluedo*²¹ but we've still got grandma's *Cluedo* box in the cupboard with the original piece of rope instead of a plastic piece of rope like they're make now. It had actual rope in it, a string. You still got that, it's a treasured family memento because of how often it was handed around. They get a psychological weight.

Many subsequently experienced a waning of their interest before they returned to gaming. Eric stopped playing boardgames after high school, preferring computer games until he (re-) encountered the boardgaming hobby after an international move. Similarly, Mike – who moved around within the USA for college and, afterwards, for professional reasons “really just didn't find a lot of time for any games in college. After college, [it] took a while before I found a group locally.” This was not universal, however – Tom points out that he “never stopped” playing. “I know some people did or other people did, or do, um, I kept on going, right through Uni, I got involved in running a roleplaying games convention, a lot of my social group were gamers.” Laurel bluntly describes tensions around gaming following the birth of her child, which reflect the gendering of household and affective labour as well as the demands placed on new parents (see Chapter 7):

[friends] would come around for 8 hour days of gaming and I would be ... time to feed the baby and clean the house and hubby would be saying to me, have you made the roast lamb for lunch and are you going to make chocolate cookies this afternoon, and I was like fuck off. No, no I'm not going to do those things. No, I don't have 8, 12 hours on a weekend on top of [work] and on top of parenting.

²¹ (Pratt & Pratt, 1944)

Others perceive a societal expectation that play belongs to childhood. Helen played games as a child but found that as she grew older it became difficult to find people to play with. This may also have been due to the types of games that were available to her – “people didn’t want to play *Monopoly* (Magie & Darrow, 1933). I just didn’t know that other games existed.” She played cards with a friend’s family and *Cluedo* (Pratt & Pratt, 1944) and *Scrabble* (Butts, 1948) with friends in their late 30s or early 40s, but failed to generate interest in further exploration of boardgames – “they were all too busy learning about wine and – you know - doing other things - grown-up things.” It was only when she moved to a new country and searched for *Cluedo* meetup groups as a way of meeting new people that she instead found a group playing *The Settlers of Catan* (Teuber, 1995) “and discovered the modern boardgaming hobby.

For Helen, modern boardgames were a revelation and a pathway to new human contact. Her comments reflect the forms of sociality that hobbyist boardgamers value – spending time with “people who like the same things that I like” is automatically a social experience for her, and boardgames were the pathway to this. She doesn’t need laughter and jokes to feel that she is having a valuable and enjoyable social experience. She rejects positioning of boardgaming as an intellectual exercise and sees it rather a means of meeting new people and making new friends “And now ... I’m not the only one – I’ve found a whole lot of people who like the same things that I like and it’s oh! Oh!”

Although several interviewees stopped playing games for a while, generally in young adulthood as they were establishing careers, there is a sense that this was due to lack of time and opportunity rather than to lack of interest or a sudden and passionate aversion to games. In Chapter 7, I explore one possible reason for a reduced interest in games: the birth of a child.

6.2.3. The importance of participation

In this section, I explore the importance of participation to hobbyist boardgamers. I show that hobbyist participation manifests a “lusory attitude” (Suits, 2006) and concern for the social experience of all players rather than a focus on victory.

You should play a game to win but it doesn't matter. If you feel at the end like you've run the race, that's fantastic. (Oliver)

In fact, interviewees are almost universal in preferring to avoid people who they see as more focused on victory or on external factors than on playing the game.

6.2.3.1. The intrinsic value of participation

Passionate identification with a hobby and with the perceived benefits of hobbies in general is a hallmark of “the systematic pursuit of a hobbyist, amateur, or volunteer activity” (Stebbins, 2014, p. 2), and, therefore, of the “serious leisure practitioner” (Stebbins, 2012). The hobbyist is focused on the intrinsic rewards of participation, rather than on some perceived external or instrumental reward.

Simon expands on his sense of ‘being a gamer’ in passionate detail. He feels that, although the gaming hobby is perhaps uncommon, having a hobby is not itself unusual. “If I wasn’t spending my time like this on gaming, I think that I would be spending my time [exploring other interests]” (Simon). He deplores what he sees as a tendency for people to apologise for having hobbies, when he sees them as something to be celebrated, a way to “refine and redefine the world in terms of the things that give us pleasure”:

without feeling defensive about it, I don’t regard my gaming as being something that I’m obsessed over. It’s something where I have expertise and the use of expertise is in itself, obviously, rewarding. This is what I’m good at, this is what I’m knowledgeable about, therefore I do it. And if it were leadlighting, then that’s what I’d be spending my time doing and I’d have little cuts all over my fingers.

This dedication to and espousing of the benefits of hobbies is nothing new – writing in 1942, Menninger (1942, p. 128) noted that:

There seems little doubt as to the beneficial effect of a hobby on the mental health of the individual, though it cannot be proved that the hobby may not be the result of good mental health rather than the cause.

The unique appeal of engaging in a hobby arises from its “very distinct and sharp difference in the type of this activity, as contrasted to ... vocational interest” (Menninger, 1942, p. 123). It is notable and significant that this description, like Stebbins’s constructions of serious leisure, focuses on the intrinsic rewards of

participation – enjoyment and satisfaction, as opposed to economic rewards. Moreover, it foreshadows later interest in the “frivolity” of play (Sutton-Smith, 1997).

6.2.3.2. It is the goal that is important, not the winning

In Yee’s survey (Yee, 2017b), “Need to win” was a common primary motivation for both women and men, however hobbyist boardgamers value participation above victory. In describing his favourite game, *Agricola*, Oliver explains that “It’s a game where I don’t care if I come last or if I come first. I just love the experience of it.”

Even Simon, who acknowledges the appeal of victory – “I play to win always. I find winning important” – adds:

I love the narrative that [two player war games] provide ... any game - even the old *SPI baseball*²² game - provided you with a real sense of story, of he did this then I did that, then we did the following and this happened and that happened and then it rained on the battlefield or on the baseball diamond or whatever it might be - and at the end of it, win, lose, draw, you have a sense of having told a story to each other.

Despite his avowed desire to win, Simon eloquently describes the importance of the game’s narrative. Similarly, Mike notes that “I don’t care whether I’ve won or not. It’s the experience of playing the game that I like”. Eric has somewhat ambivalent feelings about winning:

I guess I try to play to win but statistically it’s impossible to win all of them or it would be probably boring and I’ve got the feeling I lose more than I should ... Statistically speaking, I don’t know. I think as long as the game keeps me interested that’s fine but sometimes it can be frustrating knowing I think I’ve done all the right moves and yet I’m doing very badly at some games. So I either should try again and try to get more tips or I just abandon games. I don’t know if it’s relevant ... This friend has played *Race for the Galaxy*²³ on the computer hundreds of times and just playing against him means he’ll get half ... Double my score every time. Is there any point in playing anymore but then sometimes, I like to play it again ... Then I’ll just say, Mark, if I get half your score I win.

These quotes echo the findings that players of the tabletop game *Warhammer 40,000*²⁴ (*W40K*) construct different “personal victory narratives” (Harrop, Carter, & Gibbs,

²² (Berg, 1980)

²³ (Lehmann, 2007)

²⁴ (Priestley, 1987)

2013). Even in a tournament setting, there are overt rewards for sporting behaviour and army painting, as well as for theme or “fluff”. The authors note that “*W4oK* as a strategy game provides players with a framework for finding positive experiences in loss through the value of their strategic play, a value separate from necessarily winning the match (Harrop et al., 2013, p. 7). To the hobbyist boardgamer, the simple act of getting a beloved game to the table is already, in some sense, a victory.

Few of the hobbyist boardgamers that I interviewed even mentioned winning. The only two who discussed overt enjoyment of winning – Oliver and Simon – came back to statements of the type captured in an aphorism attributed to designer Reiner Knizia and embraced by hobbyist boardgamers, “When playing a game, the goal is to win, but it is the goal that is important, not the winning”. A failure to *try* to win can break the game – but there is no shame in failing to *actually* win. Playing the game – participating – is more important than winning it.

6.2.3.3. You can be too competitive

Given this emphasis on play over winning, it is not surprising that interviewees identify “some people” as the element of the hobby that they don’t enjoy. They comment that playing with people “whose whole goal is to wipe the floor with everyone around them” (Diana), and “who like to win at all costs, or get upset when they don’t win” (Rick) is not an enjoyable experience for them. Oliver singles out theorycrafting (see Chapter 4) as a practice he particularly dislikes because it interrupts the diversity and variety that he values in boardgames:

for me, that kind of takes away the poetry of it all really. You can love a sonnet but if you take it to an English A-level class and get them to bisect exactly what it all means, somehow you've taken away that spontaneous feeling that you had when you first heard it. Really, it's not ... Card A may well be more efficient than Card B but it depends who plays it, and it all depends when they play it and if it's played at all. Part of the joy is that people have conflicting ... You say to a group of gamers, five players are on the table, "Which card out of these seven is the most powerful *Agricola* card?" You get seven different answers, or five different answers. You can argue about it for the rest of the night. Everybody will be right and everybody will be wrong. I think over-analysing it, spoils it. It just takes away the poetry of it, really, what makes it enjoyable.

Puddephatt (2008) has examined the practices of serious leisure hobbyist Chess players, whose behaviour and focus is very different. He describes devotees whose “time is so monopolized that he or she is precluded from participating effectively in other social spheres, such as education, work or family.” (Puddephatt, 2008, p. 160). His description of players includes one who takes a Chess book with him to the toilet, and others who structure their work day around the study of Chess problems, who strain their family and social commitments in favour of Chess engagement (Puddephatt, 2008) and to whom status and ranking matter more than common courtesy:

You know, in the club, they are so superior and important compared to the rest of us. Greg, I swear to god, pretends he doesn't know who I am. He has stopped me to ask my name about five times. I say to him, 'I am Fred Perdue' – I am the president of the goddamned club! But, since I am a lower-rated player, no, he doesn't even know my name. (Puddephatt, 2005)

To these players, the answer to ‘how are you’ may be an assessment not of their health but of their current rating. In the world of Chess, “The status gained inside the club is not based on occupational status or cultural capital ... but is based almost exclusively on chess skill.” (Puddephatt, 2008, p. 166). Victory is a measure of skill, and skill is the focus of the hobby.

Such people are unpleasant or difficult opponents who Helen will try to avoid. Laurel also prefers to avoid highly competitive play; her memories of play with her father contributed to her strong preference for more cooperative styles of gaming. She identified his overwhelming desire to win – even against an eight-year-old – as “awful”:

I used to play *Canasta* with my dad and he was awful because he would beat you horribly. The point of the game was to win, and he was going to win, and his ego of winning ... it didn't matter that you were an eight-year-old kid. You learned to play or be played. ... I got a bit leery of competition like that, really aggressive competition. I think that was what I really enjoyed about role playing was the cooperative nature of it.

Tom's father stopped playing Chess once Tom could beat him. Both Laurel and Tom see this as poor gamesmanship; these examples are presented as criticism of their fathers' parenting skills. Hobbyist boardgamers value knowing how to lose as much as knowing how to win.

Helen's rejection of boardgame tournaments because of what she sees as an over-emphasis on winning is an explicit rejection of the behaviours that Puddephatt (2005, 2008) describes. For her, maintaining the social environment of the game takes precedence over winning – and even over strict compliance with the game's rules:

So there's the people who don't have good social skills, and the only thing they can concentrate on is the game, so they don't want any chitchat – or – helping another player during a heat or a tournament. Following the rules to the letter, no take-backs; all that sort of stuff – that upsets them. So, to me, that just takes a bit of fun out of it.

6.3. Gamers on Gaming

In this section, I discuss the broader practices of hobbyist boardgamers and show that playing games around a table is not the only core practice that they share. I focus on three key activities: online play, other online activities which surround play, and travel. Many boardgamers see travel as part of their hobby, enabling play and connection to the hobbyist community (and sometimes to the boardgame industry). Others embrace a range of digital practices including online play, and community participation occurs both face to face and online. Tracking and quantifying plays has intrinsic value to the player as a record of their involvement in the hobby but may also be presented to others to demonstrate that engagement.

6.3.1. Online play

Several interviewees described playing games online as well as offline, either to save time or to fill in time that would otherwise be wasted. Diana and Simon, however, described feeling pressured by the need to keep up with the online games that they were playing. In Chapter 4, I describe these digitised games as a form of boardgame, and in Chapter 7, I show that playing online boardgames can be a substitute for face to face gaming when people are unable to leave their home or attend gaming events.

Diana is a prolific player of online boardgames, having played turn-based boardgames online as well as on her iOS device. She stopped playing online games because

there's not enough time in the day to get home and go, oh I'm just going to have my turns now, and then I'm going to have my turns and somewhere in there I've got to exercise and get dinner and spend time

with the kid – you know, spend time with [my partner] and all that – there’s just not enough hours in the day.

Nevertheless, she misses playing those games. She has continued to play the iOS games for reasons of what she terms “portability”: “my iPad goes everywhere with me, if I’m in the back of a really boring meeting I can sit and take my turns.” She notes differences between playing the iOS game and its boardgame counterpart and feels that the turn-based online play is more representative of the boardgame experience – “you still have to know how a game scores, whereas on the iOS implementations I found you don’t need to know as much.” She notes that in some cases, she “can just sort of play [the iOS game] as a random activity,” “participating in a game without actively engaging my brain,” but remains conscious of the time commitment that the games require and the potential for them to generate family conflict:

I did have 6 pages of *Ascension*²⁵ turns, which is 36 games on the go all the time, so I’ve cut down to 3 ... And that was part of me trying to reclaim my time. Because it’s just too easy to get home and sit down and you have your turn and an hour and a half later, you’re done. And you go well hang on, I wanted to read a book ... or [my partner] will be sitting there going, ‘Will you stop having your turns?’

Diana’s comments here reflect broad social concerns about screen time, as well as the types of social contact that she values and her perception of screen time as reducing face-to-face engagement. She feels that her extensive engagement with online games redirects her attention away from her partner and child when she is at home, so she has reduced that even though she would have liked to continue. Meanwhile, however, she identifies iOS games – which she plays on her tablet – as a useful distraction for those times when she does *not* value the face-to-face experience – particularly in “boring meetings”. Tom, by contrast, tends to actively make time to play games on his tablet – which he bought for gaming – prioritising it as a form of social contact with far-flung friends. He frequently plays games with Diana and her partner, who live in a different state and who he typically sees – and games with – two or three times a year at gaming conventions. Hobbyist boardgamers generally choose digitised boardgames at times when a boardgame or opponent is not available, rather than in situations where it might be possible to play face to face.

²⁵ (Fiorillo & Gary, 2010)

6.3.2. “We travel for games”: Travel as a form of hobbyist participation

The international nature of the hobby, as well as its inherent sociality, also encourages travel. Major events attract large numbers of attendees. *Gen Con*, held annually in Indiana, USA and established in 1968 by E. Gary Gygax (later of *Dungeons and Dragons* fame), is one of the largest games conventions in the USA as well as possibly the longest-running. In 2016, *Gen Con* boasted 60,819 attendees. This is eclipsed by the *Spiel* fair, held each October in Essen, Germany. Known to hobbyist boardgamers as *Essen* (after its location), *Spiel* claimed 182,000 attendees in 2017²⁶ and sees the release of around 1,000 new boardgames each year. Attending *Spiel* or *Gen Con* can be a “defining moment” in a boardgamer’s leisure career (Weed & Bull, 2009, p. 95); such events represent an important and valued part of hobbyist boardgaming for many gamers. I discuss this and its implications for family life further in Chapter 7.

There appear to be two broad motivations for travel, which are not exclusive. The first centres on sociality – getting to conventions to see friends and spend time together. This is what Helen discovered in her second visit to the World Boardgaming Championships, what Sophy values in her local convention, and what motivates Mike to travel. In Tom’s description of a family holiday – arranged around a visit to the *Spiel* fair in Essen – the sociality of the fair becomes a catalyst for further activities:

After Essen we travelled around Germany and quite a few of the things were arranged either directly because of or through the gaming in terms of people we visited, because we knew them through gaming – we went up to the Altenburger card factory because of board gaming. So there were places that we went to or people that we went to meet, to catch up with, purely because we’d met them through board gaming. Off the top of my head, I mean, we visited people in Munich and Saarbrücken I think, Altenburg – well, that was Altenburg – Berlin, and so – almost combined sightseeing, museums and also meeting or catching up with people that we’d either met in person or online.

Similarly, Eric describes one of his favourite events, a week at the beach with friends before a large games convention. “I just play all these games for a week ... I try to restrain myself so I probably only play one, two or three games per day.” He sees

²⁶ Note, however, that *Spiel* counts “Turnstile” attendance whilst *Gen Con* claims “unique” attendance.

larger conventions as more oriented around buying games than around play and attends them more to help out at friends' booths than to play.

The second motivation – which we see in Diana's list of events that she would like to attend – is centred on the desire to experience a particular event. *Spiel* is a common goal. Highlighting this, Mike commented that “from the time that I knew about Essen until I actually got there was 15 plus years,” adding:

I specifically went to see the event, all the kind of things that there are other ways to - there are other places to see the people, so I'd rather look for those other opportunities ... It was great, I had a wonderful wonderful time, but as I say, I will be - I really would be shocked if I end up back there any time soon.

In similar findings, (Green & Jones, 2005, p. 177) describe “active” and “passive” sports tourists. Active tourists travel to participate in an activity; passive tourists travel to observe. Although it would be unfair to suggest that boardgamers attending *Spiel* or *Gen Con* are not also playing, play is secondary to the importance of attending these events.

6.3.2.1. Travelling to play

Most of my interviewees regularly travel to attend conventions and games days. Diana sees travel as a means to get to know other boardgamers around Australia. She identifies three conventions that she attends regularly and another that she has previously attended, as well as one that she would like to attend. Similarly, Sophy attends three or four local conventions each year, including one that is by invitation only. She describes the attendees of this event as “friends of friends”; the invitation system is not intended to be exclusive or exclusionary but is designed to offer a small and friendly event with known people.

Helen, who buys relatively few games compared to other interviewees, spends as much of the year as possible travelling to board game conventions in different countries. On one three-month visit to the US, she attended four separate conventions in four different states. She returned to the US six months later to attend two more events, including the World Boardgaming Championships, a US-based event which offers open gaming as well as tournaments in a variety of games, and supports the social interaction that she values so highly:

I didn't know this but everyone else - they just go there to catch up with each other every year! Which I found out the second year! It's not really about the - for a lot of people it's not about the tournaments, it's a chance to catch up with people you met the previous year and play the games that you like to play with people who like playing that game.

Helen compares her gaming expenditure – which includes her travel costs – to other people's (perceived) entertainment and holiday spending. She describes her expenses to attend an interstate convention, for example, as “minute compared to what I see other people spend on a night out on the town.” Like Helen, Sophy points out that this is money that they would otherwise have spent on other forms of holiday: “We just happen to use our vacation time on something that involves playing games with other people.”. Sophy estimates that she and her partner probably spend around A\$15,000 on gaming every year, “with everything included, the buying of games and everything ... using money and travel and food and everything and new games and stuff”. Helen sees her income as enabling her gaming habit. This is similar to Simon, who takes his sense of identity from his gaming hobby rather than from his work, which he presents as a mundane necessity. (See Alasuutari et al., 2013, p. 460; Stebbins, 1982, p. 253).

The balance between what is spent on buying games and what is spent on other hobbyist activities like travel is important. Mike, for example, has cut down on his travel due to other family expenses: “when I started putting my children through college, I had to cut back on certain things.” It is undeniable that travel adds additional costs over and above the cost of the games themselves. Other interviewees, noted that they had curtailed their purchasing of new games and instead chose like Helen to preference travel and related expenses that enable them to engage with other boardgamers rather than purchasing new games. Simon, however, was surprised that I included the cost of his gaming-related travel when I asked about his boardgaming expenses, noting that “I guess it's a cost [but] It's not something that I assess that way.”

6.3.2.2. Travelling to attend

Travelling to a major event like *Spiel* or *Gen Con* is a significant experience for gamers, although it can be problematic for some. Eric would “like to [go to *Spiel*] but I'm not sure I would like it”; Rick prefers to travel with his wife, who he feels would not be interested in the event. Helen attended *Spiel* but found it overwhelming and chose

to spend part of her time in her hotel room, watching BoardGameGeek's live feed from the event.

All of the Europeans that I interviewed were regular attendees at *Spiel*. Sophy, for example, has attended *Spiel* for the past ten years, although she missed a year when she attended a convention in the USA instead. Like many hobbyists, Sophy now spends part of her time at *Spiel* working at a booth.

As is evident from Mike's description of travelling to *Spiel* "specifically ... to see the event", such a visit can take on the character of a pilgrimage. *Spiel* is seen as the home of the gaming hobby in Germany, the birthplace of the modern Eurogame. Attending *Spiel* demonstrates the depth of the hobbyist boardgamer's commitment, particularly when attendance requires international travel. For Australians, for whom a flight to Europe or North America can take more than twenty hours, these events represent a significant commitment of time and money. "We travel for games," Diana says, adding that she and her partner are keen to visit *Spiel* as well as *Gen Con* and other gaming events in the US and UK.

Green and Jones (2005) describe a similar orientation towards the Melbourne Cricket Ground (MCG), "the mecca of Aussie Rules Football" amongst what they term "serious passive sports tourists" (Green & Jones, 2005, p. 177). Further examples among sports tourists include "the amateur golfer travelling to play championship courses abroad" and "the cyclists who complete a single stage of the Tour de France". Similarly, Griffith (2013) describes *capoeiristas*, practitioners of the Afro-Brazilian martial art *capoeira* who travel to Brazil for further training, as apprenticeship pilgrims. Here, visiting Brazil is seen as legitimising their training and practice (Griffith, 2013, pp. 6-7), making it more authentic (Griffith, 2013, p. 2). Like boardgamers visiting *Spiel* or *Gen Con*, tourist *capoeiristas* "exhibit a zeal for visiting Salvador akin to that of religious pilgrims, though their objective is apprenticeship rather than worship." (Griffith, 2013, p. 2). When travel takes on the character of a pilgrimage, it appears to be tied closely to performance of identity as a boardgamer, to hobbyist trajectories, and to the accrual of gaming capital.

6.3.3. “Digital Hinterland” practices

Intriguingly, for a community which values – at least to some degree – the offline nature of the hobby, hobbyist boardgaming is surrounded and supported by a range of online activities which we have described as the “digital hinterland” of the hobby²⁷. Just as the hinterland of a port supplies and enriches it, the digital hinterland supports and enriches the hobby of boardgaming. The Internet enables these hinterland “practices that surround offline play but *are not themselves* play” for boardgamers, as it does for other forms of enthusiast – in our review, readers and yarn-crafters²⁸.

I spend a lot of time just reading what people have written around games rather than about games – I’d typically spend at least half an hour a night on average researching a new game or reading about something that I already know about or possibly own - either to get new perspectives on it, or because somebody’s being witty or - what have you. But yeah, quite a lot of time. Did I say 3 hours? (Simon)

We found evidence of five core activities – Researching, Collecting, Cataloguing, Discussing and Tracking – not only on boardgaming sites but also in reading and yarn-crafting communities on the Goodreads and Ravelry websites.



Figure 6.3 The five activities that comprise the Digital Hinterlands

The digital hinterland is not unique to boardgaming but extends across these other traditionally offline pursuits. It is distinct from other observed phenomena that

²⁷ These ideas were previously presented in our paper, Exploring the Digital Hinterland: Internet Practices Surrounding the Pursuit of “Offline” Hobbies, presented at the 18th Annual Conference of the Association of Internet Researchers (AoIR) in Tartu, Estonia, in October 2017. A copy of the paper is included in Appendix H. This section includes several ideas first presented in that paper, and I would like to thank the reviewers as well as conference attendees for their valuable comments and ideas.

²⁸ People who practice knitting, crocheting and other forms of craft (e.g. spinning) with yarn and fibre.

surround hobbyist practices, such as metagaming and para-texts, although it may encompass these activities.

6.3.3.1. Research

Boardgamers spend considerable time researching games, both before they buy them, as part of the process of appropriation (Silverstone et al., 1992), and before they play them, as part of rules learning. Like television fans, they may make the decision to “commit” to a game before they have played it, based on background research activities which include reading reviews and looking at ratings (Alasuutari et al., 2013, p. 469). Helen describes the various (numerous) podcasts that she listens to; Simon notes that he spends ten hours or so each week reading about games, in addition to the time that he spends playing them. Diana invests time in learning games – another form of research. She describes learning to play one game in particular:

The first time we played *Dominant Species*²⁹, [my partner and I] went for a walk - the two of us - that morning - both of us with our separate headphones in and we listened to that How To Play podcast on *Dominant Species*. We sat down - we knew how to play. You know, we knew all the rules, we knew how everything was put together.

Similarly, Eric tries to do his research before he teaches a game: “when I teach I try to read the rules in advance, so I can picture it in my mind beforehand. I don't like reading the rules on the spot. Too painful.” Matthew – who manages the collection of a local game club – takes on a further researching role as he selects games for the club to purchase “so that I could bring in some interesting stuff.” He notes – discussing potentially handing the role on to someone else in the future – that “I'm by now far the most knowledgeable about new games and where I can get them”.

6.3.3.2. Collecting

As described in Chapter 2, the activity of collecting is one form of hobbyists' serious leisure engagement. Section 6.4.1 addresses the spectacle of the game collection. Collecting activities – buying, selling and trading games, as well as associated curation practices – may deepen the hobbyist's knowledge of their hobby. It is a deeply material practice, which links to domestication theory in the ways that the

²⁹ (Jensen, 2010)

boardgamer presents themselves as someone who enjoys, is knowledgeable about, and has broad experience in boardgames. Many gamers sell or trade their older games to fund their hobby and pay for their travel, as well as to manage their collection size to fit the space available in their home. Available space limits the size – and therefore the variety – of the boardgamer’s collection.

Several interviewees talked about their “collection size”, but in the context of a playable collection rather than a static collection of artefacts. Collecting is a dimension of their hobbyist participation rather than an end in itself. When Eric mentions being a collector, it is in passing and is presented as a negative: “I’m probably a bit of a collector as well so I just have too many games and I feel the need to go through them” (Eric). One of his favourite games is *Age of Steam*³⁰, which has a series of expansion map boards: “there’s probably 50 maps now. It’s good for my collector pitch” (Eric). Even so, Eric sees his game collection as something functional that enables more variety in his play. When I asked whether he saw himself “as someone who collects games like people might collect stamps or coins or other things?” he responded:

OK, probably not. I’ve been a stamp collector for a small time and collection for me, I guess, at that time is just ... You get the most of these things and just having them is good ... The goal but now, the main goal is just to try and play them and having this collection ... This amount of games just means I got more choice. Depending on circumstances on how I feel and my friends, I can then have more choice of what to bring to those meetings.

Like Eric, Sophy collects stamps. She notes that she and her partner “have that collector in us which is a bit contagious.” She sees herself as a collector because she is a completist: “When I start collecting a boardgame, I’m like, ‘Oh, but I need everything.’” Like Eric, though, she collects games to *play* them rather than simply to *have* them. These hobbyist boardgamers do not see owning a game collection as an end in itself. Rather, the collection is the tool that enables other activities, like play.

Emphasis on acquisition and variety leads many hobbyist boardgamers to end up with a number of unplayed games. Some, like Mike, Oliver and Eric, actively manage this “I try to go through those other games that I just have and don’t play

³⁰ (M. Wallace, 2002)

much and try to get rid of them.” (Eric). Others, like Tom, see it as preferable to potentially not having access to a game:

There are some that we have collected over the years because they sound interesting, or they’re by somebody whose other games we’ve liked ... I’ve found in the past that there’s things that I’ve liked that I’ve never bothered to get my own copy of and then the person I knew who had a copy moved to another country or moved to another part of Australia and I suddenly couldn’t buy that game any more or play that game any more – so part of the collection size is an aspect of that - if you think you will like it, it’s sometimes worth getting it so it’s available - it might be a year or two before you play it but — some are big and long and thus won’t get played very often.

I return to this tendency in Section 6.4.2, where I will introduce the notion of the “Shelf of Shame” – the place for unplayed, owned boardgames.

6.3.3.3.Cataloguing

Sophy and her partner have a collection of about 800 games and Tom and his wife have about 1,000. Many of the other interviewees have between 300 and 450 games. With games moving in and out of at times very large collections, it is useful to access a catalogue of one’s boardgames.

The collection management utility on BoardGameGeek allows gamers to note information about their own personal copy of a game – when it was bought, for example, and the price that they paid – and link it to other information and ratings stored in BoardGameGeek’s database. Importantly, participants can also share information about their collection with others – for example, providing their (ranked) wishlist to Father Christmas in BoardGameGeek’s Secret Santa program.

None of the people I interviewed described active management processes for cataloguing their collection, although I can see from their profiles on BoardGameGeek that they have inventoried their games. They have created and maintain a catalogue – I have heard Tom describe comparing his “collection” listing on BoardGameGeek to that of his wife, to find games that he may have forgotten to add – but did not describe these practices in any detail during the interview.

6.3.3.4. Discussing

Discussing games is an important tool for building hobbyist expertise and knowledge, as well as for creating and strengthening hobbyist communities. As I showed in Section 6.2.2, serious leisure hobbyists combine hobbyist expertise with community participation. Discussing games serves both of these ends. It allows for knowledge creation and sharing whilst also embracing the cultural capital and shared values of community participation.

Some participants, however, are selective about the degree to which they participate in discussions. Sophy laughs that she participates in discussions through a form of proxy:

I won't just willy nilly just randomly read all threads that are on Board Game Geek ... Usually [my partner] will send me a link and then I'll read it and then I might start following it if it's something that I'm interested in.

Wenger describes the importance of a shared repertoire within a community; it appears that the fact that this shared repertoire belongs to a community may be more important than its mere existence. “The elements of the repertoire ... gain their coherence not in and of themselves as specific activities, symbols, or artifacts, but from the fact that they belong to the practice of a community pursuing an enterprise.” (Wenger, 1998, p. 82) These elements may include

routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice (Wenger, 1998, p. 83)

By developing routines, we make activities invisible; they go unnoticed until attention is drawn to them, and serve as “resources, or assemblages of resources” (A. Strauss, 1993, p. 194) which we can draw upon at will and as required. Within groups, “routines operationalize arrangements, reached by virtue of explicit or tacit agreements between or among actors” (A. Strauss, 1993, p. 195). Similarly, shared language norms may be incomprehensible to an outsider but unremarkable to a participant. This repertoire – or the literacies associated with the repertoire – and its associated set of norms or conventions allow participants to function as competent members of the hobbyist boardgaming community.

6.3.3.5. Tracking and quantifying

Lastly, boardgamers may seek to quantify their participation or presence as a hobbyist boardgamer. Mike, for example, has tracked every game that he has played for over twenty years:

I've been keeping track of my games played since 1996. I have been doing so actually, what got me started doing this was a copy of an old game magazine, *The Game Report*, that was put out by Peter Sarrett, in which he listed folks' games played and I said, oh, I should keep track of that! And I started doing so and this is what, the 20th year, and [I am] continuing to do so. I just have the information in a spreadsheet. All I keep track of is, essentially, [is] how many times I play each game, each year. There's information that I'm just not interested in, like whether I won the game or lost, it just doesn't have any real interest to me. There is information that I'd like to have - who I played with would be interesting - but there's no efficient way to capture that information. And so I just have this giant spreadsheet that I can look at and say, Oh, I've played *Deep Sea Adventure*³¹ 6 times in 2015.

Almost everyone that I interviewed had a sense of how often they played and/or how many games they played. Some, like Mike, use spreadsheets or other tools to track their plays, some used the native BoardGameGeek function. Helen had recently started to use the new "BG Stats" app on her iPhone. Diana and her partner extend this: as well as tracking what games they play themselves, they also track each time that a game from their collection is played (even by other people) - "we have a sheet that says, this is a game from [our] collection, please record how you've played." (Diana). Others, like Sophy, Matthew and Simon, focus on how often they play games, although Matthew has tracked his played games for over ten years. BoardGameGeek offers 'Microbadges' that recognise contributions to the site as well as longevity on the site. These are displayed on a user's profile page and may be appended to their avatar, and act as a visible representation of a user's hobbyist participation.

Many hobbyists are actively pursuing a challenge or target through their play. This is typically an attempt to improve the variety of their gaming by increasing either the breadth of games played (e.g. a goal to play fifty or a hundred (different) games in a year) or the perceived depth of play (for example, a 10x10 challenge would be to play ten games at least ten times each). The popular BG Stats app automatically calculates a

³¹ (Sasaki & Sasaki, 2014)

player's boardgaming "h-index" based on the number of recorded plays of each game. Unlike with academic writing, however, the player has control over their boardgaming h-index. "I am the 10x10 person ... but I want to handpick those ten." (Helen).

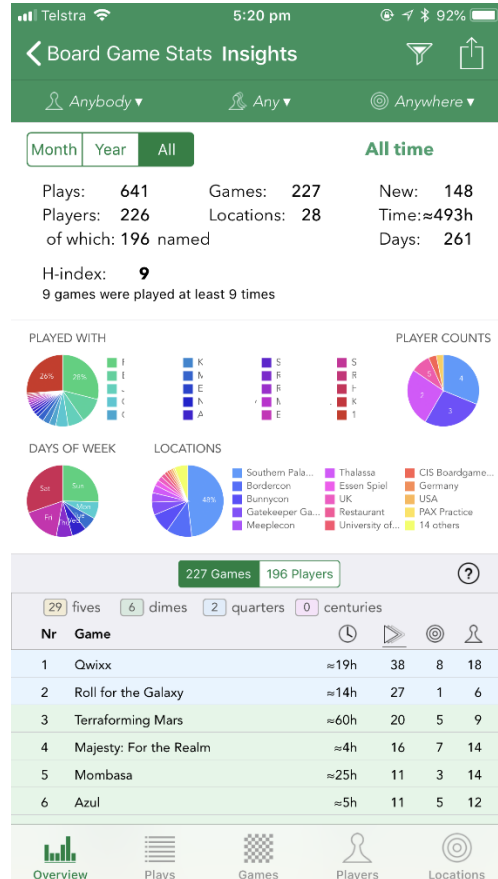


Figure 6.4 A screenshot of the BG Stats app, which I have used since mid 2015. It shows my gaming h-index (9) as well as my "fives", "dimes", and "quarters": games played at least 5, 10, or 25 times.

Several participants have invented challenges for themselves, either short term or over a longer period. Rick enjoys theme-based game selection; he always plays *Rum and Pirates* (Feld, 2006) on September 19th, otherwise known as Talk Like a Pirate Day. Diana successfully completed her 10x10 challenge in 2015. She also easily met her challenge of "a different game for every week of the year," playing 89 unique games in 2015. "Every year we set gaming goals, They're the only resolutions we make," she explains. At the time of our interview, she was working on a new challenge, to learn (from rules, rather than from her partner, who usually teaches new games) and play 5 unplayed games from her collection. Rick's challenge is also aimed at increasing the variety of games he plays:

There was one year I tried to play games from every letter of the alphabet. So I went through the As and Bs in January, the Cs through

Ds and - tried to get as many as I could through the letter game. I think that ran out of steam when I got to Q [laughs]. Not that I don't have Q games with Q, but I just get tired of doing that and I'd show up to game sessions and, "Oh, we must be in M month, here's the game with the M" - you know, but it was fun for a while. But it is - allows you to go through your collection, find out oh, this is a game I haven't played in a while, it is that month, we'll play that one.

Whereas Mike was interested in tracking the number of games he has played – 330 in 2015 – Helen was more interested in tracking the number of people she has played with and had challenged herself to play games every day for a month. She was delighted to have played with 57 different people in twenty days, 26 of whom she had never met before, and five of whom were “newbies” to gaming. Where Helen is unusual in her active pursuit of new opportunities for gaming, Mike is unusual for the length of time that he has tracked his gameplays.

There is wide variety not only in how much interviewees actually play but also in what matters to them and what they track. Despite this variation, the amount that each of them plays would likely be seen as unusual by someone who was not a hobbyist boardgamer. Rick notes that “I just don't have time to play 500 games in a year, that's something I don't ascribe to”.

These participants find an inherent satisfaction in tracking and quantifying participation. This is not something that must be shared with others; statistics and challenges appear to be primarily for the player's own satisfaction. I discussed the BG Stats app with Helen nearly 18 months after our initial interview. She said that she had stopped tracking because she didn't need to do so any more. She had found out what she wanted to learn and didn't feel that there was anything new for her to discover. For her, the appeal of tracking was not intrinsic but was instrumental.

6.4. Gamers on Games

Having considered what hobbyist boardgamers have to say about their own practices and about themselves, in this section, I look at what they say about games. I consider collecting as a fundamentally material practice, then turn attention to storage

of games. I discuss the taking and sharing of “Shelfies”³² – photos of one’s game shelves – as an important activity for boardgamers which reflects their participation, the importance and impact of boardgames’ material form, and the different approaches that gamers take to the domestication of boardgames within the home.

6.4.1. Collecting

Boardgamers’ collections of boardgames are a material manifestation of their interest in variety. Like other possessions, boardgame hobbyists’ unusually large collections seem “to have a material presence commensurate with [their] importance” to their owner; and to represent, in some way, “a collation of [the owner’s] own past” (Miller, 2009, p. 278). Hobbyist collectors ascribe meaning to their collections (Kirk & Sellen, 2010) (S. Snow et al., 2015) (McKenzie et al., 2015) Large collections may also be seen as legitimising an individual’s involvement in the boardgaming hobby, enabling them to critique games and “to commit to [boardgaming] in a new way” (Alasuutari et al., 2013, p. 468). The collection has been achieved through the research and collecting practices of the hobbyist and is testament not only to their present involvement with boardgames but also to the history of that engagement. As well as representing the possibility of future plays and memories of previous plays, game boxes may be signed by designers, or may contain physical reminders of past play, old score sheets or player notes which, together with signs of wear and tear, form use-histories. Building on this idea, “Legacy” style games like *Risk Legacy* (Daviau & Dupuis, 2011), *Pandemic Legacy* (Daviau & Leacock, 2015) and *Charterstone* (Stegmaier, 2017) explicitly build on those past plays to create a customised game with an ongoing storyline that is unique to the group.

As I identified earlier, variety is one of the four pillars of hobbyist boardgaming. This is most often reflected in the size of a hobbyist’s personal collection but is also seen in its depth and diversity. Interviewees had a range of collection sizes and approaches to collecting games, but all were conscious that they had more than the average person – from Laurel who, with her young son, owns about 40 titles “and all

³² I presented some early thoughts on Shelfies at the DiGRA conference in 2017. and at the 4S International conference in Sydney in 2018. The Extended Abstracts are included in Appendix I. I gratefully acknowledge the feedback received from reviewers and attendees.

the 60 extensions of *Carcassonne*” and spends about \$500 a year buying games, through to Tom whose collection encompasses about 1000 games. Some gamers, like Mike and Eric, aim to play most of the games in their collection each year; others retain them out of nostalgia, or in the hope of playing them in the future, when time permits (see Miller, 2009, pp. 46, 81).

Discussions of game collection size and expenditure are frequently characterised by comparison to something else and by limitations. Tom compares his boardgame collection to those of other serious leisure boardgamers: “that would put us in the top 5% or possibly 3 or 4% [on BoardGameGeek.com] in terms of collection size, as it’s called”. Eric, however, tries not to have unplayed games on hand.

Ben Highmore has observed that the middle-class home can be a site of “general eccentricity” (Highmore, 2014, p. 11), full of unexpected surprises that reveal the idiosyncratic habits and pursuits of its residents – in other words, their hobbies and interests. Elsewhere, the fate of a collection of old war games, which the owner’s wife has rejected from their shared home, is described (Miller, 2009, p. 174):

They bore witness to a certain kind of boyish charm and emergent manly interest in things, which was a large part of Rupert’s attraction. ... But the time comes for the putting away of childish things, perhaps in storage for some future child. ... in the meantime, there should be no hint that the adult had not yet fully emerged from the chrysalis. So the war games materials seem destined to move only from attic to attic.

Unlike Rupert, the boardgamers I interviewed had all found space within their home for their game collections. Rather than seeing them as a sign of childishness and immaturity, they embraced them as an important part of their adult life.

6.4.2. Storing games

Diana describes her collection (which she shares with her partner) in terms of the IKEA “Expedit” units of cube-shaped shelves that house and contain it – “we now have 3 4x4s on top of 3 4x2s and the original 4x2 and the 5x5” (see Figure 6.5).

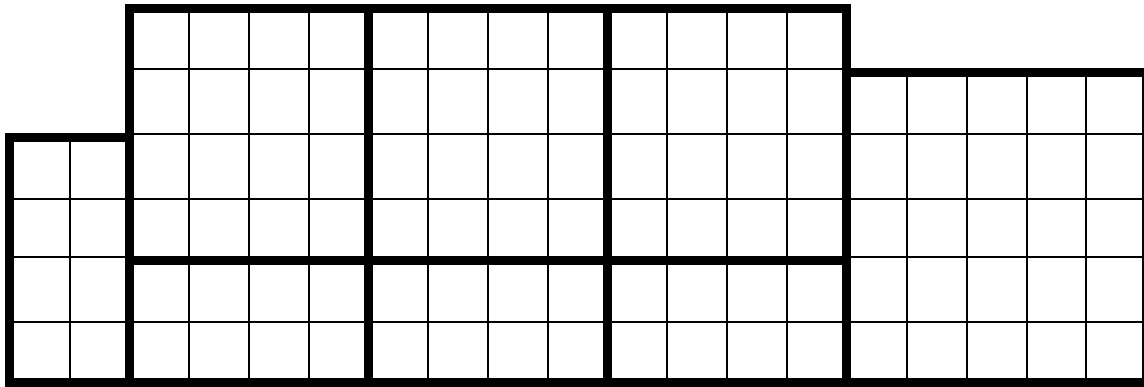


Figure 6.5 Schematic of Diana's game shelves; each small square block measures 33x33 cm. These game shelves would measure around 6.3 metres long and around 2 metres high.

Like her, Oliver has the gamer's holy grail, a dedicated room for his games:

It used to be the dining room but we just gutted it and put shelves all around the room. I always wanted the idea of having a library with books in it, but since my gaming obsession's increased over the years, some of the books have moved out and have been replaced by boardgames.

For Diana and her partner, the big games room “was actually a key reason for choosing the house we have”. In contrast to this abundance, Mike's collection size is curtailed by the available storage space – “sometimes there are hard choices there, but I've never had a case where I've regretted the choice I've made”. Rick's games, likewise, are limited by space in the dining room; he has plans to fit out his basement as a game room but notes wryly that he's had those plans for ten years and they have yet to be realised. Several interviewees described their games “overflowing” the shelves or available space.

Although Oliver has transformed his dining room into a library-cum-game room, Rick, Tom and Simon all reported storing – and playing – games in their dining room.

Are you familiar with *Melee*³³ and *Wizard*³⁴? From Steve Jackson games - Metagaming, it was at the time. My younger brother and I, we played that to death, we'd be at the dining room table going through dungeons and saving maidens and doing whatever it was, mom'd get a chuckle out of that as she passed through the room, as we were playing that one. (Rick)

³³ (Jackson, 1977); see (Arnaudo, 2018, p. 86)

³⁴ (Jackson, 1978)

This repurposing of that space resonates with Highmore's sense that a dining room is perhaps unnecessary for his own family as it "suggests a commitment to formal dining that we just haven't got" (Highmore, 2014, p. 103). Highmore traces the use of dining rooms as hobby space back to at least the late nineteenth-century. (Highmore, 2014, p. 123). Perhaps this is its charm: "A table in a living-dining room can be somewhere for playing *Scrabble* one moment, doing your school homework at another and sitting down for a celebratory banquet the next." (Highmore, 2014, p. 106).

Sophy, Matthew and Simon all discussed their intentions to move to a new home or rebuild their existing one. Although none of them directly identified their game collection as the catalyst for the move, having extra space for games was specifically identified as a definite advantage: "If I'm going to move, then it's going to be a long time before I run out of space again." (Matthew), "We're starting to have trouble, but we're also considering moving and we'll hopefully have more space that will let us set up an actual gaming room" (Sophy). Simon sees his planned game room as both a space to enable play and a way to limit the size – or at least the space requirements – of his collection. "[P]art of the plan is to move or build a new house with a dedicated space for the games and for playing them, and to quarantine them within it". He notes that his home is "littered" with games and other hobby material, to the extent that he and his partner cannot invite people over due to the clutter and sees a game room as a (partial) solution to this problem. Like them, Tom dreams of a game room "if money permitted".

Storing games properly is about respecting and reflecting their importance. In the process of domestication, game storage is both about objectification – adapting the home to accommodate and display the object – and conversion – presenting the object to others as part of the owner's extended self. Game shelves are simultaneously a piece of furniture, a metaphor for the (whole or partial) game collection, and a metaphor for play itself. Thus, gamers may speak of their 'family game shelf' or their 'shelf of shame' – the shelf of unplayed games, often still in their shrink wrap – which is seen as a manifestation of their failure to get those games 'to the table'. 'Shelfies' offer a curated, often idealised, view of the gamer's collection and home environment; they are an end product of the domestication of the owner's boardgames, a cultural redefinition of the games as "owned", which parallels the stages of domestication of ICTs (Silverstone &

Hirsch, 1992). Through Shelfies, boardgamers present their game collections to the world. Although most Shelfies are intentional, at times they may be incidental to another image. These accidental Shelfies are nevertheless pored over by other gamers. In this way, a boardgamer's shelves "serve as "powerful reflections of [their] values and identity"" (De Schutter, Brown, & Vanden Abeele, 2015). The shelves may be functional or beautiful – ideally, they should be both – and open the collections to scrutiny. Sharing Shelfies allows not only the sharer but also the viewer to perform their identity as a boardgamer, even where the Shelfie is not intended for that purpose.



Figure 6.6 A Shelfie, showing part of my game collection

6.5. Conclusion

This chapter has considered what it means to be a hobbyist boardgamer. I have considered boardgaming from the three different perspectives of games, gamers and gaming, looking at what hobbyist boardgamers say about each. I have demonstrated a particular set of values that the hobbyist boardgamer embraces.

In describing the distinct mores and practices of hobbyist boardgamers, I have shown how these values support and develop their preferences. These include a broad

understanding of sociality, and valuing participation, variety and intellectual challenge over winning. I have shown that the pastime of boardgaming is not limited to play but extends to a broad range of practices including, travel, “hinterland” practices that are common to other traditionally offline hobbies, and to the trajectories that these take through the lives of hobbyists. Lastly, I have shown that hobbyist collecting of games is, like playing games, a deeply material practice, embedded in the domestic setting. Opportunities to play games on digital devices are rejected in favour of more social face to face gaming but are embraced in situations where sociality and intellectual challenge are already lacking. I continue this discussion in Chapter 7, which explores one specific situation in detail, describing the strategies that boardgamers adopt to maintain their participation in the hobby even after becoming parents.

Chapter 7.

Finding Time for Tabletop:

Board Game Play and Parenting

7.1. Introduction

This chapter presents the lived experience of hobbyist boardgamers who become parents. Arising from Study 2, it responds to RQ₁ and RQ₂, addressing the ways in which hobbyist boardgamers describe and define their hobby and describing the specific techniques that they use to maintain their hobbyist involvement at a time when their family commitments are increasing in both intensity and in volume. I relate these techniques to the four pillars of hobbyist enjoyment that I discussed in Chapter 6.

Building on the presentation of hobbyist boardgamers in the previous chapter, here I turn attention to a particular subgroup: hobbyist boardgamers who are or who become parents. I discuss strategies that these people use to maintain their commitment to and involvement in their boardgaming hobby even as they negotiate the new demands on their time and money. This desire to stay involved demonstrates the intrinsic importance that the hobby holds for its proponents. I show that this negotiation involves a compromise on one or more of the four pillars of hobbyist boardgaming and discuss the effects of this on their hobbyist participation. Unlike much of the literature on adults' play practices, which focuses on sexual and/or dysfunctional play, this chapter describes a healthy and balanced approach to incorporating play into adult life (A. M. L. Brown & Stenros, 2018, pp. 215-217).

This focus was not something that I specifically set out to achieve, although it was likely influenced by my own interest and experiences as a boardgaming parent.

Although very specific, this chapter serves also as a case study of a group of dedicated boardgamers, revealing some of the nuances of the group behaviours.

7.2. Prior publication

This chapter comprises a prior publication. This paper was first presented in 2015 at the Tampere Game Research Lab's Spring Seminar on "Adult Play". A version was also presented at the Doctoral Colloquium of the School of Computing and Information Systems at The University of Melbourne, where it was awarded a Best Paper award. Subsequently, the paper was selected for publication in a special issue of *Games and Culture* that published five invited papers from the eighteen presented at the Spring Seminar. The paper was peer reviewed prior to acceptance at each stage and was copy edited prior to its publication in *Games and Culture*. I thank the reviewers and attendees at the seminar and colloquium where this was presented as well as commentators Ashley Brown and Jaakko Stenros. A short additional discussion follows the paper, and a full discussion is provided in Chapter 9. Due to the *Games and Culture* editorial style, the word 'boardgames' is separated to 'board games' in the published paper.

7.3. How does this paper contribute to the thesis?

This paper responds to RQ 2, How is serious leisure boardgame hobbyists' conceptualisation of their hobby realised in their practices of engaging with it? It expands understanding of hobbyist boardgamers by focusing on an event in their lives that is often associated with reduced time for hobbies and considering how they adjust their practices to adapt to their changed circumstances.

This paper sheds light on the importance of the four pillars of hobbyist boardgaming. It demonstrates that hobbyists are willing to compromise on one or more of these pillars when faced with the choice of playing or not playing. It also returns attention to digitisation of boardgames and hobbyists' use of digital devices when an opponent is not available. This may take the form of playing a boardgame but is also represented as participation in what I called, in Chapter 6, the Digital Hinterland of hobbyist boardgaming.

7.4. Methods

Like Chapter 6, this paper is based on the series of semi-structured interviews with hobbyist boardgamers that I conducted as part of Study 2. I used thematic analysis to analyse the generated data. A more detailed explanation of the method for this study, including reflections on the interview format and reporting, is included in Appendix E.

7.5. PDF of paper

Article

Finding Time for Tabletop: Board Game Play and Parenting

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Abstract

Hobby board gaming is a serious leisure pastime that entails large commitments of time and energy. When serious hobby board gamers become parents, their opportunities for engaging in the pastime are constrained by their new family responsibilities. Based on an ethnographic study of serious hobby board gamers, we investigate how play is constrained by parenting and how serious board gamers with these responsibilities create opportunities to continue to play board games by negotiating the context, time, location, and medium of play. We also examine how these changes influence the enjoyment players derive from board games across the key dimensions of sociality, intellectual challenge, variety, and materiality.

Keywords

board games, parenting, leisure activities, serious leisure

Introduction

Both digital and tabletop games attract committed aficionados—passionate insiders or serious leisure practitioners who devote seemingly limitless time and energy to their hobby (Stebbins, 2012, p. 70). Such fans are found across the gamut of

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analogue games (Woods, 2012, p. 17): Traditional games like *Chess* have Grand Masters (Murray, 1986); mass market games celebrate the *Monopoly* or *Scrabble* champion (Tostado & Bentley, 2010). Hobby board games are by definition targeted to the hobby board gamers, distinguished by a “degree of enthusiasm for board games” (Woods, 2012, p. 120) that “engenders . . . a desire to pursue the activity beyond the time or the money (if not both) available for it” (Stebbins, 2012, p. 39). Hobby board gamers are not just people who play hobby board games; they are serious board gamers, placing value on “active participation within the hobbyist culture, the acquisition and accumulation of games, and a degree of evangelism for the hobby” (Woods, 2012, p. 120).

In this article, we present findings from a study of serious board gamers. These are people who approach board gaming as a hobby and as a form of serious leisure (Stebbins, 2012). In particular, we examine how adults with various responsibilities negotiate the time and opportunity to continue to engage in the serious pursuit of board games while also managing their other commitments, particularly as parents: “somewhere in there I’ve got to exercise and get dinner and spend time with the kid . . . there’s just not enough hours in the day” (P3). Using data from interviews and online posts, informed by our own personal experiences and observations as researchers, parents, and board gamers, we investigate the ways in which tabletop play is curtailed by the commitments of parenting as well as the strategies that parents use to carve out time for board gaming.

Literature on game players tends to focus on their motivations to perform particular in-game actions or engage with in-game structures such as guilds (Williams, Ducheneaut, Zhang, Yee, & Nickell, 2006). This article describes players not by the way they behave in-game (Bartle, 1996; Yee, 2006) but by the ways in which they reconcile their devotion to their hobby with their responsibilities to their families. It understands gaming as an experience influenced by both the game itself and the gamer’s commitment to the game and play experience (Björk, 2008).

Background

Digital and analogue games have similar elements, in that their rules describe both “the actions players take and the outcome of those actions” (Salen & Zimmermann, 2004, p. 149). The essential difference is the medium. Analogue, or tabletop, games typically have tangible pieces and are played face-to-face in a social setting. Woods (2012, p. 17) categorizes them as either classical or traditional (e.g., *Chess*, *Mah-jongg*, or *Backgammon*, “passed down from antiquity”), mass market (e.g., *Monopoly* or *Scrabble*, “the common perception of commercial board games”), or hobby games—“those games that are not targeted towards the general mass market but to a specific group who can be termed hobby gamers.” Digital games, by contrast, include “arcade games and games played on computers, consoles, and cell phones” (Juul, 2012, p. 5) as well as on tablets and other devices.

Passionate board gamers are serious leisure practitioners: the “buffs” as opposed to the “consumers” (Stebbins, 2012, p. 70). Serious leisure places significant demands on its adherents: It “often borders on being *uncontrollable*. It engenders . . . a desire to pursue the activity beyond the time or the money (if not both) available for it” (Stebbins, 2012, p. 39). Hobby board gamers are not just people who play hobby board games; they are serious board gamers, who place value on “active participation within the hobbyist culture, the acquisition and accumulation of games, and a degree of evangelism for the hobby” (Woods, 2012, p. 120):

Actually, playing the durned things is only a small part of the hobby. There’s collecting, searching for bargains and rare games, discussions of strategy, reading reviews, writing reviews, written session reports and verbal post-mortems, rule-lawyering, designing and discussing variations, deconstructing designs to see how the masters go about their craft, anticipating new releases, going to cons to talk with designers and see the latest stuff, making player aids and travel kits, making homemade copies of hard-to-find games, even creating your own games. There are a hundred ways to play with games when you can’t actually play the games themselves. (Designer Rick Holzgrafe, 2006, as cited in Woods, 2012, p. 128)

Unlike serious mass market or traditional game players, the serious hobby board gamer does not generally focus on one particular game but rather values “diversification and accumulation” (Woods, 2012, p. 132) and a wealth of associated activities; it is the board gaming hobby, rather than a specific board game, that they are serious about.

The serious video gamer is similar in their devotion to the medium rather than to a particular game: “Between the arcade games of the early 1980s and today, video games have matured as a medium, developed a large set of conventions, grown a specialised audience of fans—and alienated many players” (Juul, 2012, p. 2). Many modern video games require and valorize a significant and ongoing time commitment from players (Ducheneaut, Yee, Nickell, & Moore, 2006; Yee, 2004); they are uncontrollable in that they expand to fill, and often exceed, the player’s available time; they require the player to allocate dedicated time to play as they cannot be interrupted (Juul, 2012, pp. 59–60). This commitment is rewarded within the game world—with glory, sustenance, access, and/or facility (Hallford & Hallford, 2001, as cited in Salen & Zimmermann, 2004, p. 346). Highly motivated or capable (video) gamers may even achieve a “leisure career” (Stebbins, 2012, p. 81), for example, through “celebrity status that enables them to find employment in the games industry” (Kücklich, 2005). Similarly, tabletop gaming is characterized by a flexible and participatory culture where participants may simultaneously be both players and designers (Woods, 2012, pp. 138–140). Board game players can contribute to a game’s development through playtesting—272 playtesters are named in the rules to *Le Havre* (Rosenberg, 2008)—and significant contributors may be acknowledged in rules or components. The English rules for *Agricola* (Rosenberg, 2007)

and *Le Havre* use names of production team's children in examples; ship cards in *Le Havre* bear the names of team members' wives; *Le Havre*'s production tokens bear the names of the game's translators and their families (white ships with red text), board gamers who volunteer as teachers for the German publisher (gray ships with white text), and memorials to deceased game designers (gray ships with yellow text; see Figure 1).

More recently, crowdfunding campaigns and board gaming websites have offered opportunities for more gamers to put themselves into games by name (e.g., naming a street on the *Mutant Meeples* board; Alspach, 2012), by image (e.g., BoardGameGeek members' avatars on the box of *The BoardGameGeek Game*; Breese, 2009), or as a designer of an element of a board game or expansion (e.g., *Small World II* Kickstarter; Keyaerts, 2009). Being part of a board game—whether by contributing to its development or through a more personalized acknowledgment—can be a tangible expression of a board gamer's involvement in their hobby.

Themes of work, relationships, home ownership, and family responsibilities all influence adult players' engagement in both physical and digital games. Although for some, these present a barrier to play or at least to playing certain types of game (Juul, 2012, p. 147), for serious board game players these pressures seem more to dictate the choice of game or timing/frequency of sessions than to drive them away from the hobby—“[W]ith a demanding job, a wife, a home ... and a child ... I could only play a 5+ hour game once or twice a year” (Hamburg, 2005, as cited in Woods, 2012, p. 125). Although board gamers' time is restricted, their desire to pursue the hobby through active engagement in its culture remains strong.

While Juul (2012) has discussed the casualization of video game play, there has been little attention given to any similar experience among players of board games. Woods (2012, pp. 124–125) notes that choice of game style or genre may be influenced by players' life stages, with modern European board games “easier to fit into a player's life” due to their limited playing time. It is notable, however, that these players typically engage with board gaming as a hobby, rather than with a single game.

Although there has been considerable research into digital games, as well as historical research into traditional games, modern board games are comparatively underrepresented in the research literature. As well, the role of changing life stages in shaping board gamers' involvement with their hobby is largely unexplored.

Method

We conducted a series of in-depth, one hour semistructured conversational interviews with self-identified board game enthusiasts, recruited through a forum post on BoardGameGeek.com as well as through an e-mail list focused on modern European board games. These groups were selected for our ability to reach them, as well as for their broadly representative nature within the hobbyist community; Juul (2012) has

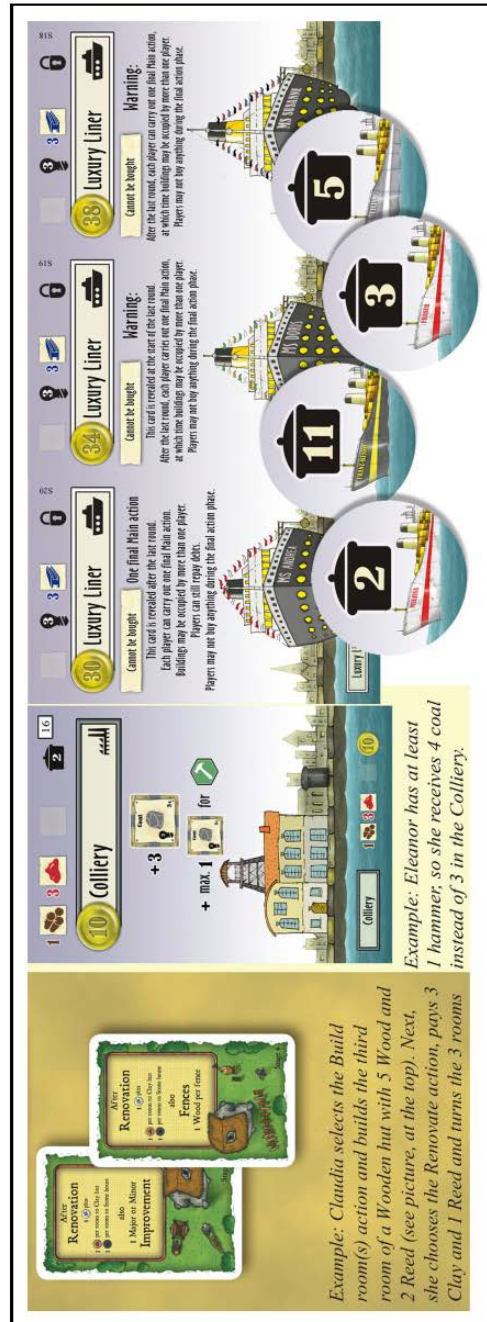


Figure 1. Agricola rules example, Le Havre rules example, and Le Havre ship cards and production tokens.

described the relative difficulty of reaching casual gamers as opposed to serious gamers. The aim of this study was to gain a deep understanding of the experiences of a representative group, rather than to provide a quantitative overview of an entire cohort. The number of participants was selected to achieve data saturation and to generate a manageable quantity of data, with all relevant themes identified (Atkinson & Flint, 2001).

Weiss (Guest, Bunce, & Johnson, 2006) describes interviews as “a virtual window on experience.” This method of data collection engenders a deep understanding of the identified issues, allowing the researcher to follow up on and test themes and feedback through a contextual inquiry approach where the researcher tests the accuracy of their analysis during the interview (Gubrium & Holstein, 2012, p. 30). Beyer and Holtzblatt (1995) support this view of interviews as an opportunity for researchers and interviewees to coconstruct research data, “a social encounter in which knowledge is actively formed and shaped” (Roulston, deMarrais, & Lewis, 2003, p. 645). Although this approach lacks the statistical validity of surveys, that is not its intent: The purpose of the interviews is to describe and examine the participants’ motivations and experiences, generating deep, qualitative, context-driven data that is specific to the situation being studied.

Eleven interviews were conducted with participants from Australia (six), Europe (three), and the United States (two), aged from mid-20s to early 60s. All identify as “board gamers” and work or have worked in white-collar jobs. Four interviewees are female and seven are male. All interviews were conducted by the first author of this article, face-to-face or by Skype or telephone, with participants in Australia, the United States, and Europe. Initial questions explored participants’ engagement with gaming as a hobby focusing on time, financial commitments, and participants’ emotional engagement with the hobby (Woods, 2012, p. 120), reflecting Stebbins’ observation that serious engagement “engenders . . . a desire to pursue the activity beyond the time or the money (if not both) available for it” (Stebbins, 2012, p. 39). The goal of the interviews, which covered a range of topics including the participant’s history as a gamer, their preferred types of games, frequency of gaming, and what they like or don’t like about games, was to establish the role that board games play in participants’ lives and to understand their attitudes toward digital and tabletop games, as well as to elicit general demographic data. In total, seven of the participants were parents or stepparents; none were grandparents. Participants’ children are aged from seven to young adult (20+); all participants alluded to the impact that children may have on someone’s participation in the gaming hobby and communities. Interviews were analyzed using an iterative coding process (Muller, 2014, p. 37) to identify themes that were common across interviews. Once we had completed and coded the interviews, we explored the “Gaming with Kids” subforum on BoardGameGeek.com to better understand the different approaches described in interviews. This process consolidated and extended the set of behaviors identified through the interview process.

Insider Research and Reflexivity

It has been suggested that one can only appreciate the aesthetics of a particular culture if one is actively involved in it (Woods, 2012, p. 12) and, more specifically, that “Researchers of games should play the games they are studying” (Williams et al., 2006, p. 342). Dahlskog, Kamstrup, and Aarseth (2009, p. 3) note that a game analyst must progress in a [digital] game in order to understand it. Brown (2015) has discussed the importance of reflexivity in conducting ethnographic research, particularly when the researcher is in some way an “insider” in the field, in the context of research into computer games:

Reflexivity means both having the capability and language necessary to justify the methodological, theoretical and practical/pragmatic steps undertaken during data collection and analysis (Mason, 2002), and also the awareness of the researcher’s relationship to the field. For computer games research, this type of reflexivity requires acknowledgement of when the researcher is, and is not, an embedded member of the community being researched. (Brown, 2015, p. 80)

The first author of this article has been an active participant within the global board gaming community (and sometimes industry) since 2003. As a consequence, all interview participants have been known to her, or she to them, through participation in local gaming groups, attendance at national and international events, and participation in BoardGameGeek forums and associated social media activity. In some cases, researcher and participant have met in person; in others, they have known of one another through mutual involvement in gaming communities. Some participants spontaneously discussed her family during interviews; one described playing games with her husband and child, another discussed having met her husband at an international board gaming event; others described their desire to “visit Melbourne.”

When one is already, at some level, an insider in their field, it is probable that they have pre-established friendships—often close friendships—in that field and it is also probable that such close friendships will shape the researcher’s work and influence their positioning within the field. (J. Taylor, 2011, p. 8)

The researcher’s reputation and involvement in the hobby helped to recruit participants by giving them confidence that this insider research would be conducted from a position of knowledge and understanding of board game genres, board gamers, and board gaming mores.

There are risks associated with insider research, which Hodkinson (2005) has discussed in the context of research into youth cultures. Like Brown (2015), Hodkinson notes the importance of reflexivity in understanding both the advantages of insider research, which include shared language, perceptions of trust, and willingness to participate and disclose personal information, and its potential disadvantages, which include overcomplacency, perceived familiarity with content and

context, and perceived pressure to conform to “dominant thinking within the group” (Hodkinson, 2005, p. 17). Similarly, J. Taylor (2011) describes conducting insider research in queer cultures, referencing the value of “unlearning” as a means to provide distance between the researcher and participant (Bennett, 2003). “Researchers should consider whether an insider or outsider position will serve their purposes more effectively in interviews, depending on the topic at hand” (Cote & Raz, 2015, p. 105). Although these interviews were conducted by an insider in the board gaming community, respondents were occasionally asked to explain a particular concept or behavior “as you would to a non-gaming neighbor or friend”; this provided context around an interviewee’s interpretation of an activity or expression, allowing for deeper understanding. Additionally, interviewees were offered the option of reviewing the transcript of their interview in case they later wished to redact material or add to it.

Serious Board Gaming

To Paglieri, the “true players” are those for whom “enjoyment is the *motivation* for play” (Woods, 2012, p. 191). The players we interviewed demonstrate this commitment to the implicit social contract of enjoyment while playing, even over the more explicit goal of winning (Bergström, 2010; Woods, 2009). Our research has highlighted four key dimensions that our interviewees consistently describe when discussing what they enjoy about board games: sociality, intellectual challenge, variety, and materiality. These echo, but do not exactly replicate, the “pleasures of play” described by Woods (2012, p. 167); this may be explained by different research methods. Respondents to Woods’ online survey were asked the open-ended question, “From what aspect of play do you derive the most pleasure generally?” and were able to enter a free text answer; our conversational interviews asked, “What do you like about playing board games?” without focusing on degree of enjoyment.

It is beyond question that the sociality of gaming is a key part of participants’ enjoyment; interviewees observe that the social framework extends beyond the actual play experience: “I’ve had occasions where I’ve gone for ‘an evening of gaming’ where no actual gaming took place because we just started talking and had a fun evening” (P5). Moreover, our interviewees speak positively of the intellectual challenge that play provides. Both of these dimensions are identified and discussed in Woods’s findings. In conversation, however, our interviewees pointed to two further dimensions which are, we believe, underrepresented in Woods’s findings, possibly because they are secondary to the overt sociality and challenge of play. These are variety, primarily in the selection of available games but potentially also in gaming opponents and partners, and materiality—the physicality of and sensory joys afforded by board games (Rogerson, Gibbs, & Smith, 2015b, 2016). These four dimensions have informed our understanding of the different approaches that we describe in this article, as each approach has potential to transform the play experience across one or more of these dimensions.

Board Gaming Through Different Life Phases

Our interviews suggest that there are patterns of engagement with games that are seen across different stages of a player's life. After playing "the usual" games as a child, many board game hobbyists discover board games during secondary school or at university, with a period of relatively intense play that may continue into their early career but at some stage is reduced due to the demands of work. Entering into a relationship typically triggers either a reduction in gaming or, for those whose partner also plays games, an increase both in playing games and in talking about them—as well as in acquiring games: "I think we've gone from the 20 something games that [partner] had ... when I first started seeing him—to our collective collection is about 300" (P3).

The arrival of children typically triggers a dramatic reduction in gaming time, which may continue until they are in their teens or later, when the parents feel ready to reengage with outside groups. Both parents and nonparents identify children as a factor that impacts on the time available for the hobby: "I don't have kids—and I live very close to where I work. I therefore have an enormous amount of spare time ... So I have a lot of time to devote to this hobby" (P4).

With both mothers and fathers spending more time in child-care activities than in the past (Craig, 2006, p. 261), and with a majority of employed men and women working more than 40 hr per week (Abramowitz, 2014, p. 3), the resulting time pressures are evident. Our research suggests that controlling the context, time, location, and medium of play may be critical in enabling parents to continue to engage with their hobby despite these conflicting pressures.

Changing Context: Reframing Games as an Opportunity for Cross-Generational Play

Many parents see games as an opportunity for cross-generational play, particularly within the home—"As a father, I want to share with my kids the things I enjoy doing" (Howell, 2015). Board gamers embrace the opportunity to evangelize their hobby, and the idea of "built-in" gaming partners is appealing; parents—especially fathers—often choose to share their hobbies with their children. One of our interviewees, who does not have children, described this board game utopia:

I was staying with friends earlier in the month, who have two grown-up kids who love playing games, so I've had built in people to play games with! Wow! That changes everything! Oh my God, the people who have built-in players in their lives, that is amazing! I've never had that before. I've always had to go and organise it or join groups or be part of people's regular group. But when you've got people who live in the same house who you can just play games with whenever you want Oh my God that is precious! [laughs] Oh my God that is so good, that is so good! (P2)

At a time when time allotted for family bonding is decreasing (Petrick & Durko, 2013), a shared hobby can strengthen family interactions. Board gamers who are new parents look forward to playing with their children; many have unrealistic views of parenthood as an extended playtime with their children as enthusiastic participants. This can lead to conflict with their children, who may prefer to select their own activities, especially as they become teenagers, as well as with their partners: Craig (2006) has shown that fathers spend disproportionate amounts of “child care” time playing with their children, as opposed to providing hands-on everyday care (washing, cooking, shopping, etc.).

I do lots of stuff with the kids. Reading, when they're little tiny ones. Lego is a big, popular thing. Games, my main hobbies, really. Drawing and games. (P10)

This interest is reflected clearly in the way that discussion of children is framed, particularly within board gaming communities where the majority of participants are male (Woods, 2012, p. 122). Birth announcements on BoardGameGeek.com typically ask for advice on how soon the child can be expected to start gaming:

“[My son] was born on the 22nd of December, and just arrived home yesterday. 4.2 kilos of needy high maintenance.

Now, time to start stocking the games cabinet for the coming years. I sort of know that Haba and Selecta make games for children. Any suggestions for the son of a gamer dad?” (Adams, 2008)

A scan of the “Gaming with Kids” forums on BoardGameGeek reveals further thread titles like “Being a Disappointed Gamer Dad,” where a father bemoans that his child is “only” capable of age-appropriate behavior: “My 3.5-year-old daughter can barely put the last completely square piece of a puzzle in place. She sure as heck isn't capable of playing *Dominion*. And it's not for a lack of trying on my and my wife's part.” Similarly, threads like “king of New York for a 5-year-old?”, where board gamers discuss introducing adult games to very young children, surely contribute to confusion over what games are appropriate for what age child. Indeed, many board gamers bypass children's games entirely, instead introducing their children to simpler games from the parent's preferred genre. Those board gamers that embrace them find that children's games typically lack the strategic depth and intellectual challenge that attracts many to the board game hobby and therefore fail to provide the mental stimulation that board game enthusiasts seek, however much they may appeal to children and create an opportunity for family bonding. Although this change in context allows for more playing time, and children's games frequently exemplify the focus on board games' materiality, with younger children this approach restricts not only the intellectual challenge but also the variety of games that are available to play. The sociality it offers is focused on the child and family setting. Playing games with young children adds a level of

enjoyment to family settings but does not deliver the same type of sociality as playing games with friends.

Participants' opinions on the relationship between early exposure to high-quality board games and ongoing engagement with board gaming as a hobby were mixed. On the one hand, building a shared hobby may strengthen ongoing parent-child relationships and ultimately develop the "built-in player" of our interviewee's board game utopia, framing a new adult relationship; on the other, those children may exercise their power of veto and refuse to play board games with their parents. "Are they gamers, yes. But their game of choices are video games, for the most part" (P6). One of our participants described her daughter's refusal to play games as a teenage rebellion and concluded that, "Lining that up against possible options of sex, drugs and rock n roll, I'm kind of OK with that" (P3). Research into intergenerational play between grandparents and grandchildren has found that it is focused strongly on phatic exchanges (Vetere, Davis, Gibbs, Francis, & Howard, 2006, p. 1476): Play has a strong role in strengthening social bonds and building relationships (Osmanovic & Pecchioni, 2016). Although parents hope that playing board games with their young children might produce a long-term board gaming opponent, in practice, it seems that the pleasures of playing games with children should be enjoyed for what they are—a shared social experience—without an expectation of future return.

Changing Time: Game While the Children Sleep

Simultaneously caring for children and board gaming with other adults splits parents' attention both from the game at hand and from the children's needs, leading to an experience that satisfies nobody. An alternative is to restrict gaming to times when children are not present, at least while they are very young—"I am looking forward to when they are old enough that my wife and I, or my friends and I, can play a game without having to wait until the kids are in bed" (Wilder, 2015). This is typically understood as a hurdle that will be overcome as children grow older: Whether the children choose to join in with the games or not, parents understand that they will not always require the same levels of supervision.

One interviewee described his experience of spending the working week away from his family in a major city, where he played games four nights a week due to the lack of other demands on his time. He contrasted this with his time at home with his family, stressing (as did other interviewees) that spending time with family is not something that he sees as a chore:

[My son] is seven, and he's definitely our last. I just love being with him. The idea now, of actually saying, "Do you know what? I'm going to go off and do four nights' gaming", like I did before is just not even in my head ... when I was working away, it's purely practical because if I wasn't out gaming, I'd probably go out drinking. If I didn't go out drinking, I'd be sat in my room being utterly miserable because I wasn't at home. Now, I'm home. It's where I really want to be. (P10)

A further advantage of timing board gaming for child-free times appears to be that it does not restrict the choice of games to those suitable for children, opening up broader strategic depth and greater competitive or confrontational play. The variety of games played is still restricted by the host's library or by the games that opponents choose to bring, but the pleasures of sociality, intellectual challenge, and materiality are generally undiminished.

Changing Location: Going Out for Gaming

Board gamers who prefer to play with adults frequently negotiate reciprocal “time off” with a spouse to pursue their hobbies in tandem—“it’s like poker night” (P9), although this approach is less cost effective for couples who wish to play together, or for single parents who require child care. There is a sense that cost may be a more significant factor for board gamers with young children than for those with older families or without dependents: “One of the other guys has got a young family so he tends to not pick up as many games” (P3; see also Carter, Gibbs, & Harrop, 2014, p. 136). This increases board gamers’ reliance on friends and gaming partners to supply access to new games and may encourage them to go out to events rather than stay home to play games from their own collection.

Acknowledging that frequent absences are disruptive to home life, fairness and equity in providing child care were important to our interviewees:

I discovered another group that meets weekly, that I attended about monthly until fairly recently, when my sons were old enough and it didn’t put such a burden on my wife for me to be gone on a weekly basis for one night out of the week. (P5)

Another interviewee was invited to a local gaming night but was unable to attend as his sons went to boy scouts that night—

But as fate would have it, that boy scout troop started shrinking and they switched over to another troop which met on Thursday nights so it was like, Ah! I’ve got Tuesday nights free now! Maybe I could check this out! (P6)

Fifteen years later, he still attends that same weekly game night.

Despite frequently engaging with gaming as time apart from family, interviewees’ priorities clearly put family harmony ahead of their participation in the hobby. One interviewee, however, felt that her ex-husband’s insistence on continuing to host and participate in game nights despite having a young baby was a factor in her marriage breakdown. She saw this insistence as a symptom of her former partner’s mental health problems—“he just wouldn’t grow up” (P9)—rather than as an inherent problem with the gaming hobby, and named several other people who had successfully combined their hobby with parenthood.

A side effect of going out to game is that it removes gaming from the home and creates additional demands on time, particularly when hobbyists travel to attend board game conventions and other events, often in a form of “girlfriend getaway” or “mancation” (Petrick & Durko, 2013). This itself may be a limiting factor: “When I go on vacations, a weekend is one thing but—I’d rather take my wife with me” (P6). Particularly in the United States, limited leave provisions restrict interviewees’ ability to attend longer or out-of-town events, although many interviewees saw an opportunity to combine gaming with family vacations. “As a family, we went to the Essen games fair in Germany” (P1). Of course, this is a more successful approach when both parents are equally engaged with the hobby:

For years, I’d been saying, I need to wait until we’re doing a family trip and then I’ll just stop in Essen on the way. And then I thought about just how miserable that would make my wife [laughs] and decided that that was a really bad idea. (P5)

Our research has also found scattered examples where parents have taken their children out of school and other scheduled activities to attend gaming events, either within their immediate area or those involving travel. As with playing children’s games, this delivers a different experience than attending in adult company, but remains preferable to not attending at all.

When I am there with the family, it tends to draw me away from the game floor more . . . So, my younger son and I went to Gulf Games a couple years ago . . . and one of the things that we did was to visit Ruby Falls which is a large underground waterfall right on the Georgia-Tennessee border. And that was a lot of fun . . . And so, that’s it makes things a little different. It’s something that I really enjoy but it’s it tends to make gaming conventions with the family more like other vacations with the family. (P5)

Voluntary absenteeism is a sensitive topic that is often presented as negatively affecting children’s education, particularly in the mainstream press and in policy documents (C. Taylor, 2012); however, these participants recognize that travel offers opportunities for situated and experiential learning (Minnaert, 2012) as well as for deeper benefits including family bonding (Petrick & Durko, 2013).

Changing locations to game, whether locally or traveling more widely, offers enthusiasts social interaction and intellectual stimulation and enhances the variety of games that are available to them. Moreover, broader travel may allow them to bring new games back to their regular gaming groups and thus introduce additional variety there.

Changing Location: Move Board Gaming Activities From Public Spaces to the Home

Although many board gamers choose to go out to play games with a broader group of people, others choose the convenience of playing in their home. This often starts as

an attempt to control the timing of play—to game while the children are asleep, without incurring babysitting expenses—“I got out of the habit of going to club events as the kids were growing up . . . more common is to have a friend or friends come over to play” (P1). This interviewee also observed that the money that he would have spent on babysitting if he and his wife had gone out together to play games would easily buy them a new game.

Playing games at home may be part of a broader tendency for players to seek like-minded people to play with and, more specifically, to avoid people that they don’t want to play with. Despite their appreciation of the sociality of gaming, our interviewees, when asked about what they don’t like about board games, invariably talked about people: “I go to organised gaming groups and there are one or two people at all of them with whom I would rather not spend time” (P4). Playing games in the home allows a more consistent experience of play as well as a focus on the games rather than on a (potentially uncomfortable) social situation. Players have control over environmental aspects such as lighting, noise levels, and even heating or cooling. Playing at home may also extend the time available for gaming: “We do most of our gaming at home. It’s the convenience of inviting people to our house and then we don’t have to go” (P3); however, it may reduce access to a range of game titles, with the host’s collection becoming the group’s default library.

Not explored in our interviews was the sense of being in someone’s territory when playing in a home. Steinkuehler and Williams (2006) have shown that massively multiplayer online (MMO) video games can serve as a virtual “third place” (Oldenburg, 1999); the same is true for board gaming cafés (Jonsson, 2012, as cited in Eklund, 2012, p. 26), and our experience and observations suggest that this extends to board gaming clubs and events. The home environment is not neutral, however, with one or more players taking the role of host, and this has implications for the gaming experience that extend to choice of game, timing of play, and even whether or not food and drink comprise a part of the evening. An advantage, however, at least to those invited, may be that the group is selected rather than open:

In any given group, there are people you want to play with and there’s people you don’t want to play with. And at the organised . . . groups when you find the people you like to play with, there’ll often be whispers aside, going, ‘come round to my house.’ And then you start going to each other’s house and don’t go back to the group. So the good players stop going to the group. The people with social skills, who get on with people and play nicely with others, often start playing outside the group and never go back to the public group. And that’s very common and in fact it’s happening now in some of the groups I’m in. Which is a shame because if new players come in . . . it makes me feel guilty not being there to welcome those new players. (P2)

Moving the location of play to the home allows players to play deeper, intellectually challenging games without the need to conform to a commercial premises or limited availability of the space, although the sociality may change due to a player’s

“ownership” of the home environment. Play in homes may offer reduced variety in the overall choice of games; however, it also offers full access to the host’s game library rather than to the subset that they choose to carry to a gaming event.

Changing Medium: Go Digital

While these strategies of changing context, time or location focus on finding or creating opportunities for face-to-face play, digital devices like smartphones, tablets, and computers also offer an outlet for the serious board gamer. Many people devoted to the hobby of board gaming embrace digitized board games as a means of engaging with games even when restricted to the home. Digitized board games remove the restrictions of time and location as well as of opponent availability and collection size, although there are tensions as digitization may change or transform the experience of play (Rogerson, Gibbs, & Smith, 2015a). As well as single player modes, digitized board games frequently offer multiplayer modes against known and unknown players. Opponents need not be in the same place; asynchronous, turn-based games ensure that opponents need not even be online together—“you get notified when the other people have had their [turns]. I prefer that sort of computerised board game—I’m not interested in having to make the time commitment to real-time games on computer” (P1). Gaming platforms like *boiteajeux.net*, *Yucata.de*, and *Brettspielwelt.de* (BSW), as well as smartphone apps, offer hundreds of games for little or no cost. Just as serious leisure quilters relocate their quilting activities to enable them to sit near their families (Stalp, 2006; Stalp & Conti, 2011), serious leisure board gamers engage with digitized games even while spending time with their children or spouse: “When [family] want to sit and watch television, and they want me with them, well then I’ll sit and do that [and play a digitised board game at the same time.]” (P3). Despite a sense that digitized games are somehow less real—“it’s just really filling a gap if I haven’t played [*Agricola*] in a while” (P2)—we have found that parents may adopt digitized board games to maintain a connection with their hobby and even with distant friends: “you get to play with people which you’re not going to be able to physically play with” (P1). Anecdotally, we have heard parents describe using digitized board games as a “sign of life” from a traveling (adult) child who consistently remembered to take their turn in online games.

It is not only in playing games that digital devices allow parents to participate in the gaming hobby. Stenros, Paavilainen, and Mäyrä (2009) have shown that the sociality of gaming is not limited to direct in-game interaction but extends beyond the immediate game situation to generate social and gaming capital. Value is placed on active participation within hobbyist communities (Stebbins, 2012; Woods, 2012): It is not just the play that matters but the broader activities, the pastimes, and sociality that surround it (Carter et al., 2014; Harrop, Carter, & Gibbs, 2013). Digital gaming platforms, as well as websites and social networks focused on games, have the capacity to build social capital (Trepte, Reinecke, &

Juechems, 2012) and function as third places (Oldenburg, 1999), in much the same way as MMO games (Steinkuehler & Williams, 2006, p. 886) and board gaming clubs and events. For the parent whose mobility is limited by child-care responsibilities and limited time and money, digital board gaming platforms and community sites like BoardGameGeek.com offer a path to games and gaming information.

Platforms like Yucata.de, boiteajeu.net, and BSW offer more than simply game-play. BSW offers real-time gameplay with live text-based chat, as well as a “meta-game” structure of towns and guilds. Yucata and boiteajeu both offer turn-based play with different player-to-player messaging options. All offer persistent user accounts that can build up a history of the player’s activity, recognizing gaming cultural capital through ranking and even prizes and contests.

Although the play experience of board games on digital devices lacks the materiality that board gamers value and transforms the sociality of the play experience, playing digitized board games offers variety and intellectual challenge. Further, this approach offers an additional means to customize the location and time of play to accommodate parenting and other family responsibilities.

Discussion and Conclusion

Serious leisure board gamers have developed a host of strategies to continue their engagement with their hobby, as the responsibilities of parenthood intervene. Our research identifies a range of strategies for enabling play which each impact on the four key dimensions of enjoyment that players derive from board games.

The sociality of play experienced around a table is transformed when players change the context of play to include children, change the location of play from a neutral space into the home or vice versa, or change the medium of play by engaging with digitized rather than physical board games. Board gamers not only value the sociality of spending time with other adults but also seek to spend time with their families. Social capital in board gaming is earned through many different types of engagement with board games even beyond the play experience, as has previously been demonstrated for digital games (Eklund, 2012, pp. 7–8; Stenros, Paavilainen, & Mayra, 2011).

The intellectual challenge offered by board games—the sense of solving a puzzle and understanding the game’s underlying engine—is most valued in play with other adults. Children’s games do not offer the same level of intellectual challenge; interviewees also suggest that digitized board games may not deliver the full depth of strategic experience. Users’ comments that automation of a game’s chores and removal of material components in the digital medium reduce their need to understand the rules highlight the importance of these small manual tasks for understanding the game’s underlying engine (Pape, 2012; Rogerson et al., 2015a; Xu, Barba, Radu, Gandy, & MacIntyre, 2011) and demonstrate the different ways in which board gamers experience digitized and physical games.

Changing the context, location, and medium of play can also impact the variety of board games that are available to be played. Moving play to a player's home restricts the choice of games to those owned (and, possibly, enjoyed) by the residents; moving play outside the home may limit the available games to those that are easily carried. Playing with children restricts the choice of games to those whose rules, mechanics, components, and/or subject matter are considered appropriate. Playing board games on digital devices limits the choice to games that have already been digitized on the player's preferred platform. Of course, in some of these instances, the choice may be broader and more variety may be available, particularly when players visit game stores, clubs, or conventions but also when they engage with digitized board games. Yucata.de currently offers 109 board games (2 in Beta testing) and BSW offers 51 multiplayer games; hundreds of games in the iTunes store have been categorized by their developers as board games. Although many of our interviewees own hundreds of board games, significant numbers of games, including new titles, are available to play online. Both location and medium affect the variety of games that are available at a given time.

The materiality of play is not constrained by changes in location and time. The pleasures of seeing, touching, smelling, holding, and hearing a board game are broadly unaffected by whether it is played in a home or a public space, during the day or after children's bedtime; it is when the medium changes to a digital device that the game loses essential material aspects. Although the digitized game typically reflects the form, components, and artwork of its physical counterpart, its players cannot touch and arrange the game pieces, smell the printer's ink, or weigh the game box in their hands. Several interviewees described enhancing the experience of play by crafting new components and player aids and enhancing their enjoyment of the game through "pleasures of production" (Tanenbaum, Williams, Desjardins, & Tanenbaum, 2013) which are not available in the digital game medium.

In this article, we have described hobby board gaming as a serious leisure pastime that demands large commitments of time and energy. Increases in the amount of time that parents spend on child care have created new time pressures that restrict the time available for leisure activities. We have shown that serious hobby board gamers who become parents are able to negotiate the context, time, location, and medium of play in order to successfully reconcile their desire to enjoy their hobby with the need to attend to their new family responsibilities. Becoming a parent may curtail and transform the experience of board gaming, but it does not prevent it.

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Author Biographies

Melissa J. Rogerson is a PhD candidate in the Microsoft Research Centre for Social Natural User Interfaces at The University of Melbourne, Australia. Her doctoral research examines the experience of playing board games in both physical and digital forms, as well as the characteristics and motivations of hobbyist board game players, designers, and developers. It applies techniques from human–computer interaction to the study of games and play.

Martin Gibbs is an associate professor in the Department of Computing and Information Systems at the University of Melbourne. His current teaching and research interests lie at the intersection of science, technology studies (STS), and human–computer interaction, and are focused on the sociable use of interactive technologies.

7.6. Discussion

Where Chapter 6 provided a broad overview of the habits and motivations of hobbyist boardgamers, this chapter turns attention to what happens when those habits are disrupted by a change in the hobbyist's family circumstances. In observing the effects of the disruption, even indirectly through interviews, this research approaches a 'breaching experiment'. In ethnomethodology (see Chapter 3), breaching experiments are used to problematise a situation (Dennis, 2011, p. 351). This allows the researcher to understand what elements of a situation are taken for granted (Marcon & Gopal, 2003, p. 3) and to "make forms of common sense reasoning available for empirical research" (Maynard & Clayman, 2003, p. 177). Breaching experiments reveal the habits and mores of a community. In this instance, the birth of a child challenged the status quo of the interviewees' habits and caused them to develop new strategies to accommodate their hobbyist participation, revealing the importance of boardgaming to them.

In the context of this thesis, this chapter enhances the discussion in Chapter 6 by moving from the general to the specific. It shows that hobbyists' behaviour follows what they say that they value about the hobby (RQ₁ and RQ₂), but also highlights that they will compromise on those values to support the overarching goal of playing.

In Part III, I will consider the nature of that participation and investigate, specifically, the interactions and behaviours that surround the boardgame table.

Part III: Boardgaming

Chapter 8.

Cooperating to Compete: The Mutuality of Cooperation and Competition in Boardgame Play.

8.1. Introduction

This thesis has been structured around the three perspectives of games, gamers and gaming. In Part I, I looked at the perspective of boardgames. This section focused on the materiality of boardgames and the ways in which it is valued by players. It also considered what happens when boardgames are digitised. In Section 4.3, I noted that the digitisation of boardgames was the initial focus of my research. I planned to investigate how digitisation transforms the experience of boardgaming. In conducting the case studies for Chapter 4, however, I realised that little is known about the experience of playing a boardgame. This realigned the focus of my thesis to understanding hobbyist boardgaming more broadly.

Instead of pursuing the idea of digitised boardgaming, I adopted Björk's Games – Gamers – Gaming model as the focus for this thesis. Accordingly, the second focus of my work was boardgamers. In Part II of this thesis, I described hobbyist boardgamers, their motivations and habits. I showed that they have a specific form of hobbyist expertise and described the ways in which they engage with their hobby.

I now turn attention to the experience of play – to gaming. This chapter presents findings from Study 3 and responds to RQ4 – What is the role of a boardgame's materiality during play? – building on the understanding of materiality that I gained from the first two studies. In it, I show what happens during play of a boardgaming. Through close attention to the detail of play, I demonstrate that even

competitive play is a cooperative encounter. Players cooperate with one another in negotiating, enacting, and maintaining the game state. Moreover, they cooperate with the material elements of the game as well as their opponents to improve and maintain their understanding of the game state.

Many contemporary games are too big to be described as a whole. For many purposes, first one needs to find a part of the game or parts of games that are analyzed. (Lankoski & Björk, 2015a, p. 28)

Although Lankoski and Björk are writing primarily about videogames here, this statement nevertheless holds true for boardgames. This study focuses on the interactions that occur during gameplay, rather than on elements of gameplay and strategy that occurred during the sessions. It explores the ways in which the game's materiality is used by the players as a tool for planning and as a tool for tracking and understanding the gameplay.

This chapter reveals a new understanding of the cooperative work of play. It shows the complexity of the situated interactions between players and demonstrates that in-game cooperation is multi-faceted. Moreover, it demonstrates that a boardgame's materiality is more than simply incidental or appealing. The game components facilitate cognitive off-loading of plans and key information and create use-histories that may be used in future as well as during the current play. The materiality of the physical pieces affords activities that are frequently unavailable in digital games due to the opportunities to manipulate individual pieces.

8.2. Prior publication

This chapter comprises a prior publication and is presented as-is, in its published form. It was originally presented at and published in the Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, in Montreal, QC, Canada, where it was awarded an Honourable Mention Award for Best Paper. This placed it in the top 5% of over 2,000 submitted papers. It is an output of Study 3, where I observed different groups of players playing boardgames. This section of the thesis responds to RQ4 – What is the role of a boardgame's materiality during play? – building on the understanding of materiality that I gained from the first two studies.

8.3. How does this paper contribute to the thesis?

This paper provides insight into the activities of gaming, the third element of Björk's model. It builds on the work in Chapter 4 around the importance of articulation work and chores in games and on the insights into the importance of materiality from Chapter 5. The materiality of the game is, in this instance, what enables the distributed cognitive system embedded in the gameplay. Moreover, it examines the practices and behaviours that hobbyists described in Chapter 6.

Playing a boardgame clearly demonstrates the sociality, the intellectual challenge and the materiality that hobbyist boardgamers value so highly. Practicalities required that the selection was limited, so this paper does not focus on variety, although some groups enjoyed experimenting with games that were new to them. The act of playing a boardgame – of boardgaming – brings together the boardgamers and the boardgame, completing the three distinct foci of this thesis.

8.4. Methods

This study – Study 3 – is based on seven gaming sessions of between four and six people. A total of 33 people participated in the sessions. I used participant observation techniques to observe them both in real time and as recordings. Figure 8.1 shows two images from the Study.



Figure 8.1 Two views of gaming sessions (Study 3). To the left is an overhead view of a game of *Hanabi* (Bauza, 2010b), played with the deluxe (resin tile) edition. To the right, a group plays *Mysterium* (Nevskiy & Sidorenko, 2015).

A more detailed discussion of the method for this study, which includes a detailed description of my novel use of gaze glasses as an ethnographic tool, is provided in Appendix F.

This study moves attention to RQ4, examining the ways in which players use and manipulate the materiality of the game during play. Like Studies 2 and 3, this work is situated in the symbolic interactionist tradition (Blumer, 1969; Plummer, 2000; D. A. Snow, 2001). It describes the interactions between players and artefacts as well as between players; it explores the symbolism of the artefacts and the ways in which they are used as representations; it investigates the ways in which the gameplay and artefacts may change over time; and it calls attention to the choices and decisions made by the players during the play.

8.5. PDF of paper

CHI 2018 Honourable Mention

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Cooperating to Compete: the Mutuality of Cooperation and Competition in Boardgame Play

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ABSTRACT

This paper examines the complex relationship between competition and cooperation in boardgame play. We understand boardgaming as distributed cognition, where people work together in a shared activity to accomplish the game. Although players typically compete against each other, this competition is only possible through ongoing cooperation to negotiate, enact and maintain the rules of play. In this paper, we report on a study of people playing modern boardgames. We analyse how knowledge of the game's state is distributed amongst the players and the game components, and examine the different forms of cooperation and collaboration that occur during play. Further, we show how players use the material elements of the game to support articulation work and to improve their awareness and understanding of the game's state. Our goal is to examine the coordinative practices that the players use during play and explicate the ways in which these enable competition.

Author Keywords

cooperation; competition; distributed cognition; situated cognition; boardgames; players; CSCW; Human-Computer interaction; games; play; articulation work

ACM Classification Keywords

H.5.2 [User Interfaces]: Miscellaneous; K.8.0. [General]: Games; H.1.2 [User/Machine Systems]: Human factors

INTRODUCTION

The CHI community has long been concerned with studies of Player-Computer Interaction, “the study of games, gaming and play” [11, 37]. This interest has been extended to the context of Computer-Supported Collaborative Work

(CSCW), where it falls under the umbrella of “the design and study of non-work and leisure activities” [9]. Here, we draw attention to the play of boardgames, and to the distinct form of cooperative work that they demand of players, who must work together to interact with one another and with the game even as they compete against one another in attempting to win.

In this paper, we argue that the cooperative work of play requires knowledge of the game's state to be distributed not only amongst the players but also across the game's board and components, and throughout the duration of the play. We turn attention to the “coordinative practices” [51] of modern multiplayer boardgame play, examining how players negotiate rules, articulate play, co-ordinate actions, co-operate to enact rules, and collaborate to make sense of the game even as they compete against one another within its framework. Through detailed observation and thick description of key moments in play, we shed light on the interactions that occur during a game, as well as on the complexity of the relationship between collaboration and competition. It is, we argue, in these situated interactions between and amongst players and the gameboard and components, which seamlessly combine cooperation and competition, that play emerges.

This paper contributes to HCI and to Game Studies in three ways. Firstly, we extend and deepen existing understanding of the boardgame player as a “user” of a technology – here, of the boardgame environment. Through close attention to play, we explore the relationships between and amongst players and the board and components at different points during the game. Secondly, we offer a rich exploration of the mutuality of competition and cooperation in this complex environment through an empirical study that is well-grounded in theory. We show that cooperation occurs across different gameplay activities and is seen as a necessary part of play. Lastly, we present distributed cognition as a valuable and productive lens for examining boardgame play, demonstrating its relevance and application in this environment. This provides a new context for studying distributed cognition, demonstrating its relevance for understanding a situation that is both social and instrumental.

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RELATED LITERATURE

Although discussion of tabletop boardgames in HCI literature is not new, this discussion has typically focused on boardgames as tools for research or design [28, 53], as means to foster behavioural change [2], or as inspiration for development of novel interfaces [8, 15, 29, 38, 70]. A further body of work sees boardgames as tools for programming challenges [7] or even as providing design guidelines for non-game interfaces [21]. Moreover, much of the research that discusses boardgames engages either with traditional two-player games such as *Chess* [36], or with older mass-market games from the early to mid-twentieth century such as *Monopoly* [70], rather than with the significant body of modern boardgames published since the 1990s. Notable exceptions here in HCI literature are the work of Cheung [12], Wallace et al [63] and Peitz, Björk and Jäppinen [42], which engage directly with player experience, as well as our own previous work on the materiality of boardgames [47]. Cheung [12] discusses the need for “flexibility” in the design of a digital interface for playing traditional card games. Wallace et al [63] test the effects of differing levels of automation in a digitised version of the modern boardgame *Pandemic* [33], we discuss the importance of the materiality of modern boardgames to the player experience [47], and Peitz et al [42] describe the development and reception of a hybrid game from a game design, rather than systems design, perspective. This focus on the experience of players rather than on technical challenges or the aims of the designers is an exception, rather than the rule.

Within the CSCW literature, studies have investigated orchestrated games using live SMS [14], digital games involving physical activity [49], and collaborative gaming in augmented and virtual environments [9, 60], as well as in-game marriage and computer-mediated intimacy [18], collaboration in hybrid therapy games for autistic children [35], understanding the development of ad-hoc infrastructure in virtual organizations within alternate-reality games [69], creating opportunities for “silliness” and other playful interactions in family video-conferencing [17], and understanding trajectories of timelines in shared interactive narratives [5]. The study of games is relevant in CSCW and related fields, just as it has been of interest in HCI [11], but has had a similar focus on play environments and outcomes rather than on player experience.

The process of cognition – making sense of the world – is deeply rooted in the “material and social circumstances” [58] of the setting; it is “fundamentally cultural” [27]. A gameboard and components are not merely situated in the present; they are situated in an inescapable, “historically and culturally constituted” context [58, 62] which recognises and gives rise to specific forms of “gaming capital” [13, 64]. Moreover, the gaming experience is situated in the interactions between individuals who combine their incomplete understandings of a situation to enable them to form decisions and plans [27].

The cognitive processes of cooperative work are, as Schmidt and Simone [50] note, “inherently distributed”. This cognitive work may be distributed across time, as is the case when people follow specified procedures, or simply make plans for specific events in advance. This precomputation [39] redistributes the cognitive work to a more convenient time when greater effort can be expended on planning for the event itself [50]. In playing a boardgame, as we will show, information is not only distributed amongst the human actors; it is also distributed across components and resources throughout the duration of the play setting. The essential materiality of the game artefacts – pawns, tiles, dice and boards – dictates that cognition in this situation is not merely distributed but also embodied, as it is in other articulated activities: “[it is] clear that contemporary cooperative ensembles would fail – completely and utterly — in their collaborative effort if they could only coordinate and integrate their activities by means of ordinary discursive practices, whether face-to-face or remote, oral or written.” [51]. Players understand the state of the game through not only their own but also their opponents’ interactions with the game artefacts, which can be described as a form of conversation [36].

Embodiment is an essential element of distributed cognition; “the human body and the material world take on central rather than peripheral roles” [24] and the studied environment is itself “part of a larger cognitive system” [65]. The direct physical interaction of “thinking through doing” frames information processing behaviours and highlights the importance of *epistemic* actions [31] – those undertaken “to better understand [a] task’s context” rather than to effect a particular task. Klemmer, Hartmann and Takayama [31], as discussed in Turner [62], give examples of realigning letter tiles in the boardgame *Scrabble* [10] to spell out words and rotating pieces in the computer game *Tetris* [40]. “The material world ... provides opportunities to reorganize the distributed cognitive system to make use of a different set of internal and external processes.” [24]. We will return to examples of this off-loading of cognitive work such as sorting, transforming and ordering, and note that epistemic actions represent one specific form of cognitive off-loading as part of a broader process of distributed cognition.

We do not restrict our understanding of in-game cooperation to what has been termed the “syntactic layer” of the game [36] – “the rules which constrain the physical”. This classification seems to restrict in-game cooperation and coordination to articulated activities such as moving pieces and scoring markers, and applying and negotiating rules. Although these activities are a focus of the current paper, we note that there are a host of cooperative activities which could be linked to the “strategic” layer – “where players strive to gain advantage over their opponent and eventually win the game” – and even to the “personality” layer – where players form opinions about other players. In-game resource trading [22] and “Kingmaking” [6], playing

to explicitly allow another player to win (or, arguably, its logical opposite, “kick the leader”), represent a form of cooperation between players that is distinct from the game artefacts, although they may be enacted by or through them.

Lastly here, we note the work of Easterbrook and others on the tenuous relationship between cooperation and conflict, particularly in organisations [16]. We distinguish the current paper by noting that the conflict at the boardgame table is simulated and is subordinate to the collaboration of following and enacting the rules, which themselves define and enable the competition. Play is a “voluntary attempt to overcome unnecessary obstacles” [59] and thus the conflict that it creates is also voluntary, or artificial. Cheating is the ultimate betrayal [6, 66] because it negates the underlying cooperation that is required to enable the competition.

PLAYING MODERN BOARDGAMES

Modern boardgames – particularly those in the modern European “Eurogame” genre [66] – are characterized by their limited playing time and short turns, emergent play rather than complex rules, focus on luck mitigation rather than random chance, indirect rather than direct conflict, multiple paths to victory, opportunities for negotiation and trading, attractive components and visual design, and constructive scoring methods rather than player elimination [43]. Although widely acknowledged to have been popularized through the 1995 release of *The Settlers of Catan* [61], the emergence of modern European boardgames can be traced clearly to the 1970s (e.g. *Hare and Tortoise* [41]) and even earlier (for a comprehensive discussion of the roots of modern Eurogames, see [66]).

Like other authors [14, 36, 63, 70], we understand the play of a game to be a form of co-operative work, even when players are directly competing against one another and “themselves are directly responsible for the operation and management of the game” [30]. In order to perform these necessary tasks, players must first collaborate to adopt and implement an agreed set of operational rules [48] at an agreed place and time and in an agreed manner: they must cooperate in order to enable competition. Players must not only agree on a rule set, they must enact and enforce it as well. These rules both allow and constrain players’ activities. In *Monopoly* [34], they roll the dice and move the allowed number of spaces; in *Carcassonne* [67], they draw and play a tile; in *The Settlers of Catan* [61], players trade “resource cards” but not “development cards”. Cooperative activities are necessary to enact the “arbitrary” [59] rules of the game.

Moreover, players bring to the table a range of negotiated activities which include the possibility of house rules, interpretations, conventions, or mores. When this cooperation breaks down, play breaks down. Notions of “fairness, sportsmanship and practicality,” are “unstable and unknowable” [54]; the negotiated or implicit rules of the game table [48] may even define “acceptable” game table discussion topics, for example, whether players freely

discuss religion or politics [54]. Such rules are “seldom if ever verbalized, except in cases of transgression” [6]. Woods [66] suggests that these implicit agreements owe their existence to an over-arching “meta-goal” of enjoyment of the game; Hughes [25] takes a similar approach. In this way, the cooperative element of play – which includes upholding what Huizinga famously called the “Magic Circle” [26] – appears to take precedence over competition.

Articulation work [57] – or “housework” [68] – is also important in facilitating gameplay. Schmidt and Simone [50] note that articulation work is an important tool for managing, or “curbing” distributed activities, although it may itself be distributed and require coordination. In the game setting, articulation work comprises the small tasks that enable play but are not described in an explicit rule set. In boardgame play, these include ensuring the supply of game components at the start of the boardgame and as it progresses, co-ordination of turn-taking and other key activities, and enforcing the rule set of the game [46]. A related set of didactic practices [52] encompass teaching and reinforcing of the boardgame’s rules. Players cooperate not only in playing a boardgame but also in articulating it, which in turn allows for play. Articulation is recursive [50]: in enabling play, it necessitates further articulation and coordination that, in turn, enable play.

METHOD

In this work, we aim to shed light on what serious leisure [55, 56] hobbyist boardgame play looks like, and on the types of interactions that occur during play. The aim of this paper is not to develop a theory that accounts for how all boardgames are played, but rather to explicate the complex relationship between competition and collaboration within the boardgame setting through rich description of key moments in play. Our methods are qualitative and focus on the lived experience of play, which is deeply and fundamentally intertwined with the players themselves as well as with their experience with the played game. That experience necessarily includes the tools which are available to the player – most particularly, the game board and components, which are used to enact gameplay. To this end, we have identified moments that appear to be important in the way that the players made sense of the game that they were playing. We will describe both the game and setting before analysing the situation of play.

Participants and recruitment

We ran seven boardgame sessions with a total of 33 people (15 female, 18 male). Two participants each attended two sessions. Participants were aged between 18 and 61; the average age was 39.8. Requests to be in the same session as another player were accommodated. Three sessions consisted of established gaming groups; that is, groups where the participants knew one another well and gamed together regularly, who changed the location of a regular gaming meeting. The remaining sessions consisted of players who were generally unknown to one another,

although some friendship pairs attended. Players were not remunerated for their participation, but light snacks were provided during the game sessions. Although sessions were scheduled to last two hours, each session ran late as the participants chose to continue playing past the allotted time.

We recruited using a snowball method [1] which started from social media announcements, with local boardgaming groups and clubs as well as other gamers invited to share the posts. We chose specifically to focus on serious leisure boardgamers; people who identified as boardgame hobbyists. Although in many of these situations some players were not familiar with the game that was played, they shared the common language and understanding of the serious leisure boardgaming hobbyist. In our experience, it is common for hobbyist game sessions to explore new games or to play games that are unfamiliar to at least some of the players.

All participants were asked to complete a questionnaire, which addressed their self-rated (out of 10) expertise with boardgames and digital games. Players rated their knowledge of boardgames relatively consistently, with a mean of 7.13 (Standard Deviation 1.35) and 90% of results falling between 5 and 9. The mode and median were both 7.

We also asked participants about their familiarity with the game that they played. 25% had minimal or no familiarity with the game (rating 1 or 2 of 10), 25% had some familiarity (rating 3, 4 or 5), 30% knew the game (6 or 7) and 21% were very familiar with the game (8, 9 or 10). The mean rating was 4.25 (St Dev 3.03; median 5, mode 8). Players who were more familiar with the game typically assumed the role of game teacher. Although we are aware of weaknesses in individuals' ability to self-assess [32], in this instance, we were interested in the assessments not as an absolute statement but as an indication of participants' relative familiarity with both the genre and the specific game played; it is the difference between the ratings, rather than the numbers themselves, that is of relevance. On average, participants rated their general knowledge of boardgames 2.64 points higher than their knowledge of the specific game played (St Dev 2.43; median 2, mode 1).

Venue

Sessions were run in the Interaction Design lab at The University of Melbourne. The researcher was able to view the large room where the play occurred through one-way glass as well as through a video feed from the monitoring cameras. Video cameras allowed the session to be recorded, and a wearable eye-tracker was worn by one participant in each session. Although wearable eye trackers are typically associated with complex data visualisation and sensor analysis, in this study, the eye tracker was used to add context and depth to our observations rather than as an experimental tool.

In the wild, Boardgame clubs and groups meet in many varied places: homes, bars and cafes, workplaces and

function rooms. The critical elements in selecting a suitable location appear to be the level of light and noise, to ensure that players can concentrate on the session [47]. As expected, participants found the lab well-suited for gaming. Tables and chairs were movable, although players were asked to keep the playing area under the overhead camera.

Game selection

We provided a total of 13 boardgames for the sessions. The criteria used for selecting the games were availability (to the researchers), player number, playing time and novelty, both in terms of the core game mechanics or mechanisms and in terms of the types of interaction that they invite. Games were displayed on a table, and brief information about each game was displayed on a noticeboard above the table: recommended number of players, genre and ranking, playing time and Boardgamegeek.com rank, as well as a brief description of the game.

Observation and analysis

To what have been termed the “rudimentary methods of immersion in a setting, direct observation, and the use of video to document the lived work of a setting and make it available to subsequent analysis” [14], we add the use of a wearable gaze tracker as an additional method of understanding the participants' experience [45]. In this study, we used the gaze tracker as a qualitative tool to supplement our rich understanding of the participants' experience, rather than as a primary, quantitative method for gathering data. Further, the player's-eye-view allowed us to understand the game components and interactions from the perspective of one of the players.

We observed and took notes during each session, and recordings were transcribed. After re-watching the video recordings, we used our observations from the real-time and recorded sessions to identify key sections for detailed analysis [23], and to further annotate them with description of activity at and around the table, showing “rigorous attention to detail” [44].

FINDINGS AND DISCUSSION

In observing the sessions and video recordings, we found that there was considerable evidence of distributed cognition as a necessary part of gameplay. Below, we present seven vignettes from four play sessions, which highlight the nature of distributed cognition in this setting, as well as the forms of cooperation that occur during boardgame play. For convenience, in each session, players have been numbered clockwise (in turn order) from the player wearing the gaze tracker; this is the person whose point of view is shown in the images below. Players' names have, of course, been anonymized. We first discuss *Hanabi* [4], an overtly cooperative game in which players must work together, before identifying similar behaviours during the competitive game *7 Wonders* [3]. Lastly, with an excerpt from a play of the competitive game *Concordia* [19], we demonstrate that the observed behaviours are not

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unique to teaching games but are also found in contests between players who all have experience of the game.

Session 1: Hanabi (5 players)

Hanabi – named for the Japanese word for “fireworks” – is a cooperative game in which players work together to place coloured cards on the table in sequential order from 1 to 5. In doing this, players are restricted by being unable to see their own cards: each player’s cards are faced away from them, so that the faces are visible to all the other players but not to themselves. A game of *Hanabi* typically takes about 25 minutes – it is limited by the time it takes to play through the deck of cards. On their turn, players choose to play a card, spend a “clue token” to give another player a piece of information about their hand, identifying all the cards showing either a particular colour or a particular number, or discard a card to regain a clue token for the team. Turns are short and rules are simple, as players simply choose one action from three. Incorrectly played cards trigger a “fuse” token – a countdown to a premature end of game. Complex decisions emerge from the combination of cards on the table and in other players’ hands as well as the player’s understanding and memory of what they have learned about their own cards. Players succeed or fail as a team; there is no individual victory condition.

In this group, Sara and Dan arrived together, but the other players did not know one another, although Tim and Julian had met briefly at a gaming event. Tim is the only player who has previously played the game, and is teaching it to the group. Dan is wearing the gaze tracker.

Vignette 1 (45 seconds): Tim has taught the game. Julian, who arrived late, has joined the table and is sitting in position 5, but is not playing the game, although the group offered to “deal him in”.

Tim (Player 2) leads by suggesting that the players are running low on clue tokens, so should play some cards; Dan (P1) plays a blue 1 to the table, joining the green and white 1s that have already been played. Tim congratulates him, and reminds him to take another card, both in words and by passing the card to Dan. Tim then announces that he is going to play a “1” card, and places a yellow 1 on the table. He looks at Dan’s cards; Dan studies the backs of the cards in his hand. He is holding one card at a different angle from the others. He speaks to himself: “All right, good. We’ve got one more colour of a 1. We’ve got a red 1.” as Tim draws a new card which he adds to his hand.

It is now Amy’s (P3) turn. Dan scans back and forth between her face and her cards as she decides what to do. She announces that she is going to discard something, taking a card from her hand and placing it face-down in front of herself. Tim reaches for the card and turns it over, explaining that everyone is allowed to see discarded cards. He places it closer to the centre of the table, then takes a clue token from the box lid and returns it to the table. Dan looks at the discarded card and at the clue tokens.



Figure 1 Vignette 1, [13:30]. Dan’s point of view. Tim (left) has just drawn a new card; Dan is looking at the played cards on the table. Above and to the left of his gaze, we see three remaining clue tokens on the table. In Dan’s hand, the right-most card is held at a different angle; opposite him, Sara also has one card (a yellow 3) separated from the others.

Tracking Dan’s gaze during this vignette highlights the importance of the different elements of the game environment as part of an overall cognitive system: the cards in his own hand, whose faces he cannot see, as well as the other game elements; the cards in other players’ hands, the “played” cards on the table, the cards that have been discarded, the clue tokens in the box lid and on the table, and the “fuse” tokens which act as second – and third – chances. It is only by combining all of these elements that a player can understand the current state of the game and gain the most understanding from the clues that they are given. Even after Dan has taken his turn, we see him continue to actively engage with these different elements, making sense of the game state by combining his knowledge of them.

Here also, we see Tim articulating the game not only by teaching the rules but by manipulating the pieces as well, in support of the rules – passing the cards to players, turning over Amy’s discarded card and moving it to a better position for the other players to see, and turning over the clue token. Information passes from the players to the pieces, where it is accessible to the players as the game continues. Through these articulation actions, Tim reinforces the taught game rules and also supports the cooperative nature of the game *Hanabi*, underlining the requirement that the players work together rather than independently. These articulated “chores” support players’ engagement with each other and with the game [68]. We see this overt cooperation also in the language used by the players – Tim praises Dan’s card choice, which reinforces his teaching, and later Dan also praises Tim’s playing of the yellow 1 as something that “we” have done.

In the image above, both Dan and Sara (P4) are holding one card in a different way from the others – either physically separated, or differently oriented. They use the physical orientation of their cards as a reminder that they have information about that card, offloading the task of remembering which card is important to them to its

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physical orientation. This behaviour becomes more pronounced later in the session.

A further point of interest which is highlighted in this vignette is the use of explicit performative language to enact the game. When Tim says, “I’m going to play this 1,” he makes it clear that he is playing – rather than discarding – the selected card; similarly, Amy states upfront that she is discarding – rather than playing – a card. Whereas in other games, it is sufficient and unambiguous to move a piece [36] or to take a card from hand and place it on the table, in *Hanabi* the distinction between *playing* and *discarding* is critical and must be stated explicitly, as the game does not materially make this distinction (for example, by designating a place or orientation for the cards).

Vignette 2 (13 seconds): It is now Dan’s turn.

Dan, considering his turn, is looking at the played cards on the table as well as the cards in Amy’s and Tim’s hands. Amy asks Tim, “If I took the risk and I took one of my 2’s, and there wasn’t the one there for it to go on, then that’s a mistake?” – Tim clarifies that yes, that would be a mistake. Dan looks briefly at the discarded card, then at Julian, who asks, “You don’t have to know which one?” before he looks back at Amy’s cards. Tim clarifies, “You don’t have to know. You can know that it’s a 2, and we’re taking plenty of 2’s at the moment, so it’s a valid play.”

This vignette further highlights the way that knowledge of the game is distributed amongst the players and the game components, as Dan considers the cards in Amy’s and Tim’s hands as well as those that have already been played. Lacking information about his own cards, Dan synthesises information from these different sources to tally with the clues he has – or has not – been given.

Although Julian does not know the other players, and has not played the game before, in this snippet we see that he has seamlessly “coordinated in” [27] to join the conversation and discussions. He observes later that by not playing the game he is able to access more information than the players: “I can see everyone’s cards. I can see what everyone should be doing.” By orienting players’ hands to hide information from the holder of the cards, *Hanabi* privileges the view of the observer who can see everything. This is unlike other card games, where players can see their own cards and where an observer would have to walk around the table in order to see players’ hands, and would not be able to see every hand at once. In this game, because there is no information about the current set of cards that is hidden from Julian, he has access to all of the distributed information about the game’s state.

Vignette 3 (12 seconds): Sara, who is taking her turn, realises that she has forgotten some essential information about her hand.

“I’ve forgotten which one is the 5,” says Sara. “I think it’s this one. (they all laugh) I should have done what you did.”

She points to Tim, who is holding one of his cards between his ring finger and little finger. “That’s right, says Julian. “It’s the 5-holding technique.”

Tim grins. “My pinky finger is cramping up a bit, though.”



Figure 2 Vignette 3, [33:15]. Dan’s point of view. Dan looks at Tim’s “5-holding technique”.

This very short snippet is interesting for the overt discussion of the way that Tim has offloaded the task of remember which of his cards is the most important (a 5), using the physical orientation of the cards to help him to remember what he knows about them. Sara, who has forgotten which of her cards is a 5, recognises and comments on the value of this epistemic ordering activity. A further benefit to Tim’s “5-holding technique” is that it reminds the other players that he knows that that card is a 5, reducing the risk that they will duplicate a clue that he has already understood.

Session 2: 7 Wonders (5 players)

In *7 Wonders* [3], each player takes the role of a leader of a great city of the Ancient World, producing resources that they use to build buildings and Wonders. Resources, buildings and Wonders are represented by cards, which are apportioned through the three stages, or “Ages” of the game. In each round, players “draft” cards by simultaneously select a card from their hand and then, once everyone has selected, reveal it and add it to their tableau – an assemblage of their player board and played cards. The remaining cards in their hand are passed to the next player, and the process repeats until there is only one card remaining; this is discarded. The game’s relative complexity is mitigated by this simultaneous drafting which comprises multiple micro-turns rather than a longer sequence of actions. Interesting decisions emerge through the interaction of played cards and the hand of cards that players draft from. The drafting mechanism also reduces the element of random chance in the game, as players have an opportunity to select cards that will most favour their own strategy and limit their opponents’. This simultaneous play mode requires articulation, as the players must select and play their cards together, display them in their tableau, and ensure that their discarded cards are passed to (and received by) the right person. Each player’s tableau shows all the cards that they have already played, and the special

abilities or resources that they confer. To play strategically, players must monitor other players' activity and avoid passing overly valuable cards to their opponents whilst selecting the best cards to achieve their own goals. In-game conflict is indirect: players earning tokens for having larger armies than their neighbours, and there is no direct conflict. In the final scoring, there are seven distinct ways to score Victory Points.

In this group, Cora and Julie are friends, although they volunteered for the study and travelled separately. Max, Anne and Sally volunteered to participate independently, and did not know one another before the session. Max is wearing the gaze tracker. Sally rates her expertise with the game at 10/10, Julie 7/10, Cora and Anne 3. Max has not played it before (1/10).

Vignette 4 (47 seconds): The first card draft of the game.

Sally (Player 4), who has explained the game's rules, talks the players through the first round: "We're each holding seven cards. We choose one of them. We put it down face down in front of us and pass the remaining cards to the left." Max (P1) looks through his cards. Sally chooses a card from her hand and places it face-down in front of her. Cora (P3) has chosen a card, and has placed a face-down stack of the cards she did not choose between her and Sally. Julie (P5) repeats, "To the left," and Sally offers some advice: "Pick a card that you like." Anne (P2) repeats this, "Pick a card that I like." Meanwhile, Max is looking through his cards, turning them all the right way up. He looks at their names and at what they do.

Sally clarifies: "Well, pick a card that you want to play with for some reason." and Julie adds some additional information about understanding the cards: "Where there's a pink slash, a forward slash, it means either of those things." Cora reminds Anne to pass her discarded cards.

Max chooses a 'Guard Tower' card and places it face down in front of him, below his tableau. Cora, Anne and Sally have also chosen cards.

Julie places her card face down in front of herself. She places the remaining cards in her hand to her left, ready to pass to Max. "Ready?" she asks. Sally and Cora reach for their face down cards and Sally asks, "Everyone has chosen a thing?"

"Yep," says Julie. "We reveal," says Sally, and they all turn their cards over. Cora's and Sally's cards are on their boards, Max's is below his. "Ta-da!" says Julie, then adds (to Max), "Convention is to put it above your board so that everyone can see what you've got." Max moves his card.

"Mine cost one," says Sally, "so I'm putting one into the pool." She puts a coin into the supply.

In this vignette, we see players anticipating the next actions and aligning the game components to support them. Thus, Sally and Cora immediately reach for their face-down cards

once all players have chosen a card to play, and Julie places her leftover cards to her left, ready for Max to take as the next turn starts (Cora does likewise). The apparently empty spaces of the table form part of the game space, being appropriated for these tasks of passing and ordering.

As in previous vignettes, we see strong didactic and articulation behaviours in this snippet, especially from Sally, the player most familiar with the game, who has taken on the role of game teacher. In her explanation, the in-game action of choosing a card is clearly and essentially linked to embodiment; the specific physical action of aligning the card face down on the table is required in order to enact the game. This activity of placing cards face down is overtly described and defined in the rules of the game.

As well as teaching the rules of the game, Sally is coaching other players through decisions. For example, she tells Anne to pick a card "that you want to play with for some reason". Meanwhile, Cora supports Anne by telling her where to pass her remaining cards, when she notices that Anne is unsure. There is no need for a request or acknowledgement beyond the passing of the cards.

Julie also adds not only game rules but also epistemic "conventions" such as those governing the alignment of the selected card. We consider this placement of the selected card to be a negotiated rule, as it is not specified in the game's official rules. By following Julie's convention and placing cards above their tableaux, players make it easier for others to see which card they have played. As the cards are the primary source of resources in the game, it is important for players to be able to see this information in others' tableaux. This highlights that knowledge of the current state of the game – encompassing the history of the play – is not only distributed amongst the players but is also embodied in the game components. A face down card above a player's tableau shows that that player has already selected that card to play in this round; a pile between two players contains the unchosen cards that are passing to the next player. The combination of the face down card and passed pile shows that the player has already chosen their action for the round. The face up cards display information about resources and abilities that they produce or confer, which can be read by any of the players or by an observer.

After all players have selected their cards, Julie and Sally both use overt checks, in a largely rhetorical exchange (Everyone has chosen a thing? / Yep / We reveal). This has the effect of reminding the other players of the structure of a game turn (all choose and then reveal simultaneously), as well as heightening the drama and spectacle – hence Julie's "Ta-Da!" as the cards are revealed. Similarly, Sally talks through her payment of the required coin, drawing attention to it and using explicit language to enact it. This is a teaching moment, reminding newer players that there may be costs associated with the play of a card, and may also be a deliberate tactic to demonstrate that she is not cheating. Unlike the card play in *Hanabi* (V1), this performative

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language is not required to enact the game. For the purposes of the game, it would be sufficient for Sally to play her card and pay the money, as the requirements (and her actions) are unambiguous.

Vignette 5 (32 seconds): (later in the same game – the last action of the first Age.).

Four of the players have chosen a card to play, but Cora has not. Julie reaches for her card, asking “Shall we?”

“Hang on,” says Sally, “Cora.”

“Hang on. Hang on,” says Cora. “What’s the Tavern do again?” She is holding one card in her right hand and examining it closely. The other is held in her left hand. Max looks briefly at her name tag.

“It gives you five money,” Sally replies. Max looks at Sally’s tableau and then at Sally.

“Straight up?” Cora asks. Max looks at Cora’s tableau.

“Yep. That’s all,” says Sally. “Well, and it counts as a yellow card later.”

Anne joins the conversation: “Oh, I misunderstood that.” Cora, who has continued to examine her cards, places the card in her left hand face down on the table and moves it toward the discard pile. She places the yellow Tavern card face-up in her tableau. Max looks at Anne’s tableau.

“Sorry,” says Sally. “It’s not in the corner where the costings, it’s in the middle which is why ...” Max and Sally (visible) are turning over the cards they had selected and placing them into their tableaux. Max looks at Cora’s tableau.



Figure 3 Vignette 5, [01:10:05]. Max’s point of view. Max has turned over his selected ‘Stone Pit’ card. Opposite him, Sally is revealing her own card while to his left, Anne is touching the card she originally chose.

“Can I change something then?” asks Anne. Sally agrees: “Sure.” Anne takes the top card from the discard pile and looks at it, then places it aside, still face down, and takes the next card from the pile. She looks at it, then moves the card that she had chosen onto the discard pile. Max adjusts his played ‘Stone Pit’ card and looks at it.

“Oh, good,” says Sally, “I’m glad it didn’t affect Cora’s turn as well.”

“No. It’s just I didn’t [mumble] that,” says Anne. Max looks at Anne’s tableau.

“Are we good to go? Are we doing our what-nots?” Julie asks. Anne reaches for her card to turn it over and add it to her tableau.

This snippet demonstrates the distributed awareness of the game state; it is immediately clear to Sally that Cora has not yet placed her card. Sally’s “Hang on, Cora” is deictic; it refers to Cora and draws the attention of the other players to her. Its intent – which is achieved – is to alert the other players that Cora has not yet selected a card to play. Cora indirectly acknowledges this by responding to the group, mirroring Sally’s language in asking the other players to “hang on” while she completes her turn.

Cora’s confusion over the value of the Tavern card is clarified by Sally, who recognizes the origin of the confusion. In *7 Wonders*, the cost to play a card is shown at the top left; the resources that it produces are shown in the centre. Cora and Anne were apparently unsure whether the Tavern produced 5 coins or cost 5 coins to play. This confusion highlights the importance of consistent structures for presentation of information which Sally, who is familiar with the game, understands and attempts to explain. The colour of the card also carries important codified information for the player that makes it easier for them to group and order similar cards. Cora’s Tavern card, like those representing other commercial buildings, is yellow; Max’s chosen ‘Stone Pit’ card is brown, and has an image of a stone block at the top of the card. The card’s brown colour shows that it provides raw materials; the image of the stone block at the top shows that it produces one stone; there is no cost to play the card. Max places it behind and slightly above his ‘Forest cave’ (which produces either wood or ore as required) so that all the players can see – at a glance – which resources he currently produces.

The discard pile provides a further piece of essential information. With four cards on the pile, Cora can see that she is the last player to select a card. When she plays her card, she places it face up rather than face down, as it is the trigger for other players to reveal their own cards. Not only has she identified and interpreted this information, she uses it as the basis for her own action.

In this vignette, we see rules negotiation in action. Realising that she has misvalued the relative strengths of her two cards, Anne asks the group for permission to take back her selection, effectively exchanging her chosen card for the one that she had discarded. Sally, as the designated teacher, gives her permission on behalf of the group, confirming the negotiated rule change that allows Anne to undo her action. None of the other players comment on this; they tacitly accept Sally’s decision. The group is cooperating to allow Anne, one of the less experienced members of the group, to improve her play. This also occurs in Hughes’ observation of girls playing foursquare

[25], and aligns with the finding that intellectual challenge is one of the great pleasures of boardgaming [47, 66]; players prefer to play against competent opponents and will even bend or renegotiate rules to allow their opponents to avoid making mistakes. They will cooperate to allow each player to achieve their best outcome, even at the expense of the formalised rules of the game. The joy of winning is not in greater rules knowledge but in more skilled play.

When Anne goes to retrieve her discarded card, the structure of the pile – a tiny use-history [24] – helps her. The most recently discarded card is on the top; she picks it up, then realises that it is the card that Cora discarded after her own discard. She then draws the next card, which is the one she discarded, from the pile. The order of the discarded cards makes it clear to all her opponents that this was indeed her card. Also of interest is Cora's use of both of her hands in deciding which card to play; she separates her cards, holding the one that she is considering playing in her right hand and the one that she intends to discard in her left hand, closer to the centre of the table and the discard pile. Players use the orientation of game components to assist their memory functions, in both planned (card holding) and unplanned (retrieving a false discard) situations.

Not overtly discussed, but apparent in the video recording, is the way that the players' tableaux develop as play progresses. Each player's played cards are clearly displayed, showing what resources and special abilities they can access and how much progress they have made towards particular goals. When it becomes clear that Cora is carefully considering her actions, Max becomes interested in her already-played cards, glancing at her tableau to get a sense of what she has already done.

Session 3: Concordia (4 players)

In *Concordia* [19], players compete to build a productive empire in Roman times by colonising new cities and building a productive economy by producing and trading goods. With a playing time of around 90 minutes, *Concordia* is a longer game than the other two we discuss here. Nevertheless, its playing time is limited by short turns with simple decisions, which become more complex as the game is played and more material is placed on the gameboard. Players choose actions – which include movement, building, earning money and resources, and acquiring new cards – from a personal deck of cards, which they may add to as the game progresses. Throughout the game, players compete indirectly to acquire resources or to be the first to build in cities or acquire helpful cards. Through acquiring action cards which also serve as point multipliers, they can directly influence the computation of their score. Although conflict in the game is indirect, it is deeply strategic and has the highest complexity rating on Boardgamegeek.com of the three games discussed in this paper: 3.14 out of a maximum 5, as compared to 1.7 (*Hanabi*) and 2.34 (*Wonders*).

This group of four regularly plays together, and have played *Concordia* before several times; indeed, they chose it as their preferred game before coming to the session. Tiberius and Flavia are father and daughter, while Crispus and Drusilla are a married couple. Tiberius rates his familiarity with the game at 9 whilst Flavia and Crispus rate themselves 8. Drusilla rates herself a 6, and also gives herself the group's lowest rating for boardgame familiarity (7 compared to Flavia's and Crispus's 9s and Tiberius's 10). Flavia (P1) is wearing the glasses.

Vignette 6. The players are setting up the game. They must establish the most valuable randomly assigned resource in each of the board's 12 provinces and place a corresponding token on the summary province display.

Each player turns over the random resource times in the section of the board closest to where they are sitting. Drusilla (P3), who is closest to the province summary table, is placing tokens onto it.

"Mauretania is also wheat," says Crispus (P2), pointing to Mauretania.

"Playing with Salsa, though, you can end up with brick," says Tiberius (P4). He picks up the deck of cards from the card display and shuffles it.

"Can you?" asks Crispus, as Drusilla puts the wheat token on Mauretania. "Yeah," answers Tiberius, as he picks up the Concordia card and places it underneath the deck of shuffled cards. "That's salt and that's brick." He points to the two cities in Libya. Flavia is looking at Tiberius as he speaks; we cannot see what Drusilla is doing. "So, your province is brick," continues Tiberius.

Shortly after this conversation, the players set up their player boards; Crispus passes each player the required starting resources. Although each player starts with the same resources, they each set up their board differently. Some sort resources by type and others use their boards to plan their first actions by grouping together the resources needed to build particular resource-producing cities.

This interlude shows the four players "coordinating in" to set up the game together. Without discussion, each has taken responsibility for a different element of the game setup, driven partly by their location. Drusilla sits beside the province summary table, Tiberius beside the card display. There is no discussion of their tasks – in fact, Crispus and Tiberius are discussing the game's *Salsa* [20] expansion which only Tiberius has played and which introduces changes to the base game's rules. Thus, placement of wheat in Mauretania becomes a discussion of alternate rules; "Your province is brick" does not refer to the current game but to a hypothetical game of *Concordia: Salsa*. This conversation also serves to fill in the gap while Drusilla finds and places the wheat token for Mauretania before they can establish the resource for the next area.

The province summary table is itself a coordination artefact [50]. Players could, in theory, check the game board each time they needed to establish the most common resource in an area, however it is easier to check a single element on a summary table than to compare several elements on an increasingly crowded board. Similarly, the player boards enable players not only to sort, count and arrange their resources but to plan their early actions.

Although each player performs their own job, they are attentive to the other tasks that are being performed and are able to participate in that discussion if required. Moreover, in this segment, we see an interesting negotiated form of play, perhaps inherited from the group's previous plays of the game: the players extend the game's Roman theme, reading literally from the Latin font used for the game (e.g. "MAVRETANIA").

CONCLUSIONS

In this paper, we have explored the complex relationship between cooperation and competition in boardgame play. Using the lens of distributed cognition, we have demonstrated that forms of cooperation occur not only in overtly cooperative games but also in competitive games, and that they are found in both teaching situations and in the play of those with considerable experience in the game. Cooperation is necessary to enable the artificial conflicts within the game, and takes many forms – it is not limited simply to articulation activities. Essentially, cooperation occurs not only between the players themselves; the game components play an important role.

Boardgame play is a form of cooperative work that is situated, embodied, distributed and articulated. As we have shown, the play of a game encompasses complex relationships between the players and the material game components. At times, this extends to allowing the players to renegotiate rules, for example in allowing a player to change their selected action (Vignette 5). Not only are the components used to enact the game, they are also used by the players in epistemic tasks of sorting and ordering (V6). These tasks help players to remember key information as well as to plan for their future actions, allowing them to offload key cognitive work onto the components, and to observe the state of the game (V2, V3, V6). In some cases, the tasks are prescribed by the game rules to control how the components are used to manage information; in others, they are formulated and introduced by the players themselves to simplify or clarify gameplay, either in the form of a negotiated rule or as an imposed convention. An example of this is V4; Julie's insistence that Max place his chosen card above his tableau. Knowledge of the game's state is distributed not only amongst the players but also amongst the material components of the game, and moves between and amongst them throughout the game.

This appropriation of the pieces for offloading cognitive tasks has important ramifications for designers of boardgames as well as of the growing number of digital

implementations of boardgames and boardgame-like games. Currently, digital games typically show a player's money and resources as numbers, rather than as objects that can be manipulated. Making this manipulation visible, as Sally does in V4, ensures that the transaction is evident to her opponents and helps players to understand the implications of certain actions [63]; but automatic implementation in a computer game prevents deliberate and accidental cheating. Given that players seek to offload cognitive tasks and plans onto the game components, designers of digital games should develop flexible interfaces [12] that allow players to group and reorient representations of the game components within the digital interface, "reorganiz[ing] the distributed cognitive system" [24] as they do in a material boardgame. This preferences the player's own use of the components to implement the game over the designer's view of how the components should be implemented and recognises the rich trajectories along which information moves between and amongst players and components. In digital games, as in their material counterparts, the player should be allowed to make sense of their components by grouping, sorting and ordering them to support their own cognitive processes, mirroring the way this activity is observed to occur in material play (V6). Digital representations often remove the possibility for cognitive off-loading of information through these core epistemic tasks by neglecting the affordances of the material resource tokens.

Through careful attention to the play environment, we have shown how both players and observers make use of the various use-histories and other sources of information available to them through the game environment: their own and others' played pieces, discarded pieces, cards in hand and other tokens, as well as the game rules themselves. Players plan their actions not only during their own turn but during other players' actions as well, when they maintain active engagement with the game (V1), and even before the game starts (V6).

Lastly, we have demonstrated that in playing a game, players collaborate in a variety of ways, not only in adhering to the prescribed and negotiated rules but also in making sense of them within the play environment: enacting and interpreting them, supporting one another in this process and even in playing with the theme of the game (V6). When errors occur, they are resolved and corrected by the players; with no outside agency beyond the (collaboratively interpreted) rules to dictate the consequences, these rules exceptions must be negotiated [6]. Further, players must cooperate to maintain an operational focus on the game rather than on the social activities that accompany it; collaboration is a necessary, ongoing, and inherent part of the work of playing the game. Throughout the game, whether the rules are cooperative or oppositional, competition and cooperation go hand in hand. As Flavia commented after the game of *Concordia* (V6), "We're not helping each other to win. We're helping each other to play, to make someone win."

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8.6. Discussion

In the context of this thesis, this paper introduces the ‘Boardgaming’ perspective. Responding to RQ4, it describes the importance of materiality in the play of a boardgame. Materiality is not only valued intrinsically, it also enables the distributed cognitive environment of play.

This paper focuses on the play of a game and the ways in which the players cooperate during play. Liberman (2013, Chapter 3), in contrast, considers the cooperative activity of rules learning. He shows, similarly, that this is a cooperative practice. Unlike the hobbyist boardgamers of my study, Liberman’s participants are students who appear to be predominantly casual or non-gamers. They appear unfamiliar with reading rules and with modern hobbyist boardgames. They struggle to interpret rules that “might as well be written in Greek” (Liberman, 2013, p. 84) and are required to negotiate situations that appear to fall “outside of what the rules provided” (Liberman, 2013, p. 86). In a different study, Kew (1987) turns attention to contested and changing rules in sporting situations. He conducts a form of breaching experiment (Maynard & Clayman, 2003, p. 177) to explore the ways that groups of people accomplish an activity – in this case, playing a sport. He identifies that there are two levels of the ‘accomplishing’ of play: first, rules are negotiated and established, before they are consolidated through attempts to sustain or maintain those rules. Like Sniderman (2006), he finds that many rules are tacit or unstated and are therefore enacted cooperatively.

This was the final piece of work produced for this thesis. It brings together my previous work on Boardgames and Boardgamers to show how they come together through play. It builds on the findings of my previous studies – the deep understanding of hobbyist boardgamers (Study 2/RQ 1 and 2) and of the transformative effects of digitisation (Study 1/RQ3) – to provide a detailed and thoughtful analysis of the situated activity of boardgame play.

Chapter 9.

Discussion and Conclusions

9.1. Introduction

This research began with an interest in the culture and practices of ardent hobbyist boardgamers. Chapter 1 established the motivation and Research Questions for this thesis. The question “How do serious leisure hobbyists experience and practice boardgaming?”, was extended to three subquestions:

RQ1. How do serious leisure boardgame hobbyists describe and define their hobby?

RQ2. How is serious leisure boardgame hobbyists’ conceptualisation of their hobby realised in their practices of engaging with it?

RQ3. How does digitisation of boardgames affect the practices of serious leisure hobbyists?

Data from the first two studies pointed to a new question, which guided Study 3. This emphasised the importance of materiality to players:

RQ4. What is the role of a boardgame’s materiality during play?

After discussing the findings of each stage of this research in Chapters 4 to 8, this chapter returns attention to the key themes of this thesis: hobbyist boardgamers and their practices, the role of digital technologies in this traditionally non-digital form of play, and the materiality of boardgames. It identifies disciplinary and methodological considerations for the study of boardgames and of boardgame play more specifically. Lastly, this chapter considers the quality and limitations of this research and discusses opportunities for further research arising from these studies.

9.2. Hobbyist boardgamers practise what they preach

As interpretivist constructionist research, this research was guided by a motivating desire to understand hobbyists' engagement with boardgames. Chapters 5, 6 and 7 deal directly with the findings of Study 2, a series of eleven interviews with hobbyist boardgamers. Through them, this thesis provides an understanding of what it means to be a hobbyist boardgamer. This is reflected in Chapters 4 and 8, which examine the practices of hobbyist boardgamers in engaging with ideas around digitisation of boardgames (Chapter 4) and in physically playing the games (Chapter 8).

This rich understanding of the practices and engagement of hobbyist boardgamers responds to RQ₁ – understanding how they describe and define their hobby – as well as to RQ₂, which seeks to understand how that conceptualisation of the hobby is reflected in the behaviours and practices of the hobbyist boardgamer. Chapter 6 presents an overview of the characteristics and habits of the hobbyist boardgamer, highlighting not only what they *say* but also what they *do*. This chapter discusses the four pillars of hobbyist enjoyment of boardgames and shows that boardgamers value sociality, intellectual challenge, materiality and variety. Chapter 7 extends this discussion to show that hobbyist boardgamers do not just *say* that boardgaming is important to them, but actively seek out opportunities for boardgaming even when their setting impacts on one of these factors.

Further, the lived practices of hobbyist boardgamers highlight the importance of sociality, materiality and intellectual challenge in particular³⁵. Although hobbyists would “rather play face to face” (Trammell, 2010, p. 17, as cited in Chapter 4), when a suitable opponent cannot be found, the digital game provides a backup. Hobbyist boardgamers do not just enjoy the materiality of a game, they seek to customise and protect it, and even to enhance it (Chapter 5). In play sessions, they integrate social interaction with play, discussing the value of potential optimal moves or actions and collectively allowing players to “take back” their choices (Chapter 8).

³⁵ I was not in a position to observe ‘variety’ during any of these studies – although note that none of the groups in Study 3 chose to play the same game twice.

9.3. Boardgames and digital technology

There are two main ways in which digital technologies are used within the boardgame genre. One is for play; many boardgames are available for play on a range of digital devices, as discussed in Chapters 4 and 7. Through their device, the player can play not only with co-located opponents but also with distant friends and even with strangers. Digital engagement is not, however, restricted to play. Through digital technologies, hobbyist boardgamers can engage with gaming and with hobbyist communities even when they are not actually playing.

RQ3 set out to examine the effects of digitisation of boardgames on the practices of hobbyist boardgamers, both through Study 1 and through a broader exploration of hobbyists' attitudes to and use of digital technologies in the interviews for Study 2. The sense that playing boardgames constitutes a rejection of technology persists across multiple sources in scholarly literature as well as in gamers' comments and descriptions of their hobby.

“While analog experiences can provide us with the kind of real-world pleasures and rewards digital ones cannot, sometimes analog simply outperforms digital as the best solution.” (Sax, 2016, p. xvii).

A reservation with this focus on ‘analogue’ (which is presented as ‘not-digital’) is that it defines boardgames by what they are *not*, rather than by what they *are*. If the appeal of boardgames is found in their non-digital nature, why are hobbyist boardgamers not also (analogue) cooking, doing (analogue) yarn crafts, (analogue) rowing, or taking (analogue) nature walks? Boardgames, like these other activities, are more than ‘not-digital’; they are unfolding experiences, supported by physical components.

This section examines the two distinct forms of digital engagement. Firstly, it considers playing games on digital devices. Secondly, it discusses the use of digital technology as a means to participate in the boardgaming hobby.

9.3.1. Playing games

Chapter 4 identifies three tensions around the process of digitising boardgames: the interaction metaphor, the realisation of articulation tasks, and the strategic reuse of game data that is ‘informed’ (Zuboff, 1988) or ‘theorycrafted’ (Paul, 2011). This discussion is extended in Chapter 7, which shows that players may use

digital games as a strategy for engaging in play even when face to face opponents are not available.

Playing games on digital devices allows gamers more opportunities to play. They may fill in time in meetings or during a commute by playing a game, speed up the time taken to play a game by choosing an online version, or use digitised boardgames to enable play with absent friends or when local opponents are unavailable (see Chapters 4, 7). Importantly, though, what they are playing remains clearly a digitised version of the original boardgame; it remains turn-based and typically preserves the interaction metaphor of the cardboard original, digitising dice, cards, tiles and other components and even preserving the shape of the pieces. Moreover, the rules are expected to be the same; I have heard anecdotes describing people using digitised versions of games as a source of rules truth, confirming the details of a particular rule by observing how it was digitised. As described in Chapter 4, this digitised interpretation of the rules is reified when the rules implementation is carried over to non-digital play.

As well as providing access to new markets, digitisation can encourage regular engagement with the game through the requirement for microturns – short, usually single action turns that can be taken at the player's leisure. As I describe in Chapter 4, digitisation can be an important source of new customers, with sales of digitised boardgames leading to sales of the physical product (just as sales of a boardgame may also drive sales of its digitised equivalent).

9.3.2. Being in the hobby

Chapter 6 describes five distinct ways in which hobbyist boardgamers engage with their hobby on digital devices. These activities of researching, collecting, cataloguing, discussing, and tracking are not themselves play, but they nevertheless support it, and I present them as part of the extended hobbyist activity of boardgaming. This set of digital practices both consumes significant amounts of time and energy and frames their engagement with their hobby, in similar ways to those shown by other participants in digital communities.

Whether we call them Social Worlds (Clarke & Star, 2008; Unruh, 1979), Communities of Practice (Lave & Wenger, 1991), Communities of Play (Pearce & Artemesia, 2011), or Serious Leisure groups (Stebbins, 1982, 2012, 2015a), there is a common set of behaviours that are observed across these digital communities. I term the space of these activities the “Digital Hinterland” not in the colloquial sense of an abandoned wasteland or backwater but using the geographic metaphor of the area that supports and enriches a shipping port. It enriches hobbyist participation and allows boardgamers to accrue hobbyist expertise, even whilst valuing the physical materiality of boardgames.

Opportunities to participate online in game communities encourage and deepen engagement with hobbyist boardgaming. Community participation on BoardGameGeek makes ideas about games material. For example, each game page features a poll which queries the optimal number of users. Answers are presented to users as part of the game’s information (see Figure 9.1). Participation enables collaboration – for example, in resolving rules questions and assessing whether a game is suitable for a group. Further, participation supports distributed cognition, for example when a user combines multiple game collections to find out which of their friends owns a particular game.

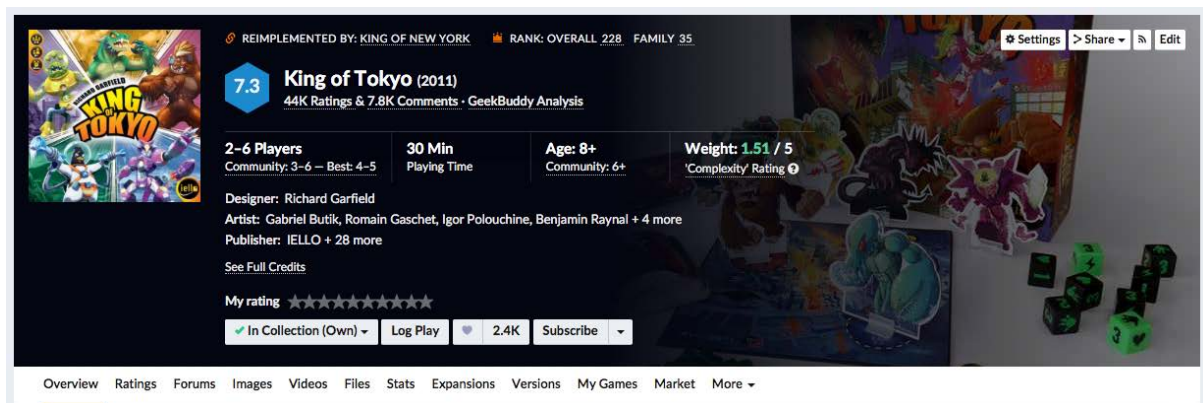


Figure 9.1 Excerpt from the BoardGameGeek page for *King of Tokyo*. Although the game is sold as suitable for 2-6 players, BoardGameGeek members suggest that it is best with 4-5.

9.4. Boardgames are material

Building on the understanding of hobbyist boardgamers, this thesis adopts materiality as a basis for exploring the way that hobbyist boardgamers speak about boardgames (Chapters 5, 6), the way they appropriate the components in playing – and playing with – boardgames (Chapter 5), the way that game components are represented in digitised forms of games (Chapter 4), and the way that hobbyist boardgamers use the objects of the game to make sense of the game and to plan and enact actions (Chapter 8). Materiality underlies this exploration, but boardgames themselves are the focus of this work.

This understanding responds to several of the Research Questions that motivated this thesis. As Chapters 5 and 6 demonstrated, materiality is fundamental to the way that hobbyist boardgamers speak about boardgames (RQ1) – the “lovely dexterous, sensuous feeling you get from just interacting with the physicality of the game” (P10 [Oliver], as quoted in Chapter 5). Hobbyist boardgamers play a game but they also play *with* a game, stacking and ordering pieces, arranging them, reflecting them in household items and even in personal adornment, as jewellery and as body art. Moreover, they act on this core value, customising and protecting their games and game components (RQ2). Finally, they use the game’s materiality during play both as a situated tool for planning and as an element in the game’s distributed cognitive system (RQ4).

A game’s physical existence both demands co-located play³⁶ and enables it by presenting a framework of components and rules that, together with a group of willing players, creates opportunities for play. This section addresses the importance of materiality. Section 9.4.1 examines the role of game rules and their relationship to the game. It explores the relationship between rules, game components, players, and the sociocultural context in which play occurs. Section 9.4.2 extends this discussion to explore how digitisation has affected this relationship and how that affects gameplay and the relationship between players, rules, and components (RQ3). Section 9.4.3 shows that materiality is fundamental to the game and to the distributed cognitive

³⁶ Play-by-mail or Play-by-email games are, of course, exceptions to this.

system which it encompasses (RQ4). Lastly, Section 9.4.4 returns attention to the broader context of play and examines how – and why – materiality *matters*.

9.4.1. The role of rules

The boardgame itself – the components or “bits” (Chapter 5) and the box that contains them – is material; as described in Chapter 2, play is an assemblage (Deleuze & Guattari, 2013 [1980]) that melds those fixed, material pieces with the sociocultural setting of play, with the people who play, and with a lusory attitude (Suits, 2006). A game’s components are deployed in support of its rules, which are a resource for the situated action of play (Kew, 1986, p. 317; Liberman, 2013, p. 134).

Just as “affordances and constraints are constructed in the space between social and material agencies,” (Leonardi, 2013, p. 38), the operational rules of a boardgame connect the game’s components and the players. A game’s components *enact* the rules, making them material. The rules, in turn, *empower* the components with abilities and representations; within the game, wooden cubes can become valuable resources or powerful armies, capable of repelling invaders or defeating monsters. Rules *constrain* play (Kew, 1986, p. 311; Salen & Zimmerman, 2004, chapter 12; Suits, 2014, p. 34), in that they “prohibit use of more efficient in favour of less efficient means” and confront the player with “unnecessary obstacles” (Suits, 2006, p. 190), however rules themselves are not fixed and unchanging (Liberman, 2013, pp. 83-134). In practice, they are “fragile and permeable” (Kew, 1986, p. 308), constantly *interpreted* and reinterpreted through the played experience and the implicit rules that each player has internalised (Salen & Zimmerman, 2004, pp. 130, 148; Sniderman, 2006), as well as through an ongoing process of negotiation between players (Liberman, 2013, pp. 83-134) (see also Chapter 8).

After not comprehending the rule we look to the pieces to give the rule coherency. After looking at the pieces and even they don’t offer understanding, we move on to relying or setting up the game board in hope of understanding the rule. (Liberman, 2013, p. 122)

Figure 9.1 represents this relationship between the game pieces, (operational) rules and player.

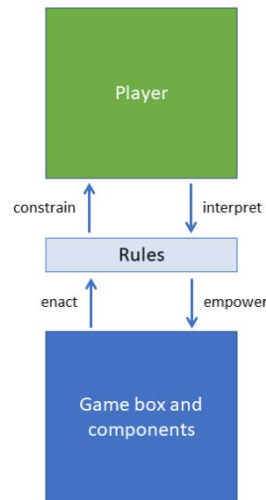


Figure 9.2 Operational rules connect game components and players

Three examples demonstrate this model. First, the game *Carcassonne* (Wrede, 2000) demonstrates the interaction between the rules and the materiality of the game components. Despite at least four substantive versions of the game's scoring rules, its material components have remained the same, leading to confusion when players are unaware of these changes or fail to agree a ruleset prior to play. Secondly, the interaction between the rules and play practices is highlighted by the game *The Mind* (Warsch, 2018). A lack of clarity in the game's rules highlights the interaction and negotiation between the rules and the sociomaterial setting of play. This requires players to overtly negotiate otherwise implicit rules governing players' body language, and situates them in an interpretive dialogue with the rules, which are intentionally vague (Yu, 2018). Finally, the example of *Twister* (Guyer, 1965) highlights issues surrounding a game's reception in a particular sociocultural context. It shows that a game may simultaneously be an innocent pastime for energetic children and a salacious, edgy activity for adventurous adults, depending on its cultural reception and played experience (Donovan, 2017, pp. 167-173; Frasca, 2007; Kaye, 1973, pp. 99-100)³⁷. These examples demonstrate that the rules are both distinct from and imbricated with players and pieces. They are simultaneously both fixed in form and meaning and subject to interpretation and negotiation. Rules are a *part of* a game more than they are *apart from* a game. They affect a game's outcomes as well as its play – it is impossible to play a boardgame without some knowledge of its rules – but they are

³⁷ I elaborate on these case studies in Appendix J.

subject to change as well as to interpretation. “It’s easy to break a game [by losing or breaking pieces], but the core ideas of the game live on” (Randolph, 2012, p. 68, my translation).

9.4.2. The impacts of digitisation

The previous section explored the role of rules and proposed a model (Figure 9.1) showing the relationship between game pieces, rules and players. This section examines the effects of digitisation (RQ3) on a game’s materiality, demonstrating that digitising a boardgame reifies the game’s rules, fixing them and making them an inherent part of the materiality of the digitised boardgame.

Chapter 4 identified three core tensions which arise through the process of digitisation of a boardgame. The first of these relates to the literality of the representation of the game’s components – components are typically represented in the same form as they are in the original boardgame. The form in which they are realised is constant across these different representations of the game; the material elements of the game persist despite the change in format. This assists with sense-making; it has been suggested that compromising the literality of the metaphor by automating more elements of the game may in fact compromise the players’ ability to make sense of the game (J. R. Wallace et al., 2012). Chapter 8 showed that players cooperate with game components not only to make sense of a game but to plan their future actions. Changing the representation of game elements may have flow-on consequences for play, even where those game elements are not germane to the play of a game.

The second tension relates to the importance of articulation work – primarily, of the manipulation of pieces, but also of the interpretation, enacting and enforcement of rules. Whereas, the rules of a boardgame are negotiated and are subject to interpretation, digitised implementations of boardgames typically impose a ruleset on the players and then apply those rules. This reduces the cognitive load on players, who are not required to interpret, negotiate and enact the game rules but simply to take actions, but also restricts what they are able to do. Thus, *Carcassonne* players cannot choose to score their game using the first edition rules unless the digitised game has been designed for this. Digitisation reifies the rules by making them material: the

coded interpretation of the rules is not only privileged over that of the player, it becomes a part of the “game” artefact (see Figure 9.4). In digitised boardgames, the fundamental materiality of the components and play environment is extended to encompass the rules, which are made material through code. As in a physical boardgame, the digitised components *enact* the (now digitised) rules. However, whereas the rules of a physical boardgame *empower* pieces (to act, to represent), in a digitised game the rules *embody* the digitised components; they give them their form and allow or disallow actions and representations. The player, in turn, interacts with the game as a whole; like the rules in the physical boardgame, the digitised game *constrains* what they can do. Unlike in a physical game, however – and this is a fundamental difference between playing boardgames in physical and digital environments – the player no longer needs to *interpret* the rules of the game – to determine or ‘objectivate’ a competent, rules-compliant response to in-game events (Lieberman, 2013, pp. 87-88) – but simply to *understand* them sufficiently to interact with the digitised game. Whereas the rules of the boardgame are transparent to the player, the digitised game obscures or hides them (S. Johnson, 2015).

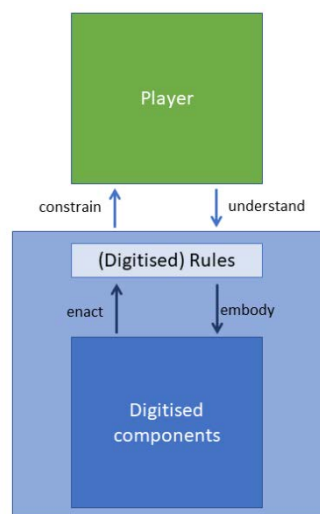


Figure 9.3 Model of a digitised boardgame, where the player interacts with a game comprising a digitised ruleset and digital components.

In her interview, Diana highlights the difference between playing a game as a boardgame and playing it in its digital format in her description of *Small World* (Keyaerts, 2009). She observes that she doesn’t have to know how the game works

when she plays it on her iPad, but when she plays the boardgame she interacts more closely with the rules and underlying game mechanisms.

Small world ... when I play it in the real boardgame I don't enjoy it. Because you've got to know how that counting works – so, [on iOS] I can just sort of play it as a random activity and – I play it as an activity rather than a game, ... I don't have to worry about the actions of keeping, of knowing – you know – doing all the counting and keeping track of all that stuff, it – it takes the bookkeeping out of the equation.

The final tension discussed in Chapter 4 surrounds the enabling of theorycrafting – of making otherwise hidden information available to players. In fact, theorycrafting does not merely *reveal* hidden information but it also *creates* it by “informating” (Zuboff, 1988) game plays to create new data. Just as the digitised form reifies the operational rules, so too it reifies these constitutive rules that underlie the game (Salen & Zimmerman, 2004, pp. 130, 146-147) and reveals strategic information about the value of choices, replacing subjective and anecdotal understandings with material, quantitative data. As shown in Chapter 4, these reified rules are not limited to the digitised game. The understanding that players develop through playing the digitised game carries over when they play the game in its physical format, extending those reified rules and practices from the digitised game back into the nondigital context. Scott and Orlikowski (2013) discuss a similar process in which subjective ratings of travel offerings on the TripAdvisor website have the potential to transform the material space of a hotel (Scott & Orlikowski, 2013, p. 130). It is not just the rules that are reified and made material through digitisation but also the practices of play.

9.4.3. Materiality enables distributed cognition

Although the focus of this research is on the practices of play, rather than on their instrumentalisation, it would be naïve and superficial to focus only on the inherent properties of the game. In particular, the game's materiality is both inherently important to hobbyists (See, for example, Chapter 5) and also a component and enabler of the overall cognitive environment of the game (Chapters 4, 8).

Chapter 2 (specifically 2.6.1) considered the theory of distributed cognition, which examines “the structure of systems, the coordination of resources, the design of representations and artifacts, and the analysis of communication exchanges” (Furniss, Masci, Curzon, Mayer, & Blandford, 2015, p. 332). Although different approaches focus

more closely on overall systems or on the contribution of artefacts to those systems, the Distributed Cognition framework brings together “the people, the problem, and the tools used into a single unit of analysis” to study artifacts, people, action and coordination (M. Perry, 2003, p. 196). It offers a “theoretical commitment to examine this broader socio-cultural-technical system, which is necessary for the collaboration between individuals mediated by artifacts.” (Halverson, 2002, p. 249). In this setting, therefore, it provides a lens to understand the pastime of gaming in the context of its alignment with games and gamers.

In a boardgame, cognition is distributed amongst players and components and through time. Components become part of the cognitive system as they are circulated, sorted, ordered, deployed, moved and removed; they are used throughout the game by both the players and by the game’s ruleset to off-load information. Players acquire information from components and their alignment, from other players, and through movement or placement on the board. Because play is meaningful and deterministic (Salen & Zimmerman, 2004), actions have effects which are propagated through the system, transforming the game state and affecting future action possibilities which must be understood and enacted by the players. Thus, the game’s materiality enables not only distributed cognition but also the cooperative, negotiated practices of play.

9.4.4. Materiality in the broader context of play

Materiality is demonstrably important, as the above discussion has shown. But it is important in many different dimensions. Chapter 2 identified a range of approaches to understanding materiality which focus on the physicality of artefacts, their function and use, their affordances, their effects, importance or relevance, and “a certain ‘stubbornness’ of material reality” (Apperley & Jayemane, 2012). This thesis has demonstrated that each of these approaches is relevant and contributes to an overall understanding of the importance of materiality in boardgames.

Presenting play as an interaction solely between the player and the material game components, in dialogue with the rules, as in Figure 9.2, is of course a simplification. It neglects other important elements including the setting of boardgame play (light, sound, temperature) (see Chapter 5) as well as the configuration of the location, which may be more or less oriented towards

boardgaming and the players themselves (see Chapters 6, 7). Players' bodies are a further material element; they enable manipulation and observation of the components.

Game components are also important because of their function within the game. A game's rules imbue its components – and perhaps even its players – with a particular set of abilities. As the example of *Carcassonne* showed, these functions or abilities are not innate and inherent to the pieces but are bestowed upon them by their interaction with a particular set of rules; similarly, the rules may seek to manipulate or inhibit the players' own bodies. Rules permit actions; these are enacted by components, which have inherent affordances. One of these, discussed in Chapter 8, is their granularity. Because each game component is represented by a single piece, they can be sorted, ordered and otherwise grouped. These structures, groupings and orderings are material – stubbornly so, when we consider imagined and digitised games – and can engender new ways of thinking about a game and its strategies.

One further meaning of materiality is its sense of importance or relevance. As countless scholars have noted, materiality *matters*. Even a relatively dry definition – “the arrangement of an artifact's physical and/or digital materials into particular forms that endure across differences in place and time and are important to users” (Leonardi, 2013, p. 31) – recognises that *matter*ing is as important as the matter itself. Chapter 5 described players' excitement at seeing the pieces of a game for the first time, and lengths to which they will go to customise and protect a game. Pieces can be interchanged and replaced because they are a representation of something else – trains, zombies, money, sheep, or points – but they have an inherent value as objects as well as being operational elements within a game system. But it is not just the beautiful components that are material. A game's rules matter – because they enable the game to be played. Playing a game matters, because it is a pathway to experience and to exploring strategies and techniques, as well as to understanding the interaction between rules and components. And the theorycrafted, informed understanding of a game (see Chapter 4) that is derived from a digitised boardgame matters, because it creates knowledge that players use in both digital and non-digital play.

9.5. Disciplinary and methodological considerations

Chapter 2 discusses the growing separation between Game Studies and other more traditional disciplines, including HCI (Deterding, 2017). Further, it shows that the study of games, both in its own discipline and in HCI, is dominated by the instrumentalisation of play and of games. As M. Carter, Downs, et al. (2014) demonstrate, the majority of games research has traditionally been – and continues to be – focused on what games can do, either as a research tool or as a tool for achieving something beyond the scope of the gameplay. The focus of this thesis, however, has been on play itself, and on what happens when we play. This work does not instrumentalise play, but rather celebrates it; it studies what exists now, rather than its potential to engender change. In doing so, it not only describes a set of practices at a point in time, but also provides a basis for comparison. If we understand how games are used now – how people engage in play – then we can also consider how they could be used.

Rather than responding to a specific Research Question, this section discusses and reflects on the overall disciplinary and methodological contributions of this thesis. At a disciplinary level, the thesis links Game Studies and HCI to Board Game Studies (9.7.1). Each of these disciplines has a different focus; each is relevant to the work of this thesis. Secondly (9.7.2), by focusing on the hobbyist experience of play, the thesis turns attention from the dominant instrumental uses of games and returns focus to boardgames as playable artefacts. Finally (9.7.3), it introduces a new technique for studying and observing boardgame play.

9.5.1. Links Game Studies and HCI to Board Game Studies

The study of modern boardgames sits outside the three core streams of games research that I have identified. Modern boardgames lack the Digital element of DiGRA and the Computer of CHI and CHI PLAY. They are not “of and in antiquity” as the Colloquium of the International Society for Board Game Studies seeks. The *Game Studies* journal explicitly welcomes research on non-digital games (Aarseth, 2017b) however its tagline remains “the international journal of computer game research”. The journal *Analog Game Studies* publishes not only online but also as edited volumes,

but is not recognised by institutions³⁸. Despite concerns about the lack of interdisciplinarity in Game Studies (Deterding, 2017; Mäyrä & Sotamaa, 2017), these outlets remain largely disparate and discrete.

Recent work has addressed the study of boardgames and other forms of tabletop gaming not as a proxy for other forms of game but as a topic of inherent interest and value. Volumes by Arnaudo (2018), Thrower (2018) Donovan (2017) and other forthcoming publications explore the history and scholarship of boardgames. Zagal and Deterding (2018) have collected a range of scholarly work around role-playing games. The challenge of interdisciplinarity is heightened by the lack of integration of the Board Game Studies Colloquium with other scholarly channels. With the *Board Game Studies Journal* publishing only five papers in each annual volume, few of the many papers presented at the Colloquium are published or accessible. Like *Analog Game Studies*, this journal is not recognised by institutions, lowering incentives to submit. Complicating this is the fact that many papers are presented not by members of the academy but by independent scholars. There is a risk that this research will continue to be siloed away from other game research.

Chapters 2 and 3 located this work in the disciplines of Game Studies and Human-Computer Interaction, as well as Board Game Studies. I have embraced this inherent interdisciplinarity. Chapters 4 and 7 were published in Game Studies venues: at the Digital Games Research Association (DiGRA) conference and in the Games and Culture journal, whilst Chapters 5 and 8 were published at the CHI conference in Human-Computer Interaction. Material in Chapter 6 was presented at the Board Game Studies Colloquium as well as at the annual conferences of the Association of Internet Researchers and the Society for Social Studies of Science (4S). This work engages with literature from Game Studies as well as from CHI and especially CHIPlay, to ensure that it is not isolated in one discipline's siloed archives (Deterding, 2017). It intentionally adopts an interdisciplinary perspective (Björk, 2008). Further, it engages with work from the International Society for Board Game Studies, a group that has historically focused more on the cultural history and archaeology of games in antiquity than on more modern titles. This thesis, therefore, has brought together material from different but significant disciplines and research streams, highlighting the similarities

³⁸ As at October 2018, it is not listed on either Scopus or Clarivate Analytics.

in their various foci and demonstrating the relevance of understanding hobbyist boardgamers in all three contexts.

9.5.2. Returns attention to boardgames as playable artefacts

In discussing how boardgames' materiality affects the experience of play, this thesis focuses on play itself. Like the work of De Koven (2013) and Zimmerman (2013), it stresses the intrinsic value of play, rather than presenting it as a mere instrumental tool in service to some extrinsic goal. Games are material, but they are more than artefacts; they are sites of distributed cognition but are more than just a system. Hobbyist boardgamers love to show off their game shelves but, even more, they love to get their games to the table. Boardgames are more than artefacts, they are also playable.

As Chapter 2 demonstrates, there has been less attention to the study of play than to other aspects of gaming. In HCI, the broad trend towards research that instrumentalises games continues within the small corpus of papers that consider boardgames. Rather than focusing on what games can do, this thesis has focused on the enjoyment of games; of playing games but also of playing with games, and on the hobbyists who embrace these activities.

9.5.3. Introduces a new technique for studying play, using gaze tracking glasses as an ethnographic tool for qualitative research.

A further contribution of this research is in the pioneering of a novel method for studying boardgame play using a wearable gaze tracker. This is described in Chapter 3 and its use is demonstrated in Chapter 8. Although gaze trackers are frequently seen as a purely experimental tool for understanding consolidated data, this method uses a tracker as an additional source of qualitative information to inform understanding of play sessions and interactions. The gaze tracker allows for study of the attention patterns of a player, understanding their gaze behaviour during play. Moreover, it allows us to understand the different targets of the player's attention, which include the other players as well as the game components. Video data from the tracker highlights the interesting decisions that players face and, moreover,

demonstrates the sustained attention that players maintain throughout a game. Additional information about this method is included in Appendix G.

9.6. Research Quality and Limitations

In this section, I discuss the quality and limitations of this thesis, using Tracy's conceptual model for excellence in qualitative research (Tracy, 2010). This section briefly considers each of the eight quality criteria that Tracy proposes and reflects upon the ways in which this research meets or does not meet them. This offers a structured approach to understanding the quality and limitations of this work.

9.6.1. Worthy topic

To be considered worthy, a research topic should be relevant, timely, significant, and interesting (Tracy, 2010, p. 840). As demonstrated in Chapter 1, interest in boardgames is currently booming. Not only are sales increasing, boardgames are becoming more visible on television shows and in the broader mass media, yet there is still relatively little research in this area. Although both Game Studies and HCI have tended to focus games research on videogames, there is increasing interest in and appetite for further research on tabletop gaming experience, as evidenced by recent publications on role-playing games (Zagal & Deterding, 2018) and boardgames (Arnaudo, 2018; Aydin, Ghosh-Schellhorn, Schlange-Schöningen, & Ziegler, 2018; Booth, 2015).

9.6.2. Rich rigor

This work intentionally approaches the topic of hobbyist boardgaming from three distinct perspectives. This ensures that it provides a “rich complexity of abundance” (Tracy, 2010, p. 841) through broad, rather than narrow, understanding, and provides checks of the research and a form of triangulation. For example, understanding of the four pillars of hobbyists' enjoyment of boardgames is drawn from the interviews conducted in Study 2, but observations in Study 3 demonstrate that these are also important during play.

This thesis is firmly grounded in the data, as a constructionist approach requires. Accordingly, rich detail about participants and their experience is detailed throughout. Using thematic analysis as a tool for identifying the themes in interview and observational data from Studies 2 and 3 focuses attention not on preconceived ideas of what the data might say but on the words and concerns of participants, both reflecting and ‘unravelling’ what they say (Braun & Clarke, 2006, p. 81). Similarly, the case-to-case synthesis approach used in Study 1 aligns findings from three distinct case studies without losing the detail of each.

9.6.3. Sincerity

Guba and Lincoln (2011, p. 170) note that quality criteria for constructionist work should focus on “trustworthiness and authenticity,” rather than statistics and data. Similarly, Northcote (2012, p. 107) asks whether “the research processes and findings communicate the emotional elements of how the participants and the researcher engaged in the research study?”. My own embeddedness within hobbyist boardgaming communities has been both a strength and a potential limitation for this study. Gaining access to hobbyists through these communities and being able to understand details of gameplay are distinct advantages. At the same time, there is a risk of privileging my own understanding and experience over those of my participants. This is discussed in detail in Chapter 3. This work is not auto-ethnography, but it is necessarily informed by my own participation in the hobby. In editing, I removed several personal anecdotes not because they were not relevant to the topic but because they were a distraction from this thesis’s focus on the experience of others.

I am interested in boardgames because I am a hobbyist boardgamer. It was at times a challenge to articulate why other people should also be interested in boardgames. Aren’t they inherently interesting? Doesn’t everyone enjoy them? I am excited to research something that I find enjoyable, and this has both made the research easier – it is easy to make time for something that has intrinsic value – and more difficult – as it can be difficult to identify what is *most* interesting when *everything* is interesting.

One further issue that arises from my hobbyist participation is my relationship with participants. I know, or know of, many of my interviewees through participation in hobbyist communities. Similarly, I know many of the people who participated in game sessions (Study 3) as fellow members of local gaming communities. “In the field, we develop empathy or antipathy for our subjects; yet we observe and record with the cold dispassion of a physicist,” writes Harper (1992, p. 151). I was conscious, at times, of a tendency to reach for quotes from particular people or particular gaming sessions and to avoid quotes from others not because of what they said but because of my own emotional reaction to participants. In reviewing literature, I felt an acute antipathy towards the devoted chess players described by Puddephatt (2008) whose practices are so unlike the welcoming environment that my participants describe in the boardgame hobby. A. M. L. Brown (2015) provides insights into ways to manage our emotions as researchers and proposes boundary management – active policing of communication and behaviour – as one approach. I have extended this to include active policing of the selection of data that is presented as examples.

9.6.4. Credibility

The fourth quality criterion that Tracy (2010, p. 842) identifies is credibility: “the trustworthiness, verisimilitude, and plausibility of the research findings”. Practices for demonstrating credibility include triangulation, thick description, and member reflections.

Triangulation is adopted in different ways throughout the analysis of this data. Discussion of my findings and analysis with my supervisors is of course a primary form of *analytical* triangulation. Further, however, the intentional adoption of the three perspectives of games, gamers and gaming (Björk, 2008) provides a triangulation of approach and the different methods used for data generation provide *methodological* triangulation. Many interview findings from Study 2 are supported in the observational findings from Study 3 and, to some degree, through Study 1.

As already described (see 9.6.2), I approached discussion of my findings through rich description of participants and of behaviours, privileging the use of quotation over paraphrasing in my own words. I used member checks to confirm the validity of my summaries of what was discussed in interviews, although I did not

deepen this analysis through inviting participants to reflect on the analysis. This would have enhanced the discussion of hobbyists' practices, particularly in Chapter 6.

9.6.5. Resonance

Resonance describes "research's ability to meaningfully reverberate and affect an audience" (Tracy, 2010, p. 844). The discussion of participants in Chapters 5 through 7 provides a detailed account of their practices that will resonate with other hobbyist boardgamers. Participants from three different continents all reported similar practices and habits. Extended profiles of participants are included in Appendix C, should more context be required.

A further form of generalisation is transferability, or case to case generalisation, "to help persons toward further understandings" (Robert E Stake, 1978). This occurs when someone in a different setting is able to adopt the findings of the research (B. Smith, 2018, pp. 140-141). The work on "digital hinterlands" in Chapter 6 demonstrates, through discussion of the hobbies of reading and yarn crafting, that the practices described are both transferable and relatable. Moreover, this work has broader applicability in the field of Game Studies. Understanding how people play boardgames has value for developers of hybrid and digital games.

What is missing in the data is the broader context of non-hobbyist boardgame play. The narrow focus of this thesis is productive in what it reveals about the meanings that games and the gaming hobby have for this dedicated group. As discussed in Chapter 6, the narrow focus on boardgame hobbyists problematised the hobbyist-casual spectrum when comparing this work with other studies of boardgame players. Nevertheless, there is a significant opportunity for further study of casual boardgame players, as well as of family boardgaming, which is alluded to in Chapter 7.

9.6.6. Significant contribution

The sixth quality criterion for qualitative research requires that it make a significant contribution with theoretical, heuristic, practical or methodological significance (Tracy, 2010, p. 846): "Have the findings of this study contributed to our knowledge and understanding?" (Northcote, 2012, p. 106). This work demonstrates a

theoretical contribution in its articulation of three key tensions in digitisation of boardgames (Chapter 4), in the conceptualisation of the four pillars of hobbyist boardgaming (Chapters 5 to 7), and in the extension of the relationship between cooperation and competition from earlier work (Kew, 1987; Liberman, 2013; McEwan & Gutwin, 2016) (Chapter 8).

9.6.7. Ethical

Procedural ethics (Tracy, 2010, p. 847) are the ethical actions required by organisations. At The University of Melbourne, these include the requirement to obtain approval from the relevant Human Ethics Subcommittee prior to commencing research as well as broader issues related to the responsible practice of research³⁹. Techniques for anonymisation are discussed in Chapter 3. Participant profiles (Appendix C) were sent to each Australian participant⁴⁰ to ensure that they were comfortable with the level of information provided, with an expressed concern that they might be identifiable to others within the comparatively small hobbyist boardgaming community. None of the participants was concerned about the detail that is included.

As described in Chapter 3, it was difficult to reconcile participants' desire to own their own words with the requirement to anonymise. The compromise was to retain a unique identity for each participant in Study 2. This allows them to share that with others if they choose, or to remain partially hidden by the pseudonym yet still unique. Further, as discussed there, I would adopt a different approach to quoting material from digital forums if I were writing this research today.

9.6.8. Meaningful coherence

The final quality requirement is meaningful coherence (Tracy, 2010, p. 847):

“Meaningfully coherent studies plausibly achieve what they espouse to be about ... By the end, the reader should feel as though the piece lived up to what was promised.”

³⁹ See <https://staff.unimelb.edu.au/research/ethics-integrity>

⁴⁰ “Europe” and “the USA” have large boardgamer populations; the group in Australia is much smaller and therefore it is more likely that someone might be identifiable.

This work demonstrates meaningful coherence through the connection between research design, data collection, data analysis and the theoretical framework and goals of the research. That is, in the clear connection between the constructionist interpretivist research approach and symbolic interactionist framework and the participant-oriented, qualitative techniques for data generation and analysis outlined in Chapter 3.

9.7. Opportunities for further research

This research identifies a number of opportunities for further research in the Game Studies and HCI traditions. This section follows the structure of this thesis by considering the opportunities that arise in each of the three perspectives.

9.7.1. Boardgames

Digitisation of boardgames (Chapter 4) is comparatively under-studied. There is an opportunity to explore how the findings of this research on materiality and on the ways in which players understand a game through their manipulation of the pieces could be implemented to enhance digital play of a boardgame. A further, broader review of hobbyist and non-hobbyist boardgamers' attitudes to digitised boardgames could help to inform such research.

Following on from this work, there is an opportunity to examine hybrid physical-digital games in meaningful ways. Specifically, I aim to create a taxonomy of the ways in which digital resources and devices are *currently* used in hybrid games. This will provide a framework for describing different uses of digital tools – for example, to deliver thematic material, to randomise, to reveal or occlude information, to perform calculations – in a consistent and evidence-based way.

A further study could examine the role of the materials of the game in more depth – for example, how play is transformed when players use different game components such as the deluxe rather than the standard version of a game. Although this was not the focus of this research, there were noticeable differences between the way players manipulated the cards in *Hanabi* and the corresponding tiles in *Hanabi Deluxe*, with the tiles affording a broader range of manipulations and orientations than

the hand-held cards. Like the digitised games described in Chapter 4, different materials may afford different forms of cognitive off-loading, extending the relevance of the material specificity hypothesis in the boardgame setting.

9.7.2. Boardgamers

Despite the earlier work by Woods (2012), hobbyist boardgamers as a group remain relatively opaque to research. As shown in Chapter 6, there is significant scope to explore the sociality that surrounds boardgaming; not only how different groups of players value sociality but also how they describe and understand it. Moreover, there is little research on casual players of boardgames, or on the growing numbers of new hobbyists who have discovered the hobby in the last five years or so and whose practices are shaped by popular review sites, YouTube channels, and the emergence of Kickstarter and other crowdfunding platforms (Belleflamme, Lambert, & Schwienbacher, 2013; Bidaux, 2017; Connelly, 2017; Graham, 2016; Malone, 2012).

Beyond a narrow focus on boardgames, the “digital hinterland” (see Chapter 6) is vast and largely unexplored. By naming this space and identifying the five key activities that occur within it – researching, collecting, cataloguing, discussing and tracking (or quantifying), this work provides a new perspective on an old belief – that engaging with these hobbies entails an overt rejection of the digital – showing instead that hobbyist engagement in traditionally offline activities is enhanced and deepened through these online practices. Nevertheless, there is an opportunity to engage with these practices more deeply and across a wider variety of settings.

9.7.3. Boardgaming

Finally, there is an opportunity to examine the role of the rules in boardgaming. The earlier discussion of *Carcassonne* and *The Mind* identifies different functions of the game rules, building on the material presented in the classic *Rules of Play* (Salen & Zimmerman, 2004). Formal game rules describe affordances and behaviours of pieces, they describe consequences and significance of actions, and provide a framework for evaluation. They do not determine how a game is played; rather, they are a resource for the situated action of playing a game (Kew, 1986, 1987; Liberman, 2011, 2013; Suchman, 2007).

Whereas technological artefacts may have intrinsic properties, in boardgames (some of) these properties are defined and enabled by the rules and are reified and made material through digitisation. For example, a knight in a game of *Chess* has the property of being able to move in an L-shape, 2 steps in one direction followed by a further step at 90 degrees to the original direction. In a digitised game, this property is entrenched in code, but in a boardgame, it is granted to the knight by the combination of the rules and the collaborative work of the players to uphold those rules. Game rules may also, as in the case with *The Mind*, allow or proscribe social activities as well as specifically game-related activities. Groups of players use a range of strategies for negotiating and interpreting game rules, which could be a productive focus for further study. In particular, it would be interesting to investigate whether there is a difference in the way that hobbyists and non-hobbyists understand and learn game rules and how different groups categorise the complexity of a ruleset.

9.8. Concluding remarks

This thesis has explored four areas of the study of boardgame play and interactions. Firstly, it describes the behaviours and practices of hobbyist boardgamers. It identifies what they value about boardgames and boardgaming (RQ₁), and how they put those values into practice (RQ₂). Secondly, it examines the use of digital technologies in what is broadly understood to be a traditionally off-line genre, identifying tensions between the digital and cardboard representations and introducing the idea of parallel use (RQ₃). Moreover, it identifies that playing digitised games is not the only fundamentally digital activity that hobbyist boardgamers engage in, demonstrating that boardgaming is surrounded and supported by a number of other digital practices – boardgamers' practices are split between the (cardboard) boardgame and the digitised practices (computer). Thirdly, it addresses the importance of the materiality of boardgames, both as rhetoric and as an enabler of play (RQ₄). It demonstrates that materiality matters not in a single sense of the word but in a range of meanings. This observation is supported by a novel method for studying non-digital play, using gaze tracking glasses as an ethnographic tool for qualitative research. Building on this understanding of materiality, the thesis establishes boardgame play as a site of distributed cognition and highlights the importance of cooperation as a necessary enabler of competition. It shows that boardgame play

invites a host of practices which enable this distributed cognitive environment, highlighting epistemic actions and cognitive off-loading, shared activity spaces, the creation of both transient and permanent use-histories, and the negotiation of rules as key cooperative, coordinative practices which occur throughout and across game play. Moreover, it observes that many of these activities are lost in current digital adaptations and play environments.

Lastly, at a disciplinary level, the thesis links HCI and Game Studies, stressing the importance of understanding play rather than instrumentalising it. The observational, user-focused, real world-oriented techniques of HCI support this goal of understanding the user and the activity of play; the discipline of Game Studies provides an historical and cultural context that ties this research to other work on understanding play. Together, they allow for deep understanding and rich description of the situated activities that constitute boardgame play.

In the Introduction to this thesis, I observed that boardgames are often (wrongly) portrayed as obsolete or old-fashioned, yet their popularity and relevance continues to grow. As well as describing the experience of being a hobbyist boardgamer, I hope that I have managed to convey the joy and excitement of playing boardgames and of engaging in this shared passion.

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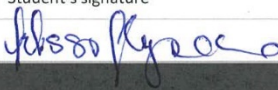
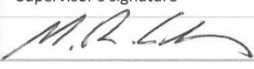
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Appendices

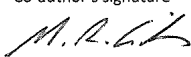
- Appendix A: Co-author statements
- Appendix B: Full list of publications
- Appendix C: Participant profiles (Study 2)
- Appendix D: Study 1 Method – additional material
- Appendix E: Study 2 Method – additional material
- Appendix F: Study 3 Method – additional material
- Appendix G: Gaze-Tracking Method
- Appendix H: Exploring the Digital Hinterland: Internet Practices Surrounding the Pursuit of “Offline” Hobbies
- Appendix I: Me and My Shelfie: Hobbyists’ Domestication of Boardgames
- Appendix J: Operational rules connect game components and players – Three Case studies

Appendix A: Co-author statements

 Declaration for a thesis with publication	
PhD and MPhil students may include a primary research publication in their thesis in lieu of a chapter if: - The student contributed greater than 50% of the content in the publication and is the "primary author", ie. the student was responsible primarily for the planning, execution and preparation of the work for publication - The student has approval to include the publication in their thesis from their Advisory Committee - It is a primary publication that reports on original research conducted by the student during their enrolment - The initial draft of the work was written by the student and any subsequent editing in response to co-authors and editors reviews was performed by the student - The publication is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in the thesis Students must submit this form, along with <i>Co-author authorisation forms</i> completed by each co-author, when the thesis is submitted to the Thesis Examination System: https://tes.app.unimelb.edu.au/. If you are including multiple publications in your thesis you will need to complete a separate form for each publication. Further information on this policy is available at: gradresearch.unimelb.edu.au/preparing-my-thesis/thesis-with-publication	
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Journal or book name	Proceedings of the 2015 DiGRA International Conference
Volume/page numbers	Vol. 12
Status	☐ Accepted and In press ☒ Published ☐ In progress
Date accepted/ published	May 2015
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I declare that the publication above meets the requirements to be included in the thesis	
Student's name	Student's signature
Melissa Jane Rogerson	
Date (dd/mm/yy)	9/10/18
C. PRINCIPAL SUPERVISOR'S DECLARATION	
I declare that:	
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Supervisor's name	Supervisor's signature
Martin Gibbs	
Date (dd/mm/yy)	09/10/2018

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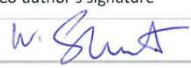
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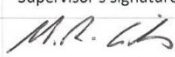
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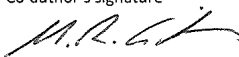
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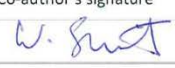
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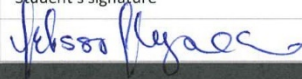
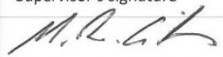
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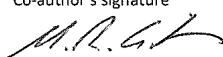
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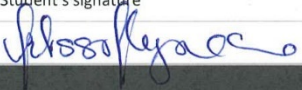
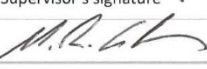
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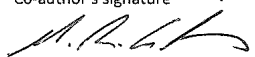
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C. PRINCIPAL SUPERVISOR'S DECLARATION	
I declare that:	
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A. PUBLICATION DETAILS (to be completed by the student)		
Full title	Cooperating to Compete: The Mutuality of Cooperation and Competition in Boardgame Play.	
Authors	Rogerson, M. J., Gibbs, M. R., & Smith, W.	
Student's contribution (%)	80%	
Journal or book name	Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems	
Volume/page numbers	N/A (doi:10.1145/3173574.3173767)	
Status	☐ Accepted and In-press ☒ Published ☐ In progress	Date accepted/published 21 April 2018

B. CO-AUTHOR'S DECLARATION (to be completed by the collaborator)		
I authorise the inclusion of this publication in the student's thesis and certify that: - the declaration made by the student on the <i>Declaration for a thesis with publication form</i> correctly reflects the extent of the student's contribution to this work; - the student contributed greater than 50% of the content of the publication and is the "primary author" ie. the student was responsible primarily for the planning, execution and preparation of the work for publication.		
Co-author's name	Co-author's signature	Date (dd/mm/yy)
Martin Gibbs		09/10/2018

 Co-author authorisation form
All co-authors must complete this form. By signing below co-authors agree to the listed publication being included in the student's thesis and that the student contributed greater than 50% of the content of the publication and is the "primary author" ie. the student was responsible primarily for the planning, execution and preparation of the work for publication. In cases where all members of a large consortium are listed as authors of a publication, only those that actively collaborated with the student on material contained within the thesis should complete this form. This form is to be used in conjunction with the <i>Declaration for a thesis with publication form</i>. Students must submit this form, along with the <i>Declaration for thesis with publication form</i>, when the thesis is submitted to the Thesis Examination System: https://tes.app.unimelb.edu.au/ Further information on this policy and the requirements is available at: gradresearch.unimelb.edu.au/preparing-my-thesis/thesis-with-publication

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Co-author's name	Co-author's signature	Date (dd/mm/yy)
Wally Smith		9/10/18

Appendix B: Full list of publications

2015 1 proceedings 1 seminar paper 3 conference papers 1 conference panel 1 poster	Björk, S., Dormans, J., Deterding, S., Rogerson, M., Zagal, J.P. (2015). 'Tabletop Game Studies Panel' at DiGRA 2015. Lüneburg, Germany. Rogerson, M.J. (2015). 'Between Cardboard and Computer: Modern European Boardgames and Digital Convergence'. Paper presented at the OzCHI '15 Doctoral Colloquium. Melbourne, Australia. Rogerson, M.J. and Gibbs, M. (2015). 'Finding Time for Tabletop: Boardgame Play and Parenting'. Paper presented at the Adult Play Seminar (Tampere Game Research Lab International Spring Seminar), Tampere, Finland. Rogerson, M.J., Gibbs, M., Smith, W. (2015). 'Digitising Boardgames: Issues and Tensions'. DiGRA 2015; Diversity of Play – Proceedings of the 2015 DiGRA International Conference. Lüneburg, Germany. Rogerson, M.J., Gibbs, M., Smith, W. (2015). "Finding Time for Tabletop". Paper presented at the Doctoral Colloquium of the School of Computing and Information Systems, The University of Melbourne. Best Paper Award. Rogerson, M.J. (2015). "Tensions in Digitising Boardgames". Poster presented at the Doctoral Colloquium of the School of Computing and Information Systems, The University of Melbourne. Rogerson, M.J., Gibbs, M., Smith, W. (2015). "Funky little amoebas and poos' – Customising the play experience of board games'. Paper presented at DiGRAA (DiGRA Australia) 2015. Sydney, Australia.
2016 1 proceedings 1 journal article	Rogerson, M.J. (2016). 'Observing boardgame play in a research setting'. Paper presented at the Doctoral Colloquium of the

2 conference papers	School of Computing and Information Systems, The University of Melbourne. Rogerson, M. J., Gibbs, M., & Smith, W. (2016, May 07 – 12, 2016). "I love all the bits": the materiality of boardgames.' Paper presented at CHI 2016, San Jose, CA, USA. Rogerson, M.J. & Gibbs, M. (Prepublished July 8 2016). Finding Time for Tabletop: Boardgame Play and Parenting. <i>Games and Culture</i>. doi:10.1177/1555412016656324 Rogerson, M.J., Gibbs, M., Smith, W. (2016). 'Being a Boardgamegeek'. Paper presented at DiGRAA (DiGRA Australia) 2016. Melbourne, Australia
2017 1 proceedings 1 workshop 1 workshop paper 5 conference papers 1 WIP/poster	Rogerson, M. & Woods, S. (2017). Boardgame Studies Roundtable workshop. Workshop at DiGRA 2017, Melbourne, Australia. Rogerson, M.J. (2017). "Boardgames Rule(s)". Paper presented at the Doctoral Colloquium of the School of Computing and Information Systems, The University of Melbourne. Honourable Mention: Best Presentation Award. Rogerson, M.J. (2017). Playing, Winning, and the Importance of the gamer. Paper presented at the Boardgame Studies Roundtable Workshop, DiGRA 2017, Melbourne, Australia. Rogerson, M.J., Cocks, J. (2017). "F**king with Psychology: Psychological tests as boardgame design inspiration." Paper presented at DiGRA 2017, Melbourne, Australia. Rogerson, M.J., Gibbs, M., Smith, W. (2017). "Exploring the Digital Hinterland: Internet practices surrounding the pursuit of "offline" hobbies.". Paper presented at the 18th annual conference of the Association of Internet Researchers, Tartu, Estonia, 15 - 18 October. Rogerson, M.J., Gibbs, M., Smith, W. (2017). "Me and my Shelfie: Hobbyists' domestication of boardgames." Paper presented at DiGRA 2017, Melbourne, Australia. Rogerson, M.J., Gibbs, M., Smith, W. (2017). "Using gaze data in

	understanding boardgame play". Paper presented at Games Research Methods Symposium, Sydney, Australia. Rogerson, M.J., Gibbs, M., Smith, W. (2017). 'How hobbyists value boardgames.' Paper presented at the XXth Board Game Studies Colloquium, Copenhagen, Denmark. Rogerson, M.J., Gibbs, M., Smith, W. (2017). 'What can We Learn from Eye Tracking Boardgame Play?'. In Extended Abstracts Publication of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '17 Extended Abstracts).
2018 1 proceedings 2 conference papers	Rogerson, M. J., Gibbs, M. R., & Smith, W. (2018). Cooperating to Compete: the Mutuality of Cooperation and Competition in Boardgame Play. Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Montreal QC, Canada. Rogerson, M.J., Gibbs, M., Carter, M., Allison, F. (2018). Understanding Player Elimination in Boardgames as a Form of Permadeath. Paper presented at DiGRA 2018, Turin, Italy. Rogerson, M.J. (2018). 'She Shares Shelfies: The Presentation of Boardgames at Home and in Public.' Paper presented at 4S 2018, Sydney, Australia.
Forthcoming 1 book chapter	Rogerson, M.J., Gibbs, M., Smith, W. More than the sum of their bits: Understanding the gameboard and components. In MacCallum-Stewart, E. & Brown, D., <i>Rerolling Boardgames</i>. London, UK: MacFarland.
In review 1 paper	Andrade, R., Rogerson, M.J., Waycott, J., Baker, S., Vetere, F. 'Playing Blind: Revealing the World of Gamers with Visual Impairment' (Submitted to CHI 2019)

Other activities (seminars, panels and service)

Workshops Chair, OzCHI 2018

Dee, S., Argall, N., Heckman, R., Rogerson, M. (2018). Not Just to Win: The Psychology of Tabletop. Panel discussion conducted at PAX Australia. Melbourne, Australia.

Secretary, DiGRA Australia, 2015-2018

Local organising committee member, DiGRA 2017, Melbourne, Australia.

BoardGameGeek TV (2017). Melissa Rogerson on Games Research. YouTube video, <https://www.youtube.com/watch?v=Pf9EJU4qtm4&feature=youtu.be>

Student Design Challenge Chair, OzCHI 2016

Buttfield-Addison, P., Manning, J., Rogerson, M. J., Ducky, E., & Nugent, T. (2016). My Friends Keep Leaving And It Is Ruining Games Day. Panel discussion conducted at PAX Australia. Melbourne, Australia.

Wild, P., May, D., Harding, D., Mackay, J., Rickards, M., Rogerson, M. J., & Scott, D. (2016). The Great Tabletop Debate 2016. Panel discussion conducted at PAX Australia. Melbourne, Australia.

Morrison, M., Rogerson, M.J., Cocks, N., and McKenzie, B. (2015). Board Games Up Late. Panel discussion conducted at The Freeplay Independent Games Festival. Melbourne, Australia.

Sztajer, P., Jaffit, M., Kusters, T., Coyle, E., Ng, C., and Rogerson, M.J. (2014). Dice or Byte: The Convergence of Tabletop and Digital. Panel discussion conducted at PAX Australia. Melbourne, Australia.

Appendix C: Participant profiles (Study 2)

These microethnographies introduce the participants described in Chapters 6 and 7. By providing these profiles, I focus on capturing a sense of the interviewees and of the trajectories of their gaming life

C1. Tom

“I’ve played games most of my life ... Since a very small child, I enjoyed them.”

Tom is in his fifties, married with teenage children, and living in Australia. His wife and children also enjoy games, and he mostly plays games at home with them or with visiting friends – “I got out of the habit of going to club events as the kids were growing up”. He plays games on his dining table but would like to have a games room both to play games and to store his “roughly about a thousand board games, war-games and so on.” Like many gamers, he works in the IT industry, and he enjoys reading science fiction and crime novels. He has played and enjoyed games since childhood, mentioning boardgames, role-playing games, war games, card games, play-by-mail games and computer games, although he doesn’t play miniatures games and doesn’t really enjoy party games. As a child, he played *Chess* with his father and the card game *500* with his grandmother. When he plays computer games, it is mainly turn-based strategy games and “ports of board games on tablets ... things like *Ascension*, *Star Realms*, *Tigris and Euphrates*” which he plays with people he knows through BoardGameGeek, although they may never have met; he “never really got into the MUDs or the MORPs or whatever they’re called”. He bought his tablet primarily for playing games.

For Tom, the chief joy of playing games is that “they’re fun”. He elaborates to describe “maybe working with people, maybe working against people” as a key part of this, as well as intellectual and mental stimulation. “you have the – the physical interaction or the in-person interaction, it’s not necessarily physical like hitting people, there’s people there in the same room as you. You can see them, interact with them, both within and without the game, at the spot, which you don’t get with most computer games”. He enjoys competition within games, but “I don’t like game competitions per se, like tournaments.” Broadly, he enjoys games with more strategy and less luck.

Tom talks about the history of different types of games “for example, role-playing games didn’t exist until the mid-70s, so before then I was into more generic mass-market boardgames and war-games.” He was a comparatively early adopter of role-playing games in around 1975 or ’76, but doesn’t really play them anymore; he feels he has less time since having children. He sees his involvement in gaming as encompassing “collecting games, researching games, BoardGameGeek” and volunteers his time both to BoardGameGeek and to an international publisher. He was previously involved in organising role-playing game tournaments and conventions over more than ten years. Perhaps because of this, he’s never been interested in “Dungeon bash” boardgames because he feels that they are trying to recreate the experience of *Dungeons and Dragons* and they “do a very poor job of it.”

Tom enjoys attending boardgame conventions – “up to two or three a year” – and has travelled internationally to attend gaming events in Europe and in the USA, both on his own and with his family. He enjoys the convention environment because it is separate from his everyday life – “you have committed yourself to being available, other than eating and sleeping, to play games ... Which is something that’s much harder to arrange at home or in town because, somebody’s getting called away to a birthday and somebody gets called away to work whereas if you’ve all left wherever it is you live and you know you’re in Albury for the weekend, it’s much less likely that anyone’s going to get interrupted.” He feels that he gets good value out of buying boardgames, compared to movies; “The cost per hour for boardgames, as somebody once said, is quite low.”

C2. Helen

“I just didn’t know that other games existed.”

Helen, who also lives in Australia, is in her early sixties. Recently retired from a career in IT, she “discovered” boardgames while working in the US. Her previous hobbies have involved a range of creative pursuits, as well as watching TV, but these days “Playing boardgames. That’s it. I’ve become more focused.”

Helen enjoyed boardgames as a child; her cousins remember that she was always playing games with them, teaching them *Chess* and *Checkers*. “I remember having a whole collection of board games like *Careers*, something with Alfred Hitchcock on the cover - *Whodunnit* - I’ve seen it on eBay and stuff –it had Alfred Hitchcock and it was like a deduction before *Cluedo*.” She stopped playing games as she grew older –

there comes a time where you think oh, they’re too easy, they’re not - you can’t get anyone to play them anymore. When you’re a kid it’s easy to get people to play. So then I didn’t play games for a long time

although she continued to play parlour-style games with large groups of friends and at parties. Helen remembers trying to interest her friends in boardgames like *Cluedo* and *Scrabble*, as well as in card games, but “they were all too busy learning about wine and – you know - doing other things - grown-up things I suppose.”

Helen moved internationally for work in 2007 and went to a Meetup group, expecting to find people playing *Cluedo*. Instead, she learned *The Settlers of Catan* and *Power Grid* and met a group of friends who joined for games every month for the next three or four years, and who she remains in contact with today. “I was the only female in a group of six guys. And they were all married and had kids and – you know - and I was the token female Australian - so I was the novelty.” She remembers the games as a revelation – “Oh my God that was so good!”

In describing her enjoyment of boardgames, Helen highlights variety and discovery. “Something appeals to me - it’s not the best move but it just appeals to me - then I’ll take it.” She enjoys experimenting with a range of strategies, playing to experience new combinations of cards or actions: “now when I get my cards I’m not playing to win, I’m playing to get certain cards out [played on the table].” Over time, she has become more selective in her choice of games to play: “there’s way too many great - that I think are great games - for me to be playing games that I don’t really want to play.”

Helen enjoys attending a range of boardgaming events. She has travelled internationally to attend events in the USA and Germany, although she prefers events that are focused on play rather than expo-style sales and avoids tournaments in favour of free play spaces. Without hesitation, she identifies what she most enjoys about

boardgaming: “The people.” She explains that, “I mean most people are always looking for like-minded people but don’t know how to find them - with board games it’s like - You find like-minded people because they like board games!” and notes that “if you’re playing with the wrong people it’s not fun.” She feels a sense of solidarity with other boardgamers: “growing up, other people had hobbies and interests and things that I just didn’t care about. And I’ve - you know, I was always the odd one out. And now I’ve found - I’m not the only one - I’ve found a whole lot of people who like the same things that I like and it’s oh! Oh!”

C3. Diana

“I don’t enjoy playing with people whose whole goal is to wipe the floor with everyone around them, because to me, that’s not an experience - well, it IS an experience, it’s just not a pleasant experience.”

Diana, a senior project manager “on the borderline with ADHD”, is in her early forties. She lives with her partner and teenage daughter, and enjoys reading, walking, comics and what she terms “pop culture stuff ... possibly on the left side of mainstream”. Her partner introduced her to boardgames when they started dating, and she charts the progress of their relationship by the growth of their game collection. He owned around 20 games when they started dating, and now they own around 300. They keep a log of the games they have played and set annual “gaming goals. They’re the only resolutions we make.” The home that they bought together has a dedicated games room which they have dedicated with game art and boards, and Diana enjoys “pimping out” her games with attractive components and tuckboxes.

Diana’s game preferences tend towards “deep, heavy economic Euros”. She enjoys indirect conflict rather than direct confrontation and values the group that she plays with as “good gamers” – here, she means strong players. For her, one of the attractions of boardgaming is that it “is the only hobby I’ve found that doesn’t penalise you for being a smart female.” Identifying as an introvert, she enjoys playing with more extroverted players because they lead the “interpersonal engagement” during the game. She was introduced to digital games like *Diablo* by her partner but tends to play digitised boardgames rather than natively digital games. She recently reduced the number of games she plays online to better manage her time commitments to her

family, after spending up to an hour and a half per day taking her turns. Nevertheless, she is still running 18 games of *Ascension*, 6 of which are with Tom “instead of my usual 20”. She also enjoys listening to podcasts, although she does not enjoy watching videos “because that involves sitting still in one place.”

She and her partner share a deep commitment to secular community service, and she speaks glowingly of Alain de Botton’s book *Religion for Atheists*, which describes building community and relationships as a core function of religion. Together, they have co-ordinated a game group and manage a significant games library for a large gaming convention. Like many boardgamers, she enjoys teaching games to people who don’t identify as gamers:

What we are seeing is we’re seeing families who come every year. And as their kids get older and they’re ready for that next thing and that next thing and they come in and right, what have you got for us this year? So that’s been really nice, watching some of those families grow when you only see them once a year at an event like this, so that’s pretty good. (Diana, interview)

As well as regular travel within Australia for conventions, Diana and her partner plan to travel to visit the *Spiel* game fair in Essen, Germany. In the future, they hope to attend events in the UK and the USA. Diana feels that boardgaming has “opened up a big world” for her.

C4. Simon

“I don’t care if you’re home brewing, baking brownies, illustrating miniatures - and I mean little brooches - astronomy, botany - whatever it is, it’s all valid if it makes you happy, and you shouldn’t be apologising for it - to the point where I almost go the other way and I get angry with people for not wearing their colours - why on earth are we here if not to have a good time?”

Simon, a tertiary-educated Australian in his mid-40s, lives with his partner. They have no children. Outside of gaming, his hobbies include photography and what he terms “amateur philosophy”. The youngest of three children by “a fairly large jump”, health problems frequently kept Simon home from school during his childhood “so I played a lot of boardgames and card games with my mother”. He has many memories of adult family members playing games – one grandfather was a keen *Cribbage* player,

the other played *Whist* and *Bridge*, and Simon's mother played *Mahjongg*. His father, who enjoyed *Backgammon*, started him playing *Chess*, and he joined a local club aged around 9-10. He continued to play competitive chess for about 20 years and was involved in club management at a state and national level while continuing to compete: "I think my record was a hundred and thirty-something tournament games in a year". He eventually disengaged from Chess due to the realisation that "I'd plateaued as a player" as well as disagreement about the direction of the (national and state) organisation.

Simon discovered role-playing games in high school during the early 1980s and continued to play them through University. After he stopped playing competitive Chess, he joined the organising committees of a number of role-playing game conventions but eventually burned out.

And providentially, it was at the time when boardgaming was beginning a kind of exponential growth in terms of the number of participants ... and in the quality of the games available and most significantly, in the amount of information about those.

Simon plays boardgames at home with his partner, as well as with friends and at clubs. For him, whilst sociality is important, it is the intellectual challenge that is the primary attraction. He games, on average, "two and a half times a week. Fifty Tuesday nights a year, every second Sunday almost invariably, say, 20 out of 25 times a year. Pretty much every second Thursday night we game with friends." He prefers to play at other people's homes or in clubs rather than at his own cluttered home where he and his partner share a tendency to accrue "crap". They plan to renovate or rebuild their home and add a games room, both to provide a space for play and to "quarantine" the games, which are currently stored across four rooms.

Simon spends a great deal of time engaging with games even when he is not actively playing "because it is possible to spend a great deal of time online, either playing games or researching games and using BoardGameGeek as a form of social media". He estimates that he spends between two and four hours a day engaging with games in some way, compared to maybe 5 to 10 hours a week on his other hobby, photography. He dislikes asynchronous play, both because of the need to wait for an opponent to take their turn and because of the sense of "expectation that I should have my own turn".

Simon identifies strongly as a gamer; more than this, he attempts to live his life in a consciously playful manner.

I would describe myself - if asked by a third party what I do with my time - I would describe myself as being a gamer. And if they then wanted to know what I do to earn money, I would explain what that is - but it's not how I define myself.

C5. Mike

"I started designing games because I had an idea and I wanted to try it out and see if I could get it to work."

In his late 40s, a tertiary-educated professional in a STEM industry, Mike has two children who are now in their late teens – older than he was when he became a gamer. As a child, Mike played games “as I think most kids do” before he discovered the game *Acquire* (Sackson, 1964) – “a game that could be played by adults!” – which was his gateway to other games like *Civilisation* (Tresham, 1980), *Risk* (Lamorrisse & Levin, 1959), *Blood Royale* (Carver & Cockburn, 1987) and *Pax Britannica* (Costikyan, 1985). He drifted away from his hobby when he moved to attend college and start work, and so “was less involved with boardgames until the mid ‘90s” when he found a gaming group through work in 1994-95.

As well as boardgames, Mike and his wife enjoy other playful pursuits including classic video games (he mentions the Atari 2600) as well as amusement parks and roller coasters. His favourite game is *Die Siedler von Catan* which, although he does not speak German, he calls by its German title, “because I played it before there was an English version ... I first played it in about July of ‘95,” and he has been playing in a regular lunchtime *Bridge* game at work for over twenty years. His wife and sons also play games, but not to the same frequency or level of interest as Mike, who typically plays “around 400 different games each year”.

Although Mike is clearly a hobbyist boardgamer, he has also designed published games. Modestly, Mike credits his games’ publication more on having met publishers socially than on the games’ inherent quality:

I know enough people that various friends have sold various publishers on a game or two, and I've known other publishers and what not, and they've decided to take a chance on me.

C6. Rick

I'm a very quiet person, most of the time, so to be in a gaming situation allows me to be more boisterous ... when I'm talking to regular people, I tend to stammer a bit, and I'm not as confident, but when I'm teaching a game, I know my stuff.

Married for 27 years, Rick and his wife have five children aged from mid-teens to mid-twenties. A STEM professional, Rick was introduced to boardgames in college “and that’s how I got hooked”. He also enjoys puzzles, which he sees as using the same skillset as boardgames and as his professional work. As well as these, he enjoys spending time with his family.

As a child, Rick played card games with his mother and boardgames with his family – *The Man from U.N.C.L.E.*, *Monopoly*, *Risk* – and later hobby games like *Melee* and *Wizard* with his younger brother. From his time in college, he remembers the local game shop, where he bought *Adel Verpflichtet* (*Hoity Toity*), his first Eurogame.

there was this one game, one time, which had the *Spiel des Jahres* symbol on it, you know, German game of the year - and I said, well if it's German game of the year, it must be pretty good, I'll try that one out - and I still own that one, which is good, and we played that one quite a bit at the time and it was a lot of fun.

Adel Verpflichtet was the game that moved Rick from Avalon Hill titles to modern “German games”. He enjoyed the ongoing player involvement – “It seemed that you can have more fun playing a game where people, multiple people are playing, and they were all in it till the very end”.

After having children, there was a period of time when Rick was not involved in gaming at all, outside of occasional all-day sessions once or twice a year with friends or colleagues, although he occasionally bought games online. On one store’s website, he found a link to BoardGameGeek.

WOW! Look at all this information that’s here, this is great stuff - and I had never ever put my personal information out anywhere on the web before and it’s like, well, I can put my game information here on

BoardGameGeek, no-one's ever going to see it, I'll put my information there, nothing's going to happen – wouldn't you know it, within a week, a local gamer winds up living 3 or 4 miles away from me, sent me a geekmail and says, hey, I saw your info card on BoardGameGeek, we're real close, we have a game group that meets every Tuesday night, you want to come by?

Rick has been gaming with that same group for over 15 years. Although he used to play a lot of videogames and has also enjoyed role-playing games, he has a firm preference for boardgames. He played some online boardgames for a while but doesn't really use the computer for play; he prefers to spend time on BoardGameGeek and on social media.

I find when I get home at night, I don't want to see a computer screen that much, if I want to play games, I want to play boardgames.

Although Rick's children will play games with him if he asks, they prefer videogames. Nevertheless, games feature in their weekly dinners with their extended family. His wife likes some games and tolerates others but would rather "do her own thing".

Within boardgaming, Rick has found an identity as a game teacher. "I like teaching because I get to know and explain the rules of the game, and I know frontwards and backwards, so it comes out very fluid". He very much enjoys these interactions, and now coordinates a group of teachers for a large local game convention. His favourite type of game is where the player actions are closely related to the theme of the game – he identifies *Viticulture* and *Snowdonia* as examples. He prefers to concentrate on the theme of the game rather than on "chasing points". Laughing, he singles out a lighter game, *Discworld: Ankh Morpork*, as "a game I SHOULDN'T like ... [but] it's just a fun game to play". After playing the game, he became interested in the Discworld novels by Terry Pratchett.

Rick tracks his games played, although doesn't feel a need to increase the number. When we spoke, he had played around 330 games the previous year, mostly in his twice-weekly game groups but also at conventions. He owns about 350 games; his collection size is limited by the shelf space in his dining room. Of gaming, he says

It's part of the fibre of my life, I guess. I like the time that I spend on boardgames, it's a nice community of like-minded people. We talk about games, we talk about other things. I find a lot of the people - I'll

say this. Boardgamers, by and large, are the nicest people you'll ever meet

C7. Sophy

“Whether it's reading a book or playing a game or playing a board game, I like keeping my brain active.”

Sophy, who is in her early 30s, lives with her husband and teenaged stepdaughter in Europe. As a family, they enjoy playing boardgames and LARPing, as well as computer games. Sophy was the youngest child in her family, and her older brothers introduced her to games of various kinds, although these days “I'm the one who does the live actual playing, and they pretend to be Vikings instead.” She mentions playing games with her sister-in-law and other family members, and has fond memories of playing *Gin Rummy*, *Poker* and *Pinochle* with her grandparents, as well as mass market games like *Boggle* with her family. She discovered modern boardgames when her husband discovered BoardGameGeek and a local games club.

Sophy prefers games that are co-operative or abstract and doesn't like it “when people do something that ruins for someone else, without having an obvious advantage for themselves.” She enjoys the sense of working towards a common goal, and also enjoys solitaire games and puzzles, as well as storytelling-oriented games like *Mice and Mystics* (Hawthorne, 2012) and *Tales of the Arabian Nights* (Gallela, 2009). Her husband's favourite games include *Le Havre* (Rosenberg, 2008), “a good brain-burner Euro”, which she also enjoys. Sophy has a regular boardgame night with friends, and plays with other friends on weekends, although due to the time commitments associated with her other hobbies her husband plays more often than she does. She also plays digitised boardgames on her phone, generally with her husband, although also against the AI to “kill time” when she is travelling to and from work..

Sophy finds games alluring. Although she enjoys trying new games, “there will be some games I'm always drawn back to”. She particularly enjoys going to conventions, which is “where I get my little explosion of gaming”. Like many boardgamers, she attends *Spiel* in Essen, where she works at a friend's booth. She prepares for this by watching videos and listening to podcasts. With her husband, she

attends a number of local conventions, and they have travelled to the USA to attend a boardgaming convention. She talks about reading BoardGameGeek by proxy; her husband reads more widely than she does but directs her attention to relevant or interesting discussions.

Sophy and her husband own between 700 and 800 boardgames; “We have that collector in us which is a bit contagious”. They enjoy “pimping” their games, and have a range of accessories for them, both that they have bought and that they have made themselves. The games are currently stored in various rooms around their home, but they are considering moving and would like to have a designated space for their games, to get them away from their living space.

C8. Matthew

“I want to do it all. I want to play my old games and I want to play my new games and I want to play my new games a lot so that I can discover everything they have to offer, because if you play them once or twice, that's fun, but you usually haven't seen anything that's going on in there, especially the harder games”

Matthew, who lives in Europe, is an IT professional in his late 30s. He identifies playing boardgames as his “main hobby” although he also enjoys watching television, playing videogames, and reading. Single, he explains that what he particularly enjoys about boardgames is

just the companionship, doing things with friends and still have something to be doing. Something like the personal or the challenge of the game and trying to solve it. In the end, I enjoy them very much, but I cannot really pinpoint why.

Matthew also plays *Dungeons and Dragons* (Gygax & Arneson, 1973) with colleagues about once a month, and plays *World of Warcraft* (Blizzard Entertainment, 2004) with friends every week or two. He played *Magic: The Gathering* (Garfield, 1993) for a time, but stopped in his first year of University. He suggests several reasons for this, including a lack of variety or consistency in expansions, the need to constantly keep up with the pace of new releases, and the increasing number of small children who were

playing the game. He sold his *Magic* cards and bought *The Settlers of Catan* (Teuber, 1995) and, later, *Kremlin* (Hostettler, 1986).

Matthew's mother also enjoys games, and he remembers playing *Rummikub* and *Scrabble* with her. As a child, he would go to the local department store and study the new games, then go home and make his own versions of them to play with his younger brother. He still has copies of these home-made games, in what he calls his "Childhood Museum". Later, he joined a Chess club, however he no longer plays competitive Chess because

it was too slow for me and it was lacking the companionship, because you are playing a two-player game and it's a lot of thinking. When the other person is thinking, you are not supposed to talk with them.

Matthew became the collection manager for his university's games club, a role that he maintains today, although he would like to step back and pass the role onto current students. He has been attending Spiel since 2005, generally with a friend and her boyfriend, and he uses it as an opportunity to buy games for himself as well as for the club. In addition to his club responsibilities, he has volunteered for a number of gaming-related companies, both to demo games and behind the scenes.

Matthew, who plays around 30 games a month, has recorded all his games played since 2006. In his spare time, he is working on programming a website to compile data based on those game statistics. He owns around 220 games, plus another 76 expansions. He chooses them based not only on his own likes but on how well they will play with his opponents:

I was thinking, do I need another Uwe Rosenberg game about farming. Then I thought why not, every other game I bought from him has been a success in almost all the groups I play with. I play a whole group of different playing groups and every of those groups enjoys those games. It's always a success.

He is concerned that he is running out of space to store games, but is considering building a house with a friend. Failing that, he will dispose of old text books from University before downsizing his game collection. Listing the games he has played recently, Matthew describes a number of long and heavy games like *Fields of Arle* (Rosenberg, 2014), *Caverna* (Rosenberg, 2013), *Murano* (Brand & Brand, 2014), and *Eclipse* (Tahkokallio, 2011), but notes that he also played five games of *Disney Frozen*

Monopoly Junior with a friend's six year old daughter. He praises her ability to maintain focus and interest, and desire to play again.

C9. Laurel

"I still game on my iPad just with me and I play boardgames and I still ... it's still a real part of my identity, it's just not a part that gets used much anymore."

Laurel is a single mother in her early 40s, with a seven-year-old son. Unlike the other participants in this study, Laurel does not engage actively with boardgaming communities, although she has participated in local role-playing game communities for around twenty years after first playing *Dungeons and Dragons* aged 16. She notes that "We always played board games in the background" but started playing them more after her marriage "as entertainment because you can't clean the house and have sex all the time". As a high school English teacher, she found boardgames a more comfortable fit than role-playing games ("with some people thinking oh my god you're doing devil worship") in a conservative school environment, although she feels that the skills required to run a role-playing game are similar to those required to manage a classroom.

For Laurel, part of the appeal of boardgames is the limited time commitment required for play, as compared to role-playing games and "Freeforms", a local LARP-style game genre. After the birth of her child, she found that "I just don't have the wherewithal for the social and physical things that [role-playing/LARP] requires of you, 12 hours, no." She feels that people who gamed as students "can't play the way that you used to play when you were a footloose and fancy-free teenager".

Laurel's marriage broke up not long after the birth of her child. She sees gaming – particularly role-playing – as heavily gendered. Interestingly, she felt this less in the early days of the hobby – "When we did it, you just got on with it. You were just there." – but as the hobby has matured and the participants have aged,

I think women grow out of it more. There weren't as many of us women role-players in the beginning and we would prioritize things like children and house cleaning and breakfast over role playing. You know?

In contrast to this, she sees two distinct groups of men:

There was a very big divide between people like [my ex] who were I think immature and didn't understand how to fit it in a normal life ... that was their life forever. There they are at ComicCon at 60 still wearing their Dr. Who costume ... [and] the guys that were managing to have a corporate career and a family and a role-playing life. ... I really see a difference between people's maturity level in the people that can manage a career and a hobby and people who can't manage role-playing as anything but a lifestyle ... that whole golf widow thing.

She raises the GamerGate “obsession” and speculates that

Men were, I think, a little more open to sharing their hobby with women when there weren't so many of you. When you weren't a threat and when you weren't changing the game ... Now it's like, oh no you're in my space. You're taking away my fun. Your fun has to come at the expense of my fun, and it's like no. It doesn't have to.

Laurel enjoys playing games with her son now and looks forward to playing others as he gets older – she describes *The Lord of the Rings* as “a treat waiting for us in the future”. She also enjoys word puzzles and hidden object games on her iPad – “I like the sense of success”. As someone who values knowledge about games, she felt validated when her father turned to her for advice, on buying boardgames for each of his children's families one Christmas. Particularly as a single parent with a limited income, she sees boardgames as offering good value. “You get a lot of entertainment out of one financial output”. She finds that digitised boardgames offer a convenient way to play either against an AI player or with other people, even if she is doing something else at the same time.

C10. Oliver

“If you want to play boardgames, you need to have people to play boardgames with. If you alienate them by being overly competitive or immovable in certain areas, people won't come. Then, the club gets smaller and then suddenly, there's nobody to play boardgames with. For the sake of your own selfish needs, you do have to be, what's the word, you have to compromise sometimes.”

Oliver is an IT professional in his late 40s. He lives in Europe with his wife and five children, although the older children have left home to attend University. Oliver identifies as an involved father, particularly when his children are young, spending time drawing, playing games with them, and reading to them. As well as being a hobbyist boardgamer, Oliver also designs and publishes boardgames.

When Oliver was in his teens, he played games like Risk (Lamorisse & Levin, 1959) and Diplomacy (Calhamer, 1959), as well as role-playing games, with his grandfather. He played boardgames and Role-playing games at university, after he was introduced to them by a friend. Later, he discovered Magic: The Gathering (Garfield, 1993), which he played competitively, attending conventions and tournaments. He notes that it cost a lot of money, but “was really great, sort of a social expense”.

Then, I had a bit of a losing streak after quite a long winning streak. I got so fed up with Mana screw and Mana glut that I sulkily strutted off to the end of the room ... and started playing their boardgames instead. That rekindled my interest in it already. I just never migrated back, I just stayed on the board game side of the room.

Games like *Glory to Rome* (Carter & Chudyk, 2005) and *Agricola* (Rosenberg, 2007) – which he describes as “my number one boardgame of all time” – drew Oliver in to the boardgaming hobby.

I liked the discovery elements in a lot of these games where you could sit down and play it and you'll go, 'Yeah, that was fun.' Then, you might play it again and go, 'Actually, no, I really enjoyed that but I've discovered something about the game that I didn't know before.'

Oliver's games live in what used to be his dining room. Originally fitted out as a library, it now also holds his games and vinyl LP records. He also has a 'shed' which he uses as a design studio and office for his game design and publishing activities. He owns about 350-400 games and tries to trade unplayed games or sell them at the 'bring and buy' at local conventions. One year, he sold some Magic cards;

In fact, that money stayed in my passport for a couple years. It funded two Essen trips, the hotel fees, and all the games and food that I bought. I thought that's a good return really on what was basically nine bits of cardboard. I got two years worth of fun and games out of it.

Oliver values the physicality of his games and their components. He likes to 'bag' game components in zip-lock bags inside the box, but

I'm not one of these fascists that says, "Oy! Don't put wood in with cardboard!" I'm quite happy to set up a baggy with everything that you need to start as a player. That will be wooden bits, cardboard, money maybe, and all that kind of stuff. I do draw the line at elastic bands. I do not use elastic bands on anything anymore. I've seen the results of this. ... I tend to put stuff in bags. I do like cards in bags because they move around a bit but the bags help them to flatten out a bit. This is getting quite obsessive now, isn't it? You're laying things flat in the box so the

box actually sits properly, the lid goes properly on the base and things don't rattle around too much.

Oliver has a regular weekly games night with friends at a local pub. For a time, he was living away from home during the week, and played games every night. Games were a great social outlet, but he is happy to play less when he can spend time with his family.

“When I was working away, it's purely practical because if I wasn't out gaming, I'd probably go out drinking. If I didn't go out drinking, I'd be sat in my room being utterly miserable because I wasn't at home. Now, I'm home. It's where I really want to be.”

C11. Eric

“I just like the sexiness of building power plants in Germany.”

Eric is in his early 40s and is married with no children and two cats. An introverted IT professional, he moved to Australia from Europe around 15 years ago. His hobbies include boardgaming, walking, cycling, watching TV and programming. Asked whether his wife also plays games, he laughs that “Well, she tricked me! We met at first, she played a bit ... but she plays much less now”. As a result, he plays less than he used to, although “she seems fine and sometimes tells me to go. Go away!”

As a child, Eric enjoyed “a bit of *Monopoly* and computer”, principally adventure games and arcade games, moving on to boardgames like *Risk* (Lamorisse & Levin, 1959), *Supremacy* and *Full Metal Planète* as well as some role-playing games in his native language. After changing schools in his final year of high school, he saw less of his friends and, perhaps as a result, started playing more videogames. At University, he played mostly *Solitaire*, *Civilization* and occasionally LAN games like *Warcraft 2*. He rediscovered boardgames through a local club around eleven years ago, after his move to Australia, and now “I've got more than 800 games.” He tracks both his plays and his games owned on BoardGameGeek and saw the existence of badges for owning more than 500 games as an incentive to keep buying more games.

I had comfortable jobs where I could afford buying games even though I probably only played part of them. I'm trying to slow down now, only buy interesting games and with this group of friends, I try not to buy games that they wouldn't be interested in

Eric has become less concerned with protecting his games after a flood at a previous home, as well as a snail attack on some games that he stored in a shed. Despite this, he has very firmly held ideas on how to store games: “I like to keep them flat because when I see games on the side, it hurts me”. He gives a pointedly pained look at my game shelves, where most of the boxes are stored on their sides.

I can feel the bits stropping to one side and crushing themselves and crushing the inserts. If there're not compressed enough on the sides, they can open and then spill and all that. I just keep them flat and then alphabetized. Left to right ... It's easier to find.

For Eric, the chief joy of playing games is problem solving. He is attracted to the intellectual challenge, and notes that “I’m probably not the most social type” – although friends and gaming with friends feature prominently in his interview. He enjoys playing games on his iPad, “say playing *Ticket to Ride* in 10 minutes when there is no one else around ... That's very nice”, and more commonly plays digital games against the AI than against human opponents. In person, “With the real board you've got cards in hand and bits on the board”, he laughs that he has “Maybe a bit of OCD-ness” in trying to align the pieces on the board. “With real board games”, Eric enjoys “that you can really look at anything on the board ... You can take back turns and look at other cards if you want to and so on which might not be possible in some computer games.” This approach to taking back turns is a pragmatic one that is perhaps related to his love of longer games: “Mistakes happen ... You shouldn't be punished for a couple of hours because of an early mistake.” Unsurprisingly, perhaps, Eric prefers games without direct conflict.

Appendix D: Study 1 Methods

In this Appendix, I present additional information about the Method for Study

1. I outline:

- Selection of games;
- Limitations of the study;
- Familiarisation with the games; and
- A note on *Agricola*.

The methods for this study comprised case studies, in the form of artefact reviews, for each of three games. These were analysed using case-to-case synthesis. I also reviewed material from online communities and forums, as well as from mass media, to add context to the discussion.

1. Selection of games

I selected three games for the case study review: *Puerto Rico* (Seyfarth, 2002), *Agricola* (Rosenberg, 2007), and *Ascension: Chronicle of the Godslayer* (Fiorillo & Gary, 2010). These were selected from my own knowledge of popular games which had novel or interesting interfaces, had different core mechanisms, and were interesting in the specific context of digitisation. For both *Puerto Rico* and *Agricola*, I identified both a professionally developed interface for online play and an amateur, “unauthorised” version. Importantly, each of these unauthorised versions publishes data derived from gameplay. I have not been able to find an authorised edition of any game which releases this information to the public, although some designers develop their own simulations during game development to aid in game balancing. I chose *Ascension*, another highly-rated game, because it was developed simultaneously as a cardgame and as a digital cardgame.

Both *Agricola* and *Puerto Rico* were clear candidates for this study. Each spent considerable time as the top-rated game on Boardgamegeek.com, and each appeared as (at least) an official app and an unofficial, fan-made version. *Ascension* peaked in position 238 on November 7, 2011 (Scott Alden, Boardgamegeek.com, personal communication) but has nevertheless had considerable commercial success. Moreover,

it was unusual at the time of writing in that it had been developed from the start to be released concurrently as both a tabletop game and playable app.

Writing this paper in 2015, we noted that, “both *Puerto Rico* (Seyfarth 2002) and *Agricola* (Rosenberg 2007) have spent significant time at the top of the BoardGameGeek rankings and remain in the top 5 games.” As at September 2018, the games have slipped to 15th (*Puerto Rico*) and 19th (*Agricola*) positions overall, although both continue to be rated highly with a “GeekRating” of 7.941 (*Puerto Rico*) and 7.913 (*Agricola*).

	<i>Puerto Rico</i>	<i>Agricola</i>	<i>Ascension</i>
Rank in 2015	“top 5”	“top 5”	?
Rank Sep 2018	15	19	517
GeekRating	7.941	7.913	6.83
Number of ratings	54,000	54,000	10,000

The top 14 games on the site are currently rated 8 or above; of these, only *Twilight Struggle* (2005) was published before *Agricola* (2007) and none before *Puerto Rico* (2002). A revised edition of *Agricola*, released in English in 2016 (Rosenberg, 2016) by publisher Mayfair games, is currently ranked 107 (Geekrating 7.415). *Ascension: Chronicle of the Godslayer* (since renamed *Ascension: Deckbuilding Game*) is ranked 517, with a Geekrating of 6.823. With over 100,000 games catalogued on BoardGameGeek, of which 15,924 have attracted enough ratings to become ranked¹, these games are important titles both for their longevity in a hobbyist community that at times seems consumed by “the cult of the new” (Leach, 1993) and for their recognised quality; the analysis and discussion in this paper, as well as the selection of games, remains relevant today.

¹ At the other end of significance, the lowest ranked games on BoardGameGeek– again, as at September 2018 – were *Tic Tac Toe* (15,924; GeekRating 3.444), *Chutes and Ladders* (15,923; GeekRating 3.540), *Candy Land* (15,922; GeekRating 3.736) and *Bingo* (15,921; GeekRating 3.810).

2. Limitations of the study

If I were to extend this Study to review other game artefacts, the obvious choices for additional case studies would be *Carcassonne* and *Ticket to Ride* – both of which have enjoyed excellent digital implementations and support from their publishers. *Carcassonne*'s particular interest lies in the digital representation of the ever-increasing table space as well as in the material manifestation of the impossible – indicating with an X those spaces where no remaining tile will fit – and the possible – showing where the player's current tile may be placed (Björk, Zagal, Dormans, & Deterding, 2015). In gaming, this has the potential to transform the game experience, removing some of the cognitive load from the player as they no longer need to identify possible locations for their tile but must simply assess which of the indicated spaces presents the best option. *Ticket to Ride* is of interest because – as I note in Chapter 4 – its publishers Days of Wonder have explicitly acknowledged its app's value as an entry-level tool to attract players to buy the boxed boardgame. Like the publishers of *Ascension*, Days of Wonder have embraced the possibilities of digitisation for *Ticket to Ride*, making it playable on a host of platforms including PC, Mac, iOS and Android and implementing a detailed player-ranking system. Each of these games represents a more mainstream digital implementation which would nevertheless be interesting to observe.

Boardgaming platforms – digital tools which allow the play of boardgames with remote opponents in either real time or turn-based play – would also be of interest for further study. Well-known platforms include *Brettspielwelt*, a German platform for boardgame play in real time, *Yucata.de*, a hobbyist-run website supporting asynchronous play, and *Tabletop Simulator*, which – like *play-Agricola.com* – allows players to play selected games online at a 'virtual tabletop' without implementing the game's rules. Each of these sites supports a large player base and multiple different games.

3. Familiarisation with the games.

Once the games were identified, I conducted an artefact review of the games themselves and of their digitised counterparts. Having previously played each of the boardgames at least tens and possibly hundreds of times in their printed form, I revisited them in a range of formats. I played *Puerto Rico* on my dining table, as well as

on *Brettspielwelt*, on iOS and, after some fiddling with older versions of Excel, on the *Puerto Rico Evolver* spreadsheet. Similarly, I played *Agricola* in its physical form and on iOS, and observed play and discussions on play-Agricola.com, and I played *Ascension* in both its physical and digital (iOS) forms.

4. A note on Agricola

It is important to acknowledge a closer connection to one of the games I discussed. In 2007-2008, I translated the game *Agricola* from German to English (see Evans, 2013 for a discussion of boardgame translation that includes quotes from blog posts I wrote at the time). This translation was subsequently used as the basis for many of the international editions of the game, which were translated from English rather than from the original German. I also co-designed two of the game's expansions, the Z-Deck (Girke, Rogerson, & Rosenberg, 2008) and X-Deck (Fair et al., 2008). Beyond the pride of the validated hobbyist, and perhaps a slightly increased share of gaming capital (Consalvo, 2007; Walsh & Apperley, 2009), I have no financial or other interest in the game. A new edition of the game, which was released in 2016, was re-translated from German but acknowledges my original translation in an appendix. Interestingly, it also acknowledges Chris Deotte, the creator of the unofficial play-Agricola.com website which I discuss in this chapter, and that site's value in testing the relative strength of the many different cards that can be used to play the game.

Appendix E: Study 2 Methods

In this Appendix, I present additional information about the Method for Study 2. I describe:

- Participation selection and recruitment; and
- Interview format; and
- Interview protocols.

The methods for this study comprised semi-structured interviews, conducted both face to face and using skype or the telephone. These were analysed using thematic analysis.

1. Participant selection and recruitment

As this was intended as a study of hobbyists, participants were recruited from within the boardgaming community using advertisement on a boardgame-specific email list, social media, and BoardGameGeek.com. I displayed advertisements inviting participation at local gaming stores and events, but these did not lead to any successful recruitment. Using the Snowball method (Atkinson & Flint, 2001), people were encouraged to pass the researcher's contact information on to friends or gaming partners who might, in their opinion, be interested in the study. I selected 17 research participants to interview from the 33 who responded to my initial request, with a view to diversity in age and gender and, to some extent, in location. Of these, 11 followed up to confirm their availability.

As this was a qualitative study, which sought to gain a deep understanding of the experiences of a representative group, rather than a quantitative overview of an entire cohort, I had aimed for a sample size of fifteen participants which would be sufficient to achieve data saturation and to generate a manageable quantity of data, with all relevant themes identified (Guest, Bunce & Johnson, 2006). In practice, I felt that this data saturation was achieved with the 11 interviews that I conducted and did not feel that it was necessary to conduct further recruitment and interviews.

Like Comella (2017, p. 231), I found that participants were eager to be part of this research. It seems likely that this may have been at least in part due to the perception that this was “insider research.” I discuss this further in Chapter 3.

2. Interview format

I used a semi-structured conversational interview format, with the aim of stimulating discussion. Through the interviews, I sought to encourage participants to describe their personal history as a gamer, and to discuss their likes and dislikes. I also asked questions about when and where they game and who they game with. Inspired by some early answers, I also asked later interviewees about the overall cost of their gaming hobby and about new skills that they might have acquired through gaming. This was an attempt to probe the habit of crafting and “making” that some participants had noted, as well as to explore the financial as well as emotional commitment that they make to the hobby. Some broad demographic questions established age, location and other descriptive details.

Of the eleven interviews, all but one of the Australian interviews were conducted face to face, primarily in my own home but also while I attended a boardgaming event in another state with my family. The remaining interviews were conducted over the telephone or using skype. I had allowed an hour for each interview, which I had expected to be sufficient, but as Table 1 shows, seven of the eleven interviews ran for longer – in many cases, for much longer. When I tried to move the interviews towards a conclusion, conscious that we had nearly reached an hour, interviewees told me that they were keen to continue with the interview, to make sure that they had said what they needed to. “I’ve got plenty of time,” said Matthew; Simon noted, “I’m loquacious, that’s fine.” When Laurel had to leave after 40 minutes due to childcare responsibilities, she rescheduled a second, one-hour interview slot, to continue the discussion.

3. Interview protocol

- Questions regarding the player’s gaming habits
 - o Do you like to play games?

- o What do you like about playing games? What don't you like?
 - o What sorts of games do you like to play?
 - o How did you get started? How long have you been playing?
 - o Who do you play with? Where do you play games?
 - o Do you prefer to play a variety of different (types of) games or do you prefer to stick to the same game (type)?
 - o Do you play boardgames online/on digital devices? (Why, what do you enjoy about it?)
- Demographic questions
 - o How old are you?
 - o What is your job?
 - o What region do you live in?

Appendix F: Study 3 Methods

In this Appendix, I present additional information about the Method for Study 3. I outline:

- Participant recruitment and selection;
- Data collection;
- Data reduction and analysis;
- Game selection;
- List of Games; and
- Summary of Sessions.

The methods for this study comprised case studies, in the form of artefact reviews, for each of three games. These were analysed using case-to-case synthesis. I also reviewed material from online communities and forums, as well as from mass media, to add context to the discussion.

1. Participant recruitment and selection

A total of 33 people participated in Study 3 across seven sessions, with two participants each attending two sessions. Sessions comprised four to six people and were held in the Interaction Design Lab at the University of Melbourne. The well-lit room contained a table and chairs, as well as side tables. I supplied snacks and drinks (water and soft drinks) as well as a selection of games, which are discussed below. Figure 1 shows some basic demographic information, as well as information about how participants found out about the study. Two participants had previously participated in Study 2.

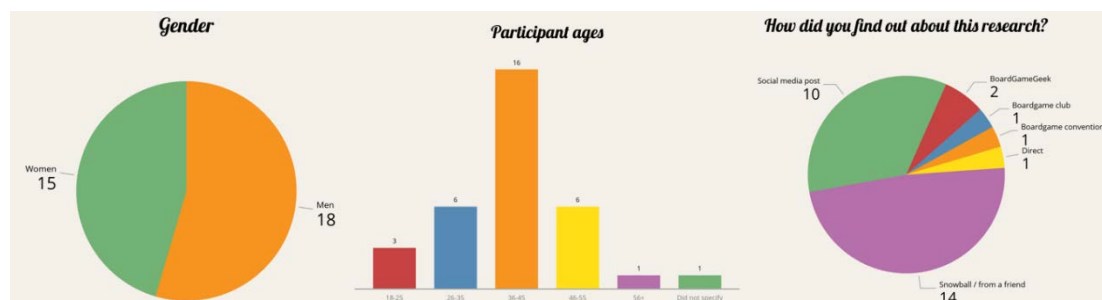


Figure F1 Demographic information, Study 3

This study used a similar Snowball-based sampling method to Study 2, using social media, local boardgaming events, groups and clubs to share a link to a screening survey. Although the initial recruitment push was for people with a range of experience of boardgames, given the relatively low numbers of respondents I chose to focus this study on serious leisure boardgamers. People who responded to the initial survey were then invited to select a session to attend – either on their own or with a friend. Three sessions consisted of established gaming groups – that is, people who regularly played together. In two cases, they were able to attend on their regular gaming night; it was just the location that was different. Others brought a partner or family member but joined a session with strangers.

Although boardgaming has been characterised as a mainly male-dominated hobby and appears so from participation patterns on websites like BoardGameGeek, this has not been my experience and is not borne out in the numbers of participants in this study². This may be a quirk of the Australian experience, and particularly of the environment in Melbourne where there has been considerable attention to promoting boardgame play as a social experience rather than a “nerdy” pastime. My own role as the (female) researcher may also have been significant here.

The age range of the participants may have been a result of my own social reach and skewed by one of the gaming groups where four of the six participants were over 50. With an overall mean age of 39.8, participants were slightly older than the average age of 36 noted by Woods (2012, p. 122).

2. Data collection

I developed a novel method for data collection, to support the “rudimentary methods” (Crabtree et al., 2007) afforded by my own contemporaneous note-taking and the video records and consequent transcripts of the play sessions. I invited one participant in each session to wear a Tobii Pro 2 wearable gaze tracker. Unlike the eye tracking studies described in section 4.4, which are primarily designed to produce

² I contrast this with memories of early Australian role-playing game conventions: the organisers of Arcanacon (1983), my first gaming convention, recollect that it boasted around 11-12% women attendees.

quantitative data, I used the gaze tracker as an additional qualitative tool for understanding the player's experience and perspective. Further papers describing this method in more detail are included below, in Appendix G.

The main advantage of this method was that it provided additional information about the ways in which the player makes sense of the game. Eye trackers provide useful information about attention – where the wearer is looking at a given time. Thus, we could see that a player was looking at other players' play areas, or at their cards, although we did not have insight into what the player was thinking at the time.

3. Data reduction and analysis

A significant challenge in participant observation is the need to manually review and code the data. This can be a lengthy process; researchers have suggested that it can take as much as three hours to code five minutes of eye tracking material (Segall, Taekman, Mark, Hobbs, & Wright, 2007). This was particularly significant in this study as I collected over 15 hours of video data.

Following transcription, with data reduction as a priority, I first identified interesting passages of video material before coding them in detail (Heath, Hindmarsh, & Luff, 2010). I did this from reading transcripts and from viewing the video footage, as well as from reference to my own notes taken during the sessions.

In order to understand situated human cognition, it is not enough to know how the mind processes information. It is also necessary to know how the information to be processed is arranged in the material and social world. (Hollan, Hutchins, & Kirsh, 2000, p. 179).

Because the aim of this research was to enhance understanding of the role of materiality in the play experience, I used rich, descriptive, game-specific terms to describe the direction of the eye gaze. I use a table with the following columns.

- Timestamp
- Speaker (pseudonyms are used for all players)
- Transcribed text

- Active player (shown as a number, where 1 is the player wearing the glasses, and players are numbered incrementally around the table in clockwise order)
- Activity (a description of what is happening at the table)
- Gaze (only Player 1 wore gaze glasses; it is their gaze direction that is described)
- Notes – any further observations and analysis

An example is presented below.

Time-stamp	Speaker	Text	Active Player	Activity	Gaze (1)	Notes
00:10:25	Rosa (6):	Attacks being claws.	6	1 moves his “Meka Bunny” cardboard standing figure closer to himself	Looks at Meka Bunny	
				6 rolls dice		
00:10:29	Rosa (6):	1 claw. That's me.			Gaze moves between the die faces	

Figure 2 Playing *King of Tokyo* (Garfield, 2011) at 00:10:25.

This approach allowed me to readily compare and revisit sections of the text as well as to achieve thick description of the participants' activities.

4. Game selection

I provided the games for the sessions. I selected 13 games based on the following criteria (see below):

- Availability – it stands to reason that I could only provide games that I had access to.
- Player number – all games had to accommodate 5 players, the target number of participants per session.
- Playing time – game sessions were limited to two hours, although every group ran over time. Accordingly, I tried to have a mix of games that could be combined for play in that two hour slot.
- Novelty (Variety) – I aimed to support a range of different game mechanisms and interaction types. These included:
 - o dexterity (*Rhino Hero* (Frisco & Strumpf, 2011)),
 - o co-operative gameplay (*Hanabi* (Bauza, 2010b)),
 - o role selection (*Puerto Rico* (Seyfarth, 2002)),
 - o trivia (*Fauna* (Frieze, 2008)),
 - o worker placement (*Agricola* (Rosenberg, 2007)),
 - o point-to-point connection (*Power Grid* (Frieze, 2004)),
 - o board movement (*Concordia* (Gerds, 2013)),
 - o card drafting (*7 Wonders* (Bauza, 2010a)),
 - o pattern recognition (*Cockroach Salad* (Zeimet, 2007)),
 - o tile placement (*Carcassonne* (Wrede, 2000)) and
 - o deduction (*Mysterium* (Nevskiy & Sidorenko, 2015)).

Additionally, I purchased copies of *Spyfall* (Ushan, 2014) and *King of Tokyo* (Garfield, 2011) for the study, to provide more variety to participants; these games supported social deduction and direct combat between players.

- Popularity – I tried to select a range of games that players would feel familiar with or at least have heard of, rather than obscure titles that might feel alienating or intimidating. This also led to a mix of older and newer games, with publication dates ranging from 2000 to 2015.

The games were displayed on a table in the lab, with a chart of brief information about each game displayed on a noticeboard above the table. The chart,

which I have included below, also contained information about the recommended number of players, genre, ranking, playing time and BoardGameGeek ranking of each game.

In practice, four games were not played at all, and the majority were only played once. An exception was *Hanabi*; I asked four groups to play that first, to avoid lengthy decisions about which game to begin with. None of the other groups chose to play it. Table 4 shows the games that were played in each session, as well as the number of players.

Table 1 Games played by session

Session	No. of players	Game/s played	Notes
A	5	Hanabi 7 Wonders	
B	5	Hanabi Puerto Rico	
C	5	Hanabi Carcassonne	Group regularly plays together.
D	5	Hanabi Mysterium	
E	5	7 Wonders Mysterium	
F	6	Rhino Hero Spyfall King of Tokyo	Group regularly plays together.
G	4	Concordia	Group regularly plays together.

5. List of Games

The following games were played during at least one session. The final column indicates my reason for including the game in the study.

Game	Year	Players	Subdomain	Playing time	Category / Mechanism	Avg Weight	BGG rank	Num ratings	Interesting because
7 Wonders	2010	3-7	Family games 1 Strategy games 20	30m	Card drafting Set collection Simultaneous action selection Variable player powers	2.3	22		Players look at tableaux to either side not in middle
Carcassonne	2000	2-5	Family games #12	30-45m	Area Control / Area Influence Tile Placement	1.9	119	56047	Orientation of tiles
Concordia	2013	2-5	Strategy 29	100	Card drafting Deck/pool building Hand management Point to point movement	3.2	45	5856	Counting regions, movement, sorting cards, language
Hanabi	2010	2-5	Family games 20	25m	Co-operative play Hand management Memory Set collection	1.7	169	17563	Positioning of cards & tiles as memory joggers
King of Tokyo	2011	2-6	Family games 34 ³	30m	Area control / area influence Card Drafting Dice Rolling	1.51	197	27794	More direct interaction

³ Ranking and weight data for *King of Tokyo* were recorded in November 2017. For comparison, the rank of *7 Wonders* had dropped from 22 to 39 overall and from 320 to 33 in Strategy games. *Agricola* dropped from 7 to 14 in Strategy games and from 7 to 15 overall; *Puerto Rico* from 6 to 12 in Strategy Games and from 6 to 14 overall. “Weight” data remained the same.

					Player elimination Press your luck				
Mysterium	2013	2-7	Party 7 Thematic 51	30-60	Co-operative play Hand management Deduction	1.9	235	3630 ⁴	Overtly social interaction
Puerto Rico	2002	3-5	Strategy 6	90-150	Variable phase order	3.3	6	41876	Re-stocking ship is often forgotten
Rhino Hero	2011	2-5	Children's games 3 Family games 122	5-15m	Action/Dexterity Children's game Party game	1.0	680	1553	Dexterity
Spyfall	2014	4-8	Party 13	15m	Bluffing Deduction Humor Party Game	1.3	215	4961	Negotiated behaviour

The following games were available for play but were not selected by any groups.

Game	Year	Players	Subdomain	Playing time	Category / Mechanism	Avg Weight	BGG rank	Num ratings	Interesting because
Agricola	2007	1-5	Strategy 7	30-150	Worker placement Area enclosure Card drafting Hand management	3.6	7	41893	Stacking resources
Cockroach salad	2007	2-6	Party 170	10-20m	Pattern recognition Real time	1.2	2034	1499	Negotiated rules/ error margins

⁴ *Mysterium* was first published in Ukrainian (as Містеріум) in 2013. A Polish version, *Tajemnicze Domostwo*, was produced in 2013. Following delays in securing an English-language release, Polish publisher Portal games secured widespread distribution of *Tajemnicze Domostwo* into English-speaking countries. An English-language version was released in late 2015, with some rules changes, and is recorded on Boardgamegeek as a separate game. There are 3630 ratings of *Mysterium* (English), and another 2729 of *Tajemnicze Domostwo* (which has been translated from Ukrainian into published editions in Polish, Estonian, Latvian, Lithuanian, Italian & Russian). It is unclear how many of these ratings are specific to the published version.

Game	Year	Players	Subdomain	Playing time	Category / Mechanism	Avg Weight	BGG rank	Num ratings	Interesting because
Fauna	2008	2-6	Family 73	45-60m	Education Trivia	1.5	474	2700	Gesture
Power Grid	2004	3-6	Strategy 14	120m	Action/bidding Route/network building	3.3	13	36505	House placement

6. Summary of sessions

A total of seven sessions were run for study 3. The tables below summarise participants and games played, as well as demographic information.

Session 1: 24/2/2016

	Cora	Anne	Max	Sally	Julie
Gender	F	F	M	F	F
Age	61	39	34	34	ns
Experience with boardgames	9	8	9	7	7
Hanabi	5	3	8	8	7
7 Wonders	3	3	1	10	7

Description

Cora and Julie know one another; the others attended independently.

Session 2: 27/02/2016

	106	107	108	109	110
Gender	M	M	M	M	F
Age	52	18	18	52	38
Experience with boardgames	10	4	5	9	7
Hanabi (deluxe)	7	1	3	7	8
Puerto Rico	8	1	4		7

Description

Three of the players know one another through active participation in local gaming groups. One of them brought his stepson and a friend of the stepson. They are less familiar with games than the others.

Session 3: 9 March 2016

	111	112	113	114	115
Gender	M	F	F	F	M
Age	42	29	29	40	29
Experience with boardgames	8	6	6	7	8
Hanabi (deluxe)	NA	5	5	0	2
Carcassonne	8	3	1	3	6

Description

111 and 113 are a couple who regularly play role-playing games with 112 and 114. 115 does not know any of the other participants.

Session 4: 23 March 2016

	Tim	Amy	Sara	Dan	Julian
Gender	M	F	F	M	M
Age	44	44	38	36	53
Experience with boardgames	8	5	7	8	5
Hanabi	8	0	0	0	1
Mysterium	8	0	0	6	2

Description

Tim & Julian have met previously at a gaming event where they both volunteered (they realise this during the session). Sara and Dan are a couple. Amy attends on her own.

Session 5: 6 April 2016

	121	122	123	124	125
Gender	M	M	M	F	M
Age	36	39	40	29	40
Experience with boardgames	7	6	8	8	7
7 Wonders	6	3	6	8	5
Mysterium	7	3	9	7	6

Description

This group regularly games together; they moved their regular boardgame session to the lab for the night.

Session 6: 1 June 2016

	Julian	Rosa	Edwin	Alan	Sophia	Miles
Gender	M	F	M	M	F	M
Age	53	51	50	51	42	45
Experience with boardgames	5	7	8	6	7	7
Rhino Hero	0	1	6	0	1	1
Spyfall	0	2	7	2	3	NA
King of Tokyo	3	3	7	2	8	8

Description

This group has been gaming together for over thirty years, although they usually play role-playing games.

Session 7: 25 June 2017

	Tiberius	Flavia	Crispus	Drusilla
Gender	M	F	M	F
Age	53	18	39	38
Experience with boardgames	10	9	9	7
Concordia	9	8	8	6

Description

This group regularly games together. Tiberius and Flavia are father and daughter; Crispus and Drusilla are a married couple.

Appendix G: What can we learn from eye tracking boardgame play?

In this Appendix, I introduce the novel method I used during the gaming sessions in Study 3, described in Appendix F.

This Appendix comprises a prior publication and is presented as-is, in its published form. It was originally presented at and published in the Extended Abstracts Publication of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY) in 2017, in Amsterdam, The Netherlands. It was reviewed by two reviewers.

This method was originally introduced in a paper at a Game Research Methods Symposium in Sydney, Australia, in 2017. I am grateful to all the reviewers who provided feedback on the paper and method, as well as to participants at the Symposium and at CHI PLAY for their interesting and interested discussion.

What can we learn from eye tracking boardgame play?

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Abstract

In this paper, we discuss exploratory gaze data findings from a series of co-located tabletop boardgame play sessions. We identified clear patterns of repeated gaze jumps between people and components, as players looked back and forth between various game materials in common play areas as well as their own and those of other players. Of interest was the repetition that occurred – players frequently referred back to specific elements several times – as well as the relatively short dwell times, which were typically well under a second. Contrary to our expectations, this gaze pattern occurred during other players' turns as well as the player's own. This work contributes to understanding of players' attention during play, and may be extensible to other forms of play and interaction outside the immediate traditional form boardgame setting.

Author Keywords

boardgames; board games; eye gaze; resting gaze; social gaze; leisure activities

ACM Classification Keywords

H.5.2 [User Interfaces]: Miscellaneous; K.8.0. [General]: Games; H.1.2 [User/Machine Systems]: Human factors



Figure 1 A study group plays *Mysterium*. Three of the players are looking at each other. In the background, the mirror and open door show the location of the control room.



Figure 2 Overhead view of a group playing *Hanabi deluxe*.

Introduction

In this paper, we describe observations from a study of serious leisure hobbyist boardgamers [18] playing games in a laboratory setting. We wanted to understand the interactions that occur, both with other players and with the game materials, during play of a traditional form co-located tabletop boardgame. We used a Tobii Pro Glasses 2 wearable eye tracker to track the gaze of one of the players in each session, although this was used to supplement our observations rather than as the primary research tool. This paper describes the gaze findings. We hypothesized that this would highlight different gaze patterns in different situations, and that we would see a pattern of lengthy, focused gaze when the player was taking their turn. Although we observed distinct gaze patterns which recurred during the sessions, we found that active engagement with a game was characterized not by lengthy and focused attention to a single element of the game but by repeated jumps between a variety of game elements, including the other players as conversational sociality overlapped with game play. Moreover, this gaze pattern was observed both when the player was taking their turn and when they were observing opponents¹ turns. We suggest that these players were aiming to understand or predict their opponents' actions or effects, or to plan their own turns.

This work has relevance for HCI and for the study of cognition as it relates to understanding human behaviours and interactions [20], as it contributes to

our understanding of the thinking processes experienced during play. Understanding gaze patterns in tabletop boardgames can inform the development of games and other interactions which use gaze as an interaction tool.

Related literature

In HCI, eye gaze tools are often used to review elements of an interactive tool [14] or as the basis for a user interface that eliminates external tools such as the mouse or keyboard in favour of gaze recognition as an interaction interface [4; 23]. Tracking eye gaze is well established as a tool for measuring attention [14] – that is, what a person looks at and for how long. Gaze data provides valuable insights into the experience of use, and has also informed understanding of cognitive processes. An extensive survey of boardgames showed that social interaction is the paramount aspect of boardgame play for many players [24]; this important element of co-located play is also referenced in EyePlay literature [22].

Although there has been research into eye gaze in playful interactions including natively digital games [5; 10], sports [17], and even flirting [3], and some exploratory research into making gaze patterns explicit in play of digitized boardgames [13], as well as into visualizing other physiological reactions such as heart rate [6], we are not aware of any research that has applied these techniques to understanding the interactions that comprise the native play experience of traditional form boardgames. With increasing interest in eye gaze as an interaction tool [22], as well as to visualizing gaze and other physiological behaviours during play, it is important to understand those behaviours in their native environment.

¹ We note that some of the games played (*Hanabi*, *Mysterium*) were co-operative, where players are not opponents but collaborators, but have used the word opponent for clarity.

The following games were played during this study:

- *Hanabi* [2] (4 plays, co-operative)*
- *Mysterium* [12] (2 plays, semi co-operative)
- *7 Wonders* [1] (2 plays)
- *Puerto Rico* [16]. (1 play)
- *Carcassonne* [19; 25] (1 play)
- *Spyfall* [19; 21] (1 play)
- *Rhino Hero* [7] (1 play)**
- *King of Tokyo* [8] (1 play)
- *Concordia* [9] (1 play)

Five other games were available but were not selected by any groups.

* Two different versions of *Hanabi* were available. Two groups played it in its original form, as a cardgame; two groups played "*Hanabi deluxe*," an alternative version of the same game in which the cards and cardboard tokens are replaced by resin tiles.

** The *Rhino Hero* players used the giant edition of the game published by Sugorokuya, Japan.

Method

We ran seven two-hour boardgame sessions with between four and six participants. A total of 33 people (15 women and 18 men) aged between 18 and 61 (average age 39.8) participated in the sessions. Two of the participants had also participated in a previous interview study that we conducted in 2015 [15][14][14]. Requests to be in the same session as another player were accommodated, so most sessions consisted of two or three people who knew one another already and two who did not know anyone. Three sessions consisted of established gaming groups; that is, groups where the participants knew one another well and gamed together regularly, who changed the location but not the day of their regular gaming meeting. In the second of these, one player brought along a friend who had not previously met the other participants. Although sessions were scheduled to last two hours, each session ran late as the participants wished to continue playing beyond the allotted time.

Although in most sessions some participants were unfamiliar with the chosen game, they had broad familiarity with the boardgaming domain. All participants were asked to complete a questionnaire, which addressed their self-rated (out of 10) expertise with boardgames and digital games. Players rated their knowledge of boardgames relatively consistently, with a mean of 6.95 (Standard Deviation 1.59) and 94% of results falling between 5 and 9. The mode and median were both 7. We also asked participants about their familiarity with the game that they played. 25% had minimal or no familiarity with the game (rating 1 or 2 of 10), 25% had some familiarity (rating 3, 4 or 5), 30% knew the game (6 or 7) and 21% were very familiar with the game (8, 9 or 10). The overall mean

for the specific game played was 4.45, with a Standard Deviation of 3.03. The mode was 8 and median was 5. Whilst we recognise that individuals tend to over-estimate their own expertise [11], we are interested in the differences between these two self-ratings. They highlight the different types of expert knowledge in a field: although participants generally rated their domain knowledge of boardgames highly, their specific knowledge of the played game was more variable. This variety led to interesting encounters where some players were able to teach the game to others.

Sessions were run in a large room in the Interaction Design Lab at The University of Melbourne. The lab includes a control room from which the researcher could view the room through one-way glass. Each session was audio and video recorded, with the participants' permission, and Tobii 2 Eye-tracking glasses were used by one participant in each session. The use of Tobii glasses was supplementary to the main observation techniques, and was largely exploratory.

A total of 13 boardgames (see sidebar) were selected for the sessions. All games were provided by the research team. Games were selected based on their availability to the researchers, player number (should accommodate 4-6), playing time (shorter and longer games but with a maximum playing time of around 90 minutes) and novelty, both in terms of the core game mechanisms and in terms of the types of interaction that they fostered. We aimed to offer both simple and more complex games, with a mix of well-known and less well-known titles as well as of game styles.

This paper reports on early observations from this study. Video data, as well as notes taken during the

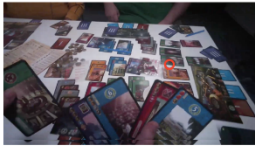


Figure 3 Playing *7 Wonders*, the player checks an opponent's tableau while she selects her own card.

sessions, has been reviewed and transcribed, however no exhaustive coding has been completed. Following identification of this broad pattern of repeated gaze jumps, we again reviewed the videos to confirm the patterns. These results suggest an interesting direction for future focus but are not and do not claim to be empirical or exhaustive.

Findings and Discussion

As we discussed earlier, we expected to identify different gaze patterns during play. More specifically, we expected that a player's behaviour when they were on turn would be different than their behaviour at other times, and would be characterized by lengthy and sustained attention to a particular part or parts of the board or game materials. In fact, these periods of active engagement were not restricted to the player's turn, and did not involve sustained attention to a single area of the board or table but rather demonstrated repeated reference to multiple distinct elements of the game space and even, at times, to other players.

The gaze patterns we observed were characterized by rapid (typically less than 1 second) and repeated eye movements as the player's gaze jumps between different elements of the playing area. Players spend time looking back and forth between pieces and at their opponents. Contrary to our initial expectations, this does not only occur during the player's own turn, but also during an opponent's turn. A player will typically look at her own or her opponents' tokens or cards, at the game board or collective playing area, and at her opponents' individual playing areas or tableaux. Her gaze reflects, unsurprisingly, the areas that she believes to be of interest; of interest is the repetition

which occurs as her gaze jumps between these elements.

This gaze pattern appeared to signify active engagement with the game, involving planning, analysing and understanding the game state and other players' motivations. For example, in the deduction game *Mysterium*, the player might look at a received dream card, look at the weapons they are to choose from, fixate on one tentatively-chosen weapon, look back and forth to other weapon cards or to their dream card, and even look at other players' dream cards or token placement before deciding on a particular weapon card. Here, their gaze is characterized by rapid and repeated back-and-forth eye movements between the different cards or tokens in the playing area and in their and their opponents' supplies. Similarly, in *Concordia*, we see players' gaze jump between checking other player's supplies, scanning available cards, and checking their own supplies. We stress that this gaze pattern is not only observed when the player is "on turn" or has an opportunity to influence play but also when they are observing another player's turn or action.

In the example below, the participants are playing *Hanabi* [2], a cooperative game in which players work together to place coloured cards on the table in sequential order from one to five. In doing this, players are restricted by being unable to see their own cards: each player's cards are faced away from them, so that the faces are visible to all the other players but not to the person who is holding them. On their turn, players may either play a card, spend a "clue token" to give another player a piece of information about their hand, identifying all the cards showing either a particular

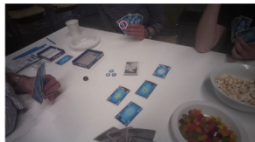


Figure 4 [15:58]. *Hanabi*, Dan's point of view. Dan looks at Amy's cards, focusing on the two 2s that could be played legally.

colour or a particular number, or they may discard a card to regain a clue token for the team. Incorrectly played cards trigger a "fuse" token – a countdown to a premature end of game. The theme of the game is to create a perfect fireworks show by setting off the fireworks in the optimum sequence. (In Japanese, *hanabi* is written as 花火; these are the ideograms flower and fire, respectively.). Players succeed or fail as a team; there is no individual victory condition. It is now Dan's turn; Tim, to his left, has been teaching the game. Players have been numbered in turn order. *Italicised text describes the instrumental gaze patterns that we observed.*

[15:56] Tim (2): I reckon we've given enough for Amy to do stuff with.

[15:59] Dan (1): (doubtfully) Yeah ...

[see sidebar image] He looks at Amy's cards and at the played cards on the table. She holds a white and a blue 2 and two white 3s. The white or the blue 2 could be played legally.

[16:01] Tim: (to Amy) We told you numbers, didn't we?

The other players agree. Dan looks at Tim's cards, then back and forth between Amy's and Tim's cards. Tim holds a white 1, a green 3, and red and blue 4s. None could be played legally at this point.

[16:07] Sara (4): Do you have to put the right colour? You have to pull the card out and put it right there?

She points to the piles of played cards, which Dan looks at.

[16:11] Tim (2): You don't have to know which part exactly it's going to. You just have to know that this is a valid play.

Tim gestures to the piles of played cards on the table (still four 1s – in each colour except red). Dan looks at the played cards, then briefly at the snacks, then at the cards in Tim's hand.

[16:23] Amy (3): If I took the risk and I took one of my 2's, and there wasn't the one there for it to go on, then that's a mistake?

Dan, still considering his turn, is looking at the played cards on the table as well as the cards in Amy's and Tim's hands.

[16:29] Tim (2): That would be a mistake, yes.

Dan looks briefly at a card that has already been decided.

[16:33] Julian (not playing): You don't have to know which one?

Dan looks at Julian, then back to Amy's cards.

[16:35] Tim (2): You don't have to know. You can know that it's a 2, and we're taking plenty of 2's at the moment, so it's a valid play.

Dan looks briefly at Sara's cards and then back to the table. Sara's cards cannot be played legally at this point; she holds a white 4, a yellow 3,

[16:42] Amy (3): My chances that it's going to be good, that it's going to be right, are pretty high.

Dan looks at the discard pile and at the used clue tokens in the box.

[16:45] Dan (1): I'm going to discard.

He draws a card from his hand to discard, then turns it over to reveal a red 1, which could have been played! Oh no! The players groan and laugh, as Tim lays it with the other discarded card.

This vignette highlights the different areas that Dan pays attention during his turn and, more broadly, during the game. He has three possible actions on his turn: he could play a card, he could discard a card, or he could give a clue about another player's card. He pays attention to the cards which have been played, which determine which clues might be valuable and which cards he might want to encourage other players to consider playing, as well as to the cards in other players' hands, which he could give a clue about. His interest in Amy's hand wanes after Tim (at 16:35) clarifies that she doesn't have to know which two she is playing, as he understands that either would be correct; no more information is required. As neither Sara nor Tim has any playable cards in their hand (16:35), he chooses instead to discard a card, which also allows the group to regain a clue token. This decision is also reflected in his consideration (at 16:42)

of the remaining and used clue tokens before he announces his decision to discard a card.

Conclusions

This preliminary analysis has identified distinct gaze patterns which occur during play of a traditional form tabletop boardgame. Specifically, we discussed a pattern of repeated jumps and short dwell times which occurs both during a player's turn and during their opponents' turns. These patterns were observed during play of both co-operative and competitive games. Further analysis of these and similar sessions will allow us to investigate the role of gaze in tabletop gameplay. An extension of this work could identify whether these attention patterns are also experienced during online play of digitized boardgames or of natively digital games, and whether it is possible to understand a player's engagement with the game (and even to predict their actions) based simply on their gaze data. This work focuses on understanding players' attention during play, and has potential to inform research on other forms of play.

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Appendix H: Exploring the Digital Hinterland: Internet Practices Surrounding the Pursuit of “Offline” Hobbies

This Appendix comprises a prior publication and is presented as-is, in its published form. It was originally presented at AOIR2017, the 18th annual conference of the Association of Internet Researchers, in Tartu, Estonia. The conference had a 40% acceptance rate. At the time of writing, the Proceedings of the conference have not yet been published.

I am grateful to the two anonymous reviewers who provided feedback on the paper prior to its publication.



Selected Papers of #AoIR2017:
The 18th Annual Conference of the
Association of Internet Researchers
Tartu, Estonia / 18-21 October 2017

EXPLORING THE DIGITAL HINTERLAND: INTERNET PRACTICES SURROUNDING THE PURSUIT OF “OFFLINE” HOBBIES

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Introduction

The practice of boardgaming is thoroughly material, with abundant pawns, cubes, cards, dice, tiles and other game components contained within the box. However, this rich material engagement is surrounded by a “*digital hinterland*” of online practices that sits behind and frames the way that boardgamers experience games and gaming. Although boardgames are, increasingly, playable in digital form (Rogerson, Gibbs, & Smith, 2015), in this paper we focus on the digital practices that surround offline play but *are not themselves* play. Using the example of BoardGameGeek.com, we demonstrate that these practices provide an environment for knowledge-sharing, collaboration and co-operation (Blau, 2011) in which participants accrue a form of gaming capital (Consalvo, 2007). We extend these findings to show that similar practices exist for other offline hobbies, notably reading (Goodreads.com) and yarn crafting (Ravelry.com).

Method

We conducted eleven semi-structured conversational interviews with serious leisure boardgamers (Stebbins, 2015) in the USA, Europe and Australia, aged from mid-20s to early-60s. Four were female, seven male, and all worked or were retired from white-

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collar jobs. All were regular participants on BoardGameGeek. Through questions like “What do you like about playing games?” and prompting, we sought to understand their motivations – what attracted them to the hobby, and what they enjoyed about gaming – as well as the ways in which they engaged with their hobby, both in person and online. All interviews were transcribed verbatim and were analysed using thematic coding (Cote & Raz, 2015) informed by our engagement with the boardgaming hobby. After we identified five key digital practices, we visited the Goodreads and Ravelry websites to determine whether and how they appeared.

Findings

Although several participants described playing boardgames as an explicitly non-digital practice, and despite the deeply embedded materiality of these games (Rogerson, Gibbs, & Smith, 2016), the internet is central to boardgamers’ description of their engagement with their hobby. Like Ravelry.com (Hellstrom, 2013; Hudson, 2010) and Goodreads.com (Naik, 2012), BoardGameGeek is an information world containing “social norms, social types, information behavior, information value, and boundaries.” (Worrall, 2013, p. 2). Unlike Ravelry or Goodreads, however, which focus on the generally solitary hobbies of reading (Nakamura, 2013, p. 239) or crafting, playing boardgames is *already* inherently social. BoardGameGeek, like Ravelry and Goodreads, extends that sociality from the immediate game environment to the broader practices of researching, collecting, cataloguing, discussing and tracking.

Researching: Participants research games on BoardGameGeek, often in preparation for large events such as the *Spiel* fair in Essen, Germany. They may read reviews, download rules, watch user-contributed play-through videos or listen to podcasts. Research builds and supports the gamer’s emic knowledge and informs wise purchasing. Similarly, Goodreads allows users to browse for recommendations and to read book synopses and reviews, and Ravelry provides encyclopaedic information about yarns and projects, or things that can be made. Each site offers a form of filter which privileges friends’ contributions over those of unrelated participants; this is most overt on Goodreads.

Collecting: As boardgame fans, many of our participants spend several thousand dollars a year on their hobby, acquiring, selling and trading games. Boardgamers know not only how many games they own but also how their collection compares to other gamers’: “It’s about 350 games. ... talk to the average person, they think that’s a lot of games! Talk to my friends, they’ll say that’s a drop in a bucket!” (P6). Gamers maintain wishlists of wanted games; similarly, both Ravelry and Goodreads offer a ‘wanted’ function, in the form of the ‘queue’ and ‘want to read’ options. The collection is as much about the items that *will be* collected or created as it is about those which are currently owned; Woods (2012, pp. 134-135) has suggested that this collecting and curation is itself a form of play.

Cataloguing: BoardGameGeek offers a number of ways to catalogue a game, which include a detailed description including the date purchased and vendor as well as the price paid and specific edition owned. Similarly, Ravelry users are able to relate their “stash” of yarns to possible projects, and Goodreads users can add books to “shelves”.

All three sites offer some form of tagging, as well as the facility to browse others' catalogues, and distinguish between owned items and those which are used (read/played/crafted).

Discussing: Through discussing games, rating and 'commenting', forum postings, formal reviews, and user-curated 'Geeklists' which link a number of games to a specific theme, BoardGameGeek users collaborate to co-create meaningful crowd-sourced descriptions of games, and present themselves as knowledgeable members of the community (Stenros, Paavilainen, & Mäyrä, 2009; Woods, 2012). Elsewhere, Rogerson et al. (2015) have described how these online practices can fundamentally change the offline experience even for those who do not engage online. Participants on all three sites value the opportunity to engage with “like-minded souls” (P1) but also value the rich data that is generated by the active members, most prominently including ratings.

Tracking: Lastly, participants seek to demonstrate and quantify their participation in their hobby: “Since 2006 I've been using BoardGameGeek to write down all the games that I've played” (P8). Another participant logged her games played using an app, “keeping stats on which games I've played, how many games I've played, and who I've been playing with.” (P2). These statistics are uploaded to BoardGameGeek, where they can be browsed and interrogated, by the creator and by others. Similarly, Goodreads participants participate in reading “challenges”, and Ravelry users track the progress of their projects.

Conclusion

Based on interviews with hobbyist boardgamers, we identified a digital hinterland that surrounds and supports the explicitly material practice of boardgaming. Being a BoardGameGeek is not simply about playing games; in accruing gaming capital, users engage with a specific set of digital practices that support and enable material acts of play, and that invite users to co-create emic information about games and the gaming hobby, even when the user themselves sees their engagement with boardgames as a rejection of technology. Through reviewing the functions of Goodreads and Ravelry, sites that support the traditionally non-digital hobbies of reading and yarn craft, we have extended our findings to show that these practices are not specific to boardgaming but that similar practices are found across a variety of traditionally non-digital hobbies.

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Appendix I: Me and my Shelfie: Hobbyists' Domestication of Boardgames

This Appendix comprises a prior publication and is presented as-is, in its published form. It was originally selected for presentation at DiGRA 2017, the annual conference of the Digital Games Research Association, in Melbourne, Australia. The paper was panel reviewed by the stream chairs.

Me and My Shelfie: Hobbyists' domestication of boardgames

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Keywords

Boardgames, domestication, gaming

INTRODUCTION

In this paper, we investigate the ways in which serious leisure hobbyist boardgamers have appropriated, objectified, incorporated and converted boardgames to “serve as “powerful reflections of [their] values and identity”” (De Schutter, Brown, & Vanden Abeele, 2015)¹. Specifically, we describe the value that hobbyist boardgamers place on storage and shelving of games, and identify the ways in which they ascribe meaning to their game shelves not only as furniture but also as metaphors for the game collection itself, as well as for play. Research has devoted considerable attention to the ways that we adopt and use technology in a domestic environment (Silverstone, 1991; Silverstone, Hirsch, & Morley, 1994), and we show that boardgamers follow a similar trajectory, with the sharing of photos playing a significant role in their appropriation of the games.

The “Shelfie”² is a specific type of online posting, where the boardgamer shares a photo of their game shelf or shelves³. These posts highlight the importance not only of the curated collection itself but also of the spectacle created when it is displayed. They present the poster as the owner of a collection to be proud of and of a commensurate place to store and play their games.

METHOD

This work builds on interviews with eleven hobbyist boardgamers. These are serious leisure boardgamers with collections which range from 40 to “about 1,000” games; the median collection size was 350⁴. Additionally, we conducted a review of the Boardgamegeek Facebook group⁵ in February-March 2017 and a separate review of “GeekLists”⁶ posted to Boardgamegeek.com before January 2016, specifically looking for references to game shelves in the lists’ titles. These are both significant venues for discussion of boardgames and boardgaming; Boardgamegeek is rated in the top 1500 websites in the US⁷, and its Facebook group has nearly 40,000 members.

Extended Abstract Presented at DIGRA 2017

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DISCUSSION AND FINDINGS

Across the discussions of shelves and shelfies, we have identified three distinct levels of meaning that are applied to the shelf. The first is that the shelf is an item of furniture; it has aesthetic appeal and functional requirements. It looks attractive, and it holds games. It may be built-in or free-standing, wooden or metal, temporary or permanent; it is a tangible thing that exists in the home and that others interact with. A 2015 video demonstrating three different kinds of IKEA shelf and discussing their suitability for game storage (Nicholson, 2015) has been watched nearly 22,000 times as at the time of writing; there is significant interest in the shelf-as-furniture.

Secondly, the shelf is a metaphor for the user's game collection, either in its entirety or for a specific part of it. "What do you think of my game shelf" doesn't simply ask about the aesthetic appeal of the furniture, but invites appraisal of the shelf owner's choice of games. In the GeekList "*Organising the Family Game Shelf*," the titular "shelf" stands for the items that the shelf itself contains and the place they hold within the poster's collection. In each of these examples, "shelf" stands not only for the shelf as furniture but also for the organization of the shelf, and/or for this particular curated subset of the user's collection.

Lastly, the game shelf is used as a metaphor for unplayed or unwanted games. This is seen in postings and GeekLists with titles like "*Forever on the shelf ... Games I just can't seem to get played.*" This is a very literal use of an older idiom meaning inactive or unemployed (Ammer, 2003) and highlights the importance that serious hobbyists place on *playing* boardgames as opposed to simply collecting them. A game's goal is to make it to the table, not to languish, unloved and unplayed, gathering dust on the shelf.

This research tells us about the very broad ways in which boardgamers engage with their hobby. Just as collecting may itself be a form of play (Woods, 2012, pp. 134-135), shelving and arranging games and presenting them to others is, for some, another aspect of their boardgaming hobby; another form of play. Like Pinterest posts, these posts invite viewers to "daydream out loud" (Jones, 2016) and plan their own game shelves and game room.

CONCLUSIONS

There are three key outputs from this research. First, we have observed and described the behaviour of "shelfie" sharing which represents a specific engagement with other boardgaming hobbyists. Second, we have described three ways in which the "shelf" is represented: as an item of furniture, as a metaphor for a game collection, and as a signifier for the unloved games within a collection. Finally, we argue that this sharing and representation demonstrates a domestication of the boardgames, a cultural redefinition of the games as "owned", paralleling the stages in the domestication of ICTs.

BIO

Melissa Rogerson is a PhD candidate in the Microsoft Research Centre for Social NUI at The University of Melbourne. Her research examines the experience of playing boardgames in both physical and digital forms, as well as the characteristics and motivations of hobbyist boardgame players, designers, and developers. It applies techniques from human-computer interaction to the study of games and play. Melissa is

co-chair of Boardgames Australia, and is a member of the jury for the International Gamers' Awards. She has been known to share a Shelfie or three herself.

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ENDNOTES

¹ Although this article was written about digital games, we believe its assertions hold true for other types of game.

² "Shelfie" is understood to have originated with author Rick Riordan, <https://twitter.com/camphalfblood/status/405004712711172096>, in reference to books.

³ For a collection of Shelfies, see "Shelf PrOn Central" (Luyten).

⁴ For scale, we estimate that this collection would fill around 4-5 standard bookshelves (eg IKEA Billy, 80cm x 202cm)

⁵ <https://www.facebook.com/groups/132851767828/> - at the time of writing, the group has over 38,000 members.

⁶ Initially curated lists of games, the Geeklist format is also used for other types of listing including collections of shelfies.

⁷ <http://www.alexas.com/siteinfo/boardgamegeek.com>

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Appendix J: Operational rules connect game components and players – Three Case studies

This section provides three case studies which extend and supplement the discussion in section 9.4.1, The role of rules. Each highlights a different element of these interactions. First, I consider *Carcassonne* (Wrede, 2000). The game's four distinct rulesets demonstrate the interaction between its rules and its materiality. Next, I discuss *The Mind* (Warsch, 2018), a game which makes players' body language – usually an implicit part of a game – something that must be negotiated overtly. Finally, I discuss *Twister* (Guyer, 1965) and the importance of the game's sociocultural reception.

Case Study: Interaction between rules and material components: *Carcassonne*

Carcassonne has had four significant rulesets⁵, which affect the scoring of small cities created from just two tiles and the scoring and placement orientation of “farmers.” A further change, which does not seem to be tied to a specific ruleset, Table 5 summarises the history of these rule changes.

⁵ For a lengthy (more than 300-page) summary of the rules of not only the base game but also of many expansions, which also discusses the rules changes up to and including the third edition, see Ober (2015). Although the second and third edition rules were issued by the original German publisher Hans im Glück as early as 2002, it was only in 2009 that the English rules published by Rio Grande Games were updated (see <https://www.boardgamegeek.com/article/1212102#1212102>). Other changes to the *Carcassonne* rules relate to the expansions rather than to the base game.

Table 2 Carcassonne scoring, editions 1-4. “Cities” in this table refers to “Completed cities”.

	1 st edition	2 nd edition	3 rd edition	“new” edition
German rules issued	2000	2001	2002	2014?
English rules issued	2000	N/A	2008	2014
City scoring	Cities score 2 points per tile except small (2-tile) cities which score 2 points.		All cities score 2 points per tile; small (2-tile) cities are now worth 4 points.	
Farmers	For each city, count adjacent farmers; the player with the most farmers scores 4 points.	For each farm (field), count adjacent cities. The player with the most farmers scores 3 points for each city touching that farm.		As 3 rd edition however farmer rules are optional.
Restrictions on scoring cities with farmers	Each city is scored once.	Each city can be scored at most once.	No restriction; a city may be scored multiple times.	
Farmer piece orientation	Standing up	Standing up (tip: lying down)	Standing up (tip: lying down); from 2005, Lying down	Lying down

These iterations of the rules of *Carcassonne* highlight the complex relationship between the rules and the materiality of a boardgame. Despite the changes to the operational rules (Salen & Zimmerman, 2004, p. 130), the physical elements of the game – the mix of tiles, and the wooden “meeples” or “followers” – have remained the same since the first edition, although there have been minor changes to the scoring board and occasional optional expansions included with the base game (Ober, 2015). The material elements of the base game have been fixed since its publication in 2000, despite three subsequent rules changes and a lengthy period between 2001 and 2008 where the game’s rules were different in two major markets. It is, in fact, still possible to play any of these game rule variants with any of the editions of the game, and there is little or no indication beyond the ruleset of which edition a box contains. Players may only discover the existence of these different rulesets at the conclusion of a game with a new opponent, when each player attempts to score the game differently⁶ (see Figure 9.3). Moreover, the actions and treatment of the pieces have not changed – players still draw and place tiles, and optionally place followers on them. In the play of the game, these elements – the tiles and wooden pieces, but also the way in which they are

⁶ See <https://www.boardgamegeek.com/thread/559150/did-i-dream-rule-or-does-it-exist> and <https://www.boardgamegeek.com/thread/1209950/different-scoring-rules-2-tiles-cities>

used to enact the game – have endured (Leonardi, 2013, p. 42) despite the rules changes – yet applying a different ruleset can change the outcome of the game.

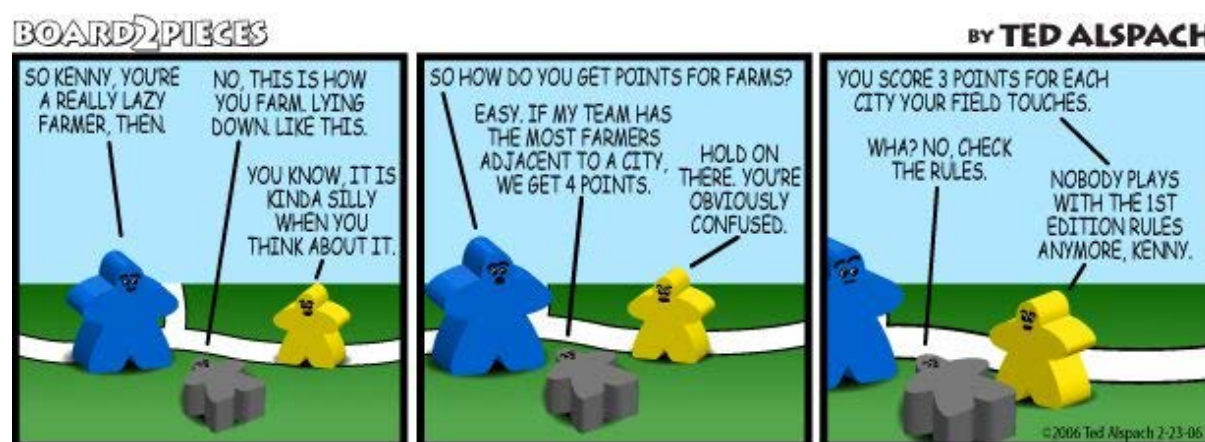


Figure 9.1 This Board2Pieces cartoon highlights the difference in "Farmer" scoring between different editions of Carcassonne.

(Image © Ted Alspach, used with permission).

Case Study: Interaction between rules and play: *The Mind*

The example of *The Mind* highlights the complexity of interaction between the rules and the sociomaterial setting and practices of play. This cooperative game requires that “the players must not disclose anything about their own cards – no sharing of information, no secret signals.” (Warsch, 2018). The author has acknowledged that this constraint was intentionally vague (Yu, 2018). Some players interpret it to only forbid pre-arranged systems of communication, meaning that it is perfectly acceptable to frown or scowl, pull faces, even place one’s cards face-down on the table. These players point out that games should be played for maximum fun and that it would be ridiculous to ban these types of interactions which are clearly in the spirit of the rules and which provide them with great enjoyment. Others interpret this rule as explicitly forbidding such body language, requiring players to keep a neutral posture and expression to avoid disclosing unauthorised information. These players point to the tip in the rules which adds that “The Mind is a game of synchronisation which relies on your sense of time ... The secret of the game is developing that collective feeling for ‘now is the moment’” (Warsch, 2018), understanding this as directing the players to attend to the passing of time rather than to their fellow players’ body language. The debate is particularly interesting because it brings the implicit rules of a game – the behaviours, the body language, the attitudes towards play – into the sphere of operational rules.

It is through the play of the game that these rules issues are identified and resolved to the mutual satisfaction and consensus of the players – this is the cooperative element of rules interpretation that was discussed in Chapter 8. The game rules constrain player behaviour, but these constraints are subject to the players' interpretation not only of the rules themselves but also of the intention behind the rules. Play situates players in an interpretative dialogue with the rules.

Case Study: Excitement between the dots: *Twister*

The importance of a game's sociocultural context is demonstrated by the mass-market game *Twister* (Guyer, 1965). Following its initial release, major chain stores refused to stock it due to a perception that the game, which involves body contact between the players, was not family-friendly. Production was halted and advertising cancelled. On May 3, 1966, however, *The Tonight Show* host Johnny Carson played the game live on air with screen siren Eva Gabor. The body contact in the game, which had previously been considered socially unacceptable, was reframed as racy, exciting, and more than a little sexy. This sparked a run on the few remaining copies of the game in retail stores. *Twister* was saved, and by the end of 1966, it had sold several million copies (Donovan, 2017, pp. 167-173; Kaye, 1973, pp. 99-100). The salacious rumours that had dogged the game and caused its near demise now added to its slightly edgy attraction; Kaye (1973, p. 99) notes that there were abundant rumours of "Twister swapping soirees ... and nude poolside gropes".

The rules to *Twister* describe simple actions (Leino, 2012, p. 58) – spin the spinner, place a hand or foot on a corresponding coloured dot – they cannot dictate the sexual overtones (Frasca, 2007) or the simple hilarity (or boredom) that emerges from the intersection between the game, the rules, and the played experience of the game.