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Dimensions of Space in Digital Games

This chapter compares theories around space in game studies and geography and argues for assemblage theory as comprehensive approach to spaces in digital games. Through interdisciplinarily extending previous attempts, five dimensions are identified: geographies, technologies, bodies, architectures, and discourses. These highlight the multiplicities of digital games and provide a theoretical framework as well as analytical guideline for future research.

Keywords: game spaces; assemblage theory; spatiality; digital games

What Space?

There is no need to emphasize that space is part and parcel of (digital) games. Scholars from game studies, geography, media studies, and other fields can agree on the importance of space as analytical category. While these interdisciplinary fields reach ed a welcomed common ground for discussions, their approaches to the topic differ and concepts require clarification or recontextualization. For instance, the so-called 'magic circle', introduced by Huizinga (1980, 10) as space, where "all play moves and has its being within a play ground marked off beforehand either materially or ideally, deliberately or as a matter of course," is still popular in game studies albeit disputed. Among others, Consalvo (2009) critiques the concept of having this separate entity cut off from its surroundings, Juul (2008) points to the importance of negotiating it, and Arsenault and Perron (2009) develop it into a magic *cycle*.

Geographers would be at unease to think of any space without any connections to other spaces as the magic circle postulates. Another direction is more obviously adaptable to geography: The application of Lefebvre's (1991) social production of space to digital games, e.g., by Aarseth (2001), Günzel (2008), Fraser (2011), Wood (2012), or Janik (2020). Here, players do not enter a realm detached from reality but participate in constructing it through playing. But besides criticism from a play-centred perspective for using "spatial metaphors" (Leino 2013, 1), Crawford (2015, 6) argues that Lefebvre's Marxist theoretical underpinnings have not been incorporated in game studies: "That is to say, by focusing on spaces, we miss the bigger picture;

we miss (following Lefebvre' argument) how these are produced by a repressive economy, bourgeois ideology and masculinity." Despite works on this issue, most notably by Dyer-Witheford and De Peuter (2009), this observation holds up even for expansive works, e.g., Nitsche (2008). The interaction between player and game (space) remains pivotal, while the production background of the game is not included. That is not to say that game studies ignore these issues. There is a multitude of works on the material production of digital games.[1] Additionally, issues of identity, representation, or culture are covered, see e.g., Malkowski and Russworm (2017) or Mukherjee (2017). But what is missing at times is a stronger linkage of these various spaces games are related to. How are they (inter)connected? Turning to geography, this question can be only partially addressed.

The increasing attention for digital realms fostered scholarship on games, where some proclaim a 'digital turn', see Ash, Kitchin, and Leszczynski (2018). Besides broader reflections around digital or virtual geographies and various case studies on specific games from different subdisciplines, few authors theorized particularly about game space. Ash (2009, 2014), Ash and Gallacher (2011), Shaw and Warf (2009), as well as Shaw (2011) offer their perspectives on the topic. The accounts of Ash and Gallacher (2011) as well as Ash (2014) are useful overviews of the study of digital games in geography at the time, but also provide some clarification of views on space. They identify an assemblage of screen and body, where spatiality is produced, but still exhibit a focus on the interaction of player and in-game space, similar to works from game studies. Crawford's abovementioned criticism could be raised again: What about other spatial factors?

On the other side, Shaw and Warf (2009) turn to game space as 'worlds of affect', stronger emphasizing the importance of representations; a line of thought which is apparent especially in the field of critical geopolitics, see Power (2007), Shaw (2010), Salter (2011), and Bos (2018). Further, Shaw (2011, 168) extends the argument and claims digital games as "acentered assemblages built from a variety of component parts, both material and representational." Assemblage theory is again utilized, this time to cover the multiplicities of spaces beyond play. A useful starting point, Shaw's elaboration leaves room for further clarification and extension, and I will engage with it in more detail.

Hence, this chapter aims at developing a comprehensive theoretical framework and outlining key lines of inquiry for analyzing digital games. Naturally, the great variety and ongoing development of digital games make it hard if not impossible to provide any holistic account. Utilizing assemblage theory, these issues can be addressed to some degree, as the dynamic understanding of assemblages allows for greater flexibility. Thus, I will briefly introduce assemblage

[1] See for a global overview of digital game production Kerr (2006, 2017)

theory before mapping its connection to digital games in more detail and then offering concluding remarks.

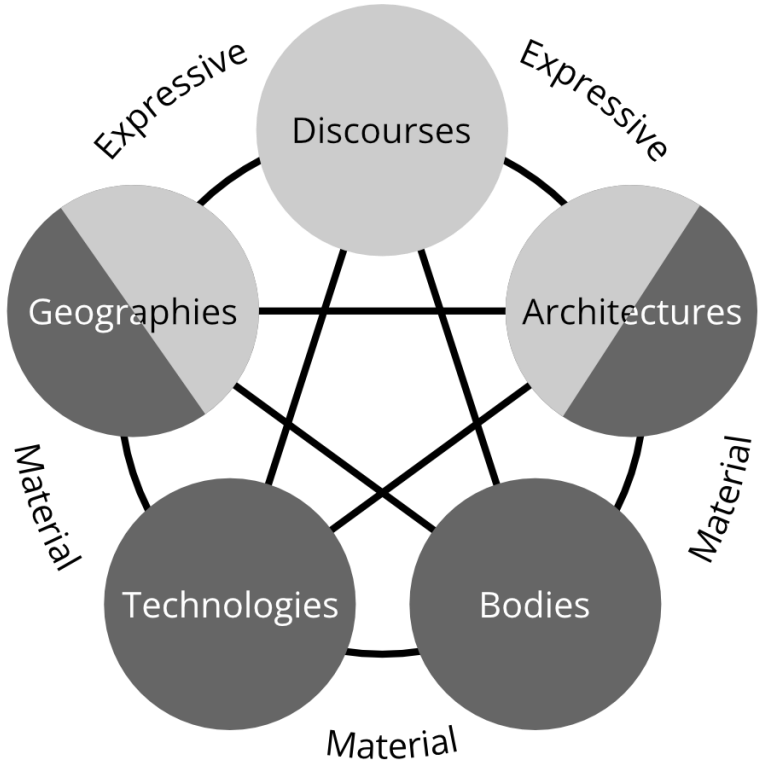
Spatial Assemblages

Deleuze's and Guattari's work around a 'geophilosophy,' refined by DeLanda (2006) provides a useful theoretical base to think about "multiplicity and space as co-constitutive" (Massey 2005, 9).[2] Rather than focusing on discourses and discursive practices alone, as poststructuralist thought encourages, the role of materiality in spaces is reconsidered (Bonta and Protevi 2006, 40). This is without losing discourse and other poststructuralist assumptions. Instead, assemblage theory follows up on the rejection of essentialism as well as the fluid nature of ascriptions and identity. Constituted by diverse component parts, assemblages are highly heterogenous and in flux, defined by "relations of exteriority" (DeLanda 2006, 18). Looking at exteriorities rather than interiorities enables a dynamic understanding of these parts. In their relation to and interaction with other components, they are not exclusive for one particular assemblage, but can be incorporated in other assemblages as well. Additionally, whole assemblages are only temporary.

This becomes apparent in the three key dimensions of assemblages identified by DeLanda. First, component parts are characterized as material or expressive. Second, assemblages are subject to territorializing and deterritorializing or, in other words, continuously formed and dissolved. Third, coding and decoding are processes of "ordering matter" (Bonta and Protevi 2006, 69), consolidating or flexibilizing identity. While these remarks may seem rather abstract, the example of digital games will illustrate a possible application. Reworking Shaw's categorization, I propose geographies, technologies, bodies, architectures, and discourses as component parts of the assemblage of digital games. Hence, Figure 1 illustrates the constitution of a game assemblage, where technologies and bodies are material, discourses are expressive, but geographies and architectures are a combination of both. The processes of territorializing and deterritorializing as well as coding and decoding will be elaborated upon after clarifying the scope of each component part.

[2] A more detailed discussion is done by Anderson et al. (2012) and Dittmer (2014); criticism is raised by Kinkaid (2020)

Figure 1: Component parts of a digital game assemblage



Materiality and Expressivity

Shaw identifies three material and three expressive component parts for the assemblage of digital games. Materials include geographies (sites of production), technologies (software development), and bodies (affective dimension) (Shaw 2011, 165). While this covers indeed the materialities of digital games, the range provided by Shaw for geographies and technologies should be extended. In geographies, the sites of production are an important consideration, since the global production network is dominated by few companies from the USA, Japan, and China, with "highly regionalized structures" (Kerr 2017, 59). Additionally, the sites of consumption are equally interesting. In other words, who plays, where are they, and does production account for them? Many major digital games are mainly produced for a Western audience and only adapted to local markets. Here, the process of localization or "culturalization" (Edwards 2011, 20), i.e., increasing the appeal for a local audience by translations and more, must be kept in mind as shaping factor for the materiality of games.

Beyond these sites, geographies also entail the size of studios and the individual backgrounds of the developers. Evidently, there are differences between indie games created by single persons compared to Triple-A titles created by major publishers. Whereas smaller productions may have a reduced scope, they may not necessarily adhere to common game conventions and complicate analysis. Bigger productions may be easier to grasp since they are intended for a larger audience, but their range may require focusing on specific aspects. The diversity of creators certainly influences the outlook of games, as well as their belonging to social milieus or

communities. Take for example Daniel Vávra, lead developer at Warhorse Studios, responsible for Kingdom Come: Deliverance, who caused controversies due to spreading alt-right speaking points (Sigl 2018). Vávra's engagement must be related to the game produced and how it possibly influenced it. This materiality is rather expressive and heavily interconnected with discourses; thus, I propose viewing the component part 'geographies' not as entirely material, but with expressive elements when it comes to developers and players.

Contrary, technologies remain material, but encompass more than software, i.e., the game engine as framework used in digital game development. The progress of game engines allows not only more "realistic" graphics, but also more intricate game worlds, which in turn can impact the expressive components of the assemblage. Discourses may be observable in more diverse ways; architectures may allow for more interactive possibilities. Further, technologies entail the platforms which games are developed for. Platforms are understood twofold here: The platform in terms of hardware system, e.g., consoles, PCs, or mobile phones, and in terms of digital distribution services, e.g., Google Play Store or Steam. The hardware system can determine the input devices and thus encountering spatiality in the game. A controller allows for different movement than keyboard and mouse, while these enable more precise interaction. Virtual reality equipment adds another layer, which can produce new experiences, and the touchscreen of a smartphone offers entirely different possibilities of interaction. Since many games are adapted to various platforms for maximum outreach, the initial release platform should be considered. Still, exclusive titles, e.g., for consoles or specific stores, certainly shape geographies of consumption and the issue of game piracy. Who can play it and who cannot? Further looking at consumers, the availability of hardware for players influences the spatial experience in and outside of the game. Do I have my own hardware or do I go to internet cafés? Do I own the newest computer or am I playing on my ten-year-old laptop? Here, links can be observed not only to geographies but also architectures.

Before following up on the latter, the last material component part will be briefly outlined: bodies. They bring in the issues of emotion and affect. Following Shaw and Warf (2009, 1339), bodies include "the potential to affect and be affected emotionally as well as cognitively, unconsciously as well as consciously." This affect is not restricted to the player in front of the screen, but to the virtual character as well. The connection between both is essential. If the in-game character is affected by something in the game, it can translate to affect the player. Further, social interactions with other players impact emotions, linking bodies to architectures.

Architectures are divided by Shaw (2011, 166–167) into a ludological (game rules and mechanics) and a social part (in-game socializing). This scope can be expanded by the above-mentioned connections to technologies and bodies. To technologies, the available hardware shapes the in-game spatial experience in terms of better to worse graphics, smoother to choppier performance, or simply the general capability of running a game. To bodies, visiting internet cafés

or playing at a friend's place, illustrates that there is not only socializing in-game, but in front of the screen as well, which fosters different discourses and affects than in-game chats. Both in-game and off-screen socializing can affect bodies very differently, based on the player's gender, nationality, identity, etc.

The ludological architecture can be further broadened. Developers determine game rules and mechanics according to their ideas. Where rules determine what is allowed and what is not, mechanics show how things happen or how they do not. Or, in Sicart's (2008) words: "game mechanics are methods invoked by agents, designed for interaction with the game state." Both rules and mechanics are interconnected and shape the dimension of play. Neither may be entirely static in the game itself, e.g., when players are granted new mechanics, overriding previous game rules. Now you can jump higher and reach points inaccessible before. Additionally, players often break or play with the rules, sometimes even with given mechanics. Cheating (altering the rules and/or mechanics via codes or commands) and speedrunning (completing a game as quick as possible) are two prominent and very different examples for such processes. The former impacts bodies and discourses, where play experience is skewed, and changes meanings from the initial design by the developers. The latter influences discourses when the perceptions of games are altered, e.g., discovering and exploiting bugs.[3]

Besides social and ludological architectures, I suggest subsuming spatiality in architectures, instead of viewing it as standalone expressive component part as Shaw does. I argue for this out of three reasons. First, spatiality builds upon the same game code or programming as do rules and mechanics, blending it into architectures. Second, it improves the clarity of the concept from a geographical perspective, since spatiality may be misunderstood in its relation to other component parts, e.g., geographies or discourses. Third, there is no loss of analytical scope; spatiality remains a key element in the assemblage and its interrelations are trackable. This adds game code to architectures as well, as fundament and materiality of the component part. It is the space where everything takes place; where game rules and mechanics are defined, where dialogues and events are scripted, where all other component parts are influenced. There are reflections on studying the code itself and how it can serve when analyzing games (see Willumsen 2017). However, this does not seem very feasible for bigger productions and requires in-depth knowledge of programming languages. Some developers may not even make their code (easily) accessible.

Shaw's (2011, 166) account of perspective is an important consideration for spatiality, with the common categorization of first-person (immanent), third-person (mediated), and top-

[3] See for a detailed encounter about playing with rules and mechanics the discussion about metagaming, e.g., by Boluk and LeMieux (2017)

down view (transcendent). Elverdam and Aarseth (2007, 7–8) suggest a different approach, splitting only in omni-present (complete overview) versus vagrant (exploration through movement) perspectives. Indeed, this conceptualization allows reconsidering games which utilize a mixture of perspectives. The authors also add positioning, where the player is located, and environmental dynamics, if the player is allowed to alter the environment, to their definition. Beyond providing a typology, these aspects highlight how diverse bodies may be affected or discourses articulated, depending on the designers choices around perspectives, positioning, or dynamic environment.

Besides the developers' influence, the act of playing shapes spatiality as well. Here, the production of space comes to the fore. "In the moment of play, different bodies, both human and non-human, meet with, and influence, each other. Video gamespace is, therefore, as Lefebvre wrote about physical space, first of all a process that is continuously being performed." (Janik 2020). Or, for Ash (2014, 124): "[...] I argue that the space of the image and the capacity of the user to control this image generate a sense of locatedness in time and space through the activities and possibilities for movement that the user negotiates as they play." These performances can differ from player to player even if they are located in the same game space, e.g., concentrating on trade versus focusing on combat. Consequently, this is interconnected with game rules and mechanics, because they determine whether and how spatiality is performed. The same applies to any social interactions. All this happens while playing the game. Thus, play brings together the social, ludological, and spatial architectures.

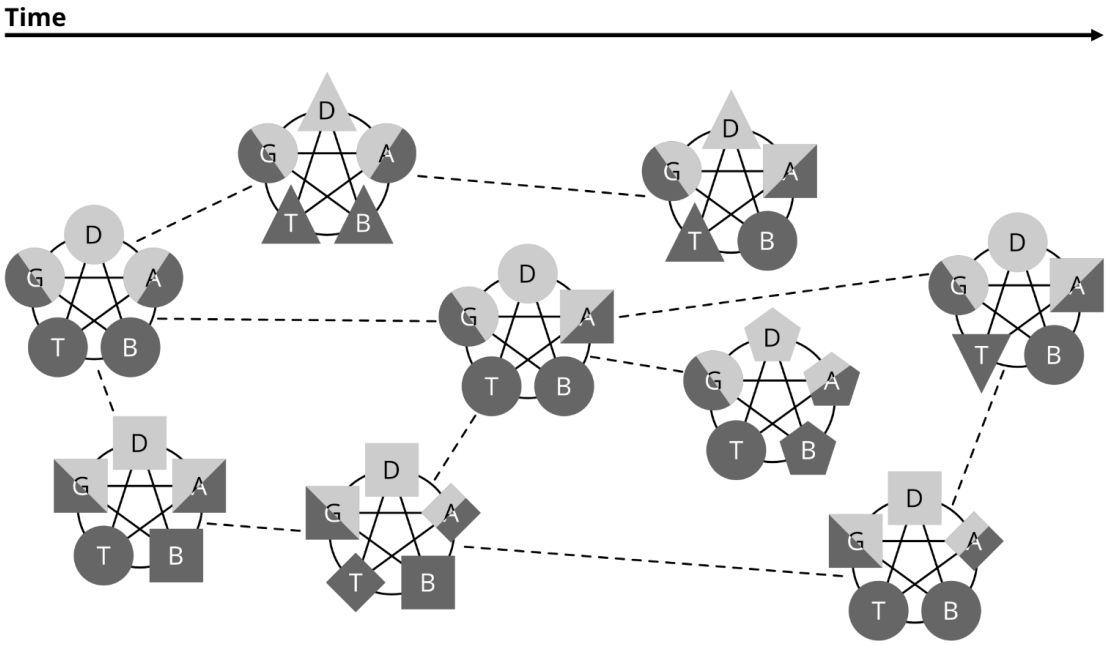
The next expressive component part are discourses. Shaw (2009, 166) points out the "discursive textual landscape" of digital games, where imaginations are embedded and (re)produced. As mentioned in the beginning, deconstructivist works in game studies as well as in geography challenge prominent narratives and representations in digital games. These in-game discourses are interconnected with other discourses, e.g., national, online, or in other media. On purpose or not, developers imprint discourses they are exposed to into their games and in turn add another discursive medium to the discussion. Because of the possible emergence of discursive elements on all sides, discourses are interrelated to every component part. Geographies, technologies, bodies, and architectures shape together how the game is perceived. Contrary, discourses can play an important role in the formation of a new assemblage, for example, when a preceding game was criticised for its mechanics. This shows one portion of the processes of territorializing and deterritorializing as constituting game assemblages, which will be turned to in the following.

De/territorializing and De/coding

Digital games almost never stay the same. Patches, updates, DLCs, addons, reworked editions; developers do not stop developing a game just with its release to the public. It is an ongoing process and one which fits neatly with assemblage theory through the processes of territorializing and deterritorializing. Throughout the development of a game, the component parts are constantly

configurating. Once the game is released, it may constitute as temporary stable, but the nature of its component parts can shift tremendously. See for a schematical representation Figure 2, which does not account for changes in the component parts themselves, but portrays the dynamics based on relations of exteriority over time. With public access, players join as new bodies and contest technologies, discourses, and architectures. The abovementioned cheating and speedrunning are two examples for how players can shake up the relations in the assemblage. But even without drastically going against the original code of the game, it simply may be different expectations that cause a change in discourses and affect. The in-game experience communicated by the developers upfront may be in stark contrast to what players think about the game. This uncertainty of appeal is one reason for the well-known issue of seriality, also highlighted by Shaw (2011, 167).

Figure 2: Territorializing and deterritorializing of digital game assemblages



It is not a fully-fledged "tyranny" (Dittmer 2007, 252), the insistence on continuity is not as strong and progress or changes are even demanded at times, but many publishers hold dearly to their annual or bi-annual best-selling titles, in a constant continuation to the previous years, e.g., the Call of Duty franchise. Serial releases illustrate very well, how component parts of previous assemblages participate in territorializing a new one. Geographies remain with the same studio, and without any big jump in hardware development, technologies will not change significantly. The architectures will be tweaked, based on previous discourses of the game, but without loosing the perceived essence of the serial. Only discourses and bodies retain greater flexibility, especially once the newest instalment faces the reactions by the audience. In contrast, the industry is still full of innovation. Metagames or genre-defining titles deterritorialize familiar assemblages through new interpretations of their component parts. The success of Demon's Souls for example

led to an avalanche of so-called ‘soulslike’ games, imitating the defining characteristics of FromSoftware’s acclaimed production.

Staying with the example of soulslike games, coding and decoding in a Deleuzo-Guattarian understanding become clear. The code or identity of any soulslike game encompasses a (dark) fantasy setting, role-playing features, and most importantly high difficulty. Hidetaka Miyazaki, responsible for Demon’s Souls, laid out the coding which formed the identity of this particular game assemblage and influenced the genre. All these codes can be found in the game code, where game rules and environments are described. However, I argue for looking at the whole assemblage. Miyazaki as director is turned into another identification factor for the coding. For instance, many fans of FromSoftware’s publications disregard Dark Souls 2, not only because of perceived changes in game design, but because Miyazaki was not in charge of the game. For them, the missing developer in the geographies decoded the whole assemblage the game was representing, despite ticking formally all architectural boxes of fantasy, role-play, and difficulty.

Another process of decoding and coding, but also of deterritorializing and territorializing is modding. Creating modifications, mods for short, of games is a popular pastime of many players. Depending on their own skillset and the accessibility of the game code, mods can range from cosmetic changes to reworked game mechanics to whole conversions of the entire game. Mod creators can deterritorialize game assemblages through their content. For example, where nameless or fantasy factions were fighting against each other, real-life conflicts can be brought into games via renaming or adding visual signifiers. This changes discourses and the game may affect players differently then. At times, mods may even become so popular, they territorialize as own games. If they are hired by studios, players join the geographies of production.

Conclusion

This chapter laid out how assemblage theory can be applied to digital games and rejects a clear distinction between games and an outside world. Instead, the interconnectedness of several dimensions became clear in geographies, technologies, bodies, discourses, and architectures. Surely, more can be said about what each component part incorporates, more examples can be found. Especially through applying this approach new aspects will come to the fore. Further, the formations and dissolutions of assemblages fit neatly with the dynamic digital game development as do Deleuzo-Guattarian codes with key characteristics of certain genres or games. Thus, assemblage theory can serve as base to encounter the multiplicities of spaces in which digital games are embedded.

References

Aarseth, E. (2001). Allegories of Space. The Question of Spatiality in Computer Games. In M. Eskelinen & R. Koskimaa (Eds.), *Cybertext Yearbook 2000* (pp. 152–171). Jyväskylä: University of Jyväskylä.

Anderson, B., Kearnes, M., McFarlane, C., & Swanton, D. (2012). On assemblages and geography. *Dialogues in Human Geography*, *2*(2), 171–189. https://doi.org/10.1177/2043820612449261

Arsenault, D., & Perron, B. (2009). In the Frame of the Magic Cycle: The Circle(s) of Gameplay. In B. Perron & M. J. P. Wolf (Eds.), *The video game theory reader 2* (pp. 109–132). New York: Routledge.

Ash, J. (2009). Emerging Spatialities of the Screen: Video Games and the Reconfiguration of Spatial Awareness. *Environment and Planning A: Economy and Space*, *41*(9), 2105–2124. https://doi.org/10.1068/a41250

Ash, J. (2014). Video Games. In P. C. Adams, J. Craine, & J. Dittmer (Eds.), *The Ashgate research companion to media geography*. Farnham: Ashgate.

Ash, J., & Gallacher, L. A. (2011). Cultural Geography and Videogames: Cultural geography and videogames. *Geography Compass*, *5*(6), 351–368. https://doi.org/10.1111/j.1749-8198.2011.00427.x

Ash, J., Kitchin, R., & Leszczynski, A. (2018). Digital turn, digital geographies? *Progress in Human Geography*, *42*(1), 25–43. https://doi.org/10.1177/0309132516664800

Boluk, S., & LeMieux, P. (2017). *Metagaming: playing, competing, spectating, cheating, trading, making, and breaking videogames*. Minneapolis: University of Minnesota Press.

Bonta, M., & Protevi, J. (2006). *Deleuze and geophilosophy: a guide and glossary* (Repr. with corr.). Edinburgh: Edinburgh Univ. Press.

Bos, D. (2018). Answering the Call of Duty: Everyday encounters with the popular geopolitics of military-themed videogames. *Political Geography*, *63*, 54–64. https://doi.org/10.1016/j.polgeo.2018.01.001

Crawford, G. (2015). Is it in the Game? Reconsidering Play Spaces, Game Definitions, Theming, and Sports Videogames. *Games and Culture*, *10*(6), 571–592. https://doi.org/10.1177/1555412014566235

DeLanda, M. (2006). *A new philosophy of society: assemblage theory and social complexity*. London: Continuum.

Dittmer, J. (2007). The Tyranny of the Serial: Popular Geopolitics, the Nation, and Comic Book Discourse. *Antipode*, *39*(2), 247–268. https://doi.org/10.1111/j.1467-8330.2007.00520.x

Dittmer, J. (2014). Geopolitical assemblages and complexity. *Progress in Human Geography*, *38*(3), 385–401. https://doi.org/10.1177/0309132513501405

Dyer-Witheford, N., & De Peuter, G. (2009). *Games of empire: global capitalism and video games*. Minneapolis: University of Minnesota Press.

Edwards, K. (2011). Culturalization: the geopolitical and cultural dimension of game content. *TRANS. Revista de Traductología*, (15), 19–28. https://doi.org/10.24310/TRANS.2011.v0i15.3192

Elverdam, C., & Aarseth, E. (2007). Game Classification and Game Design: Construction Through Critical Analysis. *Games and Culture*, *2*(1), 3–22. https://doi.org/10.1177/1555412006286892

Fraser, B. (2011). Why the spatial epistemology of the video game matters: Metis, video game space and interdisciplinary theory. *Journal of Gaming & Virtual Worlds*, *3*(2), 93–106. https://doi.org/10.1386/jgvw.3.2.93_1

Günzel, S. (2008). The space-image: interactivity and spatiality of computer games. In S. Günzel, M. Liebe, & D. Mersch (Eds.), *Conference Proceedings of the Philosophy of Computer Games 2008* (pp. 170–189). Potsdam: University of Potsdam.

Huizinga, J. (1980). *Homo ludens: a study of the play-element in culture* (Reprint.). London: Routledge & Kegan Paul.

Janik, J. (2020). Negotiating Textures of Digital Play: Gameplay and the Production of Space. *Game Studies*, *20*(4). http://gamestudies.org/2004/articles/janik. Accessed 9 May 2022

Kerr, A. (2006). *The business and culture of digital games: gamework/gameplay*. London: SAGE.
Kerr, A. (2017). *Global Games: Production, Circulation and Policy in the Networked Era*. New York: Routledge. https://doi.org/10.4324/9780203704028
Kinkaid, E. (2020). Can assemblage think difference? A feminist critique of assemblage geographies. *Progress in Human Geography*, *44*(3), 457–472. https://doi.org/10.1177/0309132519836162
Lefebvre, H. (1991). *The production of space*. Oxford: Blackwell.
Leino, O. T. (2013). From Game Spaces to Playable Worlds (p. 12). Presented at the The Philosophy of Computer Games Conference, Bergen.
Malkowski, J., & Russworm, T. M. (Eds.). (2017). *Gaming representation: race, gender, and sexuality in video games*. Bloomington: Indiana University Press.
Massey, D. B. (2005). *For space*. London: SAGE.
Mukherjee, S. (2017). *Videogames and Postcolonialism*. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-54822-7
Nitsche, M. (2008). *Video game spaces: image, play, and structure in 3D game worlds*. Cambridge: MIT Press.
Power, M. (2007). Digitized Virtuosity: Video War Games and Post-9/11 Cyber-Deterrence. *Security Dialogue*, *38*(2), 271–288. https://doi.org/10.1177/0967010607078552
Salter, M. B. (2011). The Geographical Imaginations of Video Games: *Diplomacy*, *Civilization*, *America's Army* and *Grand Theft Auto IV*. *Geopolitics*, *16*(2), 359–388. https://doi.org/10.1080/14650045.2010.538875
Shaw, I. G. R. (2010). Playing war. *Social & Cultural Geography*, *11*(8), 789–803. https://doi.org/10.1080/14649365.2010.521855
Shaw, I. G. R. (2011). Assembling Video Game Worlds. In S. D. Brunn (Ed.), *Engineering Earth* (pp. 155–171). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-90-481-9920-4_11
Shaw, I. G. R., & Warf, B. (2009). Worlds of Affect: Virtual Geographies of Video Games. *Environment and Planning A: Economy and Space*, *41*(6), 1332–1343. https://doi.org/10.1068/a41284
Sicart, M. (2008). Defining Game Mechanics. *Game Studies*, *8*(2). http://gamestudies.org/0802/articles/sicart. Accessed 15 May 2022
Sigl, R. (2018). 'Kingdom Come: Deliverance': Rechte Ideologie durch die Hintertür? *DER STANDARD*. https://www.derstandard.de/story/2000072551592/berufsspieler-kingdom-come-deliverance-rechte-ideologie-durch-die-hintertuer. Accessed 14 May 2022
Willumsen, E. C. (2017). Source Code and Formal Analysis: A Reading of Passage. *Transactions of the Digital Games Research Association*, *3*(2). https://doi.org/10.26503/todigra.v3i2.74
Wood, A. (2012). Recursive Space: Play and Creating Space. *Games and Culture*, *7*(1), 87–105. https://doi.org/10.1177/1555412012440310