The Political Economy of Wargames: The Production of History and Memory in Military Video Games

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On Armistice Day 2018 the social media account of the popular *Halo* series (Bungie 2001) tweeted out: 'To those who have served or continue to serve in our armed forces – thank you. #VeteransDay', with an image of the iconic Master Chief character saluting a military airplane fly-over.[1] An otherwise uncontroversial social media account focused solely on advertising *Halo* products, it is curious that such brand management would apparently view support of the military as apolitical and uncontroversial. Meanwhile, the last 20 years of US sales data show that the blockbuster military franchise *Call of Duty* (Infinity Ward 2003, Treyarch 2005) has dominated the sales charts over the last decade.[2] These two examples speak to the militaristic ideology that videogames are steeped in. Both as representations of war and as commemorative gestures, war games form part of how societies and collectives understand past conflicts – they are one of the ways that we formulate ideas and understandings about history and the past (Chapman 2016a).

Commercially successful military videogames such as Call of Duty and the Battlefield series (EA DICE 2002) allow consumers with access to digital technologies such as mobile phones, tablets, computers, and consoles to play within virtual historical scenarios of war and conflict, for instance the First World War (Chapman 2016b), the Second World War (Ramsay 2015), the Haitian Revolution (Hammar 2017a), the Cold War (Pötzsch and Šisler 2016), or contemporary military occupations of the Middle East (Saber and Webber 2017). As Adam Chapman (2016b) has argued, 'many historical video games are amongst the most successful contemporary popular historical products'. This is particularly important given 'the unpopularity of school history', and that 'young people choose to use their free time playing video games set in the past' (O'Neill and Feenstra 2016).

Just as 'Hollywood History' (Loshitzky 1997) has been criticized for its construction of the past through the lens of imperialist and capitalist propaganda (Der Derian 2009, Stahl 2010), so war games propound similar ideologies, perspectives, and representations of conflict (Allen 2011, Huntemann and Payne 2010, Payne 2016, Schut 2007). Although no quantitative study has been published on the dominant forms of meaning-making in war games, much research has explored the ways that commercial titles unreflectively convey hegemonic views of war and memory. For example, Andrew Salvati and Jonathan Bullinger (2013) argue that war games emphasize the so-called authenticity of the material cultures of history, while the multiplicity of perspectives in the depicted conflict in question are usually superficial, one-dimensional, if not entirely removed (Pötzsch 2017). Most war games are generally played from the perspective of Western male soldiers with little to no inclusion of other perspectives, such as those of civilians.

These disconcerting aspects of war games can, we argue, be traced back to the context in which they are produced. Structural factors, such as labour conditions, which shape the games industry find ultimate expression in what Berthold Molden terms a 'mnemonic hegemony', whereby dominant discursive framings privilege certain ways of remembering the past. As he writes, 'Access to and control over the means of communication and diffusion of historical narratives are of utmost importance for the establishment and maintenance of mnemonic hegemony' (Molden 2016: 134). When the material and social relations of production affect what is possible in media, this means that our understanding of war is constrained by these very same material and social relations, and thereby inadvertently reproduced by virtue of these relations. As Karl Marx and Friedrich Engels (1932) argued, 'if you proceed from production, you necessarily concern yourself with the real conditions of production and with the productive activity of men'. When operating within a power structure, workers at videogame production companies are managed to produce particular outcomes (Woodcock 2016, 2019). While the individuals within a studio may hold different views on war, the collective project is often bound by structural requirements and is thus beyond the control of workers within the overall labour process, as we argue in this chapter.

Rather than limiting our analysis to how war games privilege dominant ways of remembering conflict on the level of text, we instead turn towards a political-economy approach to account for their contribution to contemporary mnemonic hegemony. Investigating digital games production as a framing structure draws out the ideological and hegemonic ideas within the industry, which are then reinforced and reproduced in the games themselves, simultaneously closing down the transformative capacities they might hold.

The Political Economy of the Games Industry

We turn here to discuss the political economy that underpins the games that are produced. We start here because, as game designer and professor Paolo Pedercini states, the games industry serves as 'a laboratory for crucial tendencies of capitalism' (in Partin 2017). Similarly, Aphra Kerr writes:

> the commodification of games and play is an example of how capitalism expands into all areas of everyday life and changes things that we do and use into things which we exchange for money. Since the early 1970s the video games industry has explored ways to commodify children's game and play time, and is increasingly a part of adult leisure too. (Kerr 2017: 29)

Like many other media and cultural forms, videogames are produced within and are enabled by a historical and material global network dependent on the imperialist capitalist system across the world (Dyer- Witheford and de Peuter 2009, Kirkpatrick 2013: 108). It is through the neo-colonial access to slave labour extracting cobalt in the Democratic Republic of Congo (Sinclair 2015, 2016, 2017, Valentine 2018); the state- run capitalist super-exploitation in countries such as China (Fuchs 2018, Qiu 2017); the free-trade regulations of the centres of economic power; the precarious working conditions of software developers in North America (Consalvo 2008, O'Donnell 2014, Williams 2013) and in cheaply outsourced countries like Malaysia and Vietnam (Flecker 2016, Thomsen 2018); the exploitation of passion via 'playbour' by multibillion-dollar software companies (Bulut 2018, Dyer-Witheford and de Peuter 2009); and the disposal of e-waste back into the exploited countries (Maxwell et al. 2015, Nguyen 2017), that digital games are able to flourish as a cultural and economic force for those consumers with access to them (Huntemann and Aslinger 2013).

The consolidation of power by software and hardware platforms also indicates the 'platformisation of culture' (Nieborg and Poell 2018), whereby markets are structured in the interests of a single dominant platform holder, such as Apple, Amazon, Google, Sony, Microsoft or Valve. As both Daniel Joseph's (2018) and Mark Graham and Jamie Woodcock's (2018) research confirms, the consolidated power of 'platform capitalism' (Srnicek 2016) disassembles workers' rights and their collective organizations, and commodifies their activities online through platformization. While the games industry has been at the forefront of many of these changes, its contemporary form is predicated on twenty-first century imperialism (Smith 2016) and its products are symptoms of the historical and materialist systems from which they derive. The games industry follows monopoly capitalist production networks that super-exploit (Smith 2018) workers and the environment in the imperial periphery, while circulating surplus profits towards the core (Cope 2015). From the centre of power located within this global network, 'a one-way flow of culture and information from center to periphery' (Mosco 2009: 73) is enacted. Hence, as Joseph (2017) argues: 'if you look at video games, capitalism stares back at you. They idealise experiences of individual freedom (through code or play), while exploiting uneven global development'.

In exercising power over the production of war games, most major companies operate from the US, Canada and Western European countries, with China also playing an increasingly important role (Kerr 2017). In addition to operating in geographical centres of power, the individuals who are employed to code and produce war games are homogenous across race, gender, age, and sexuality (Edwards et al. 2014, Mateos-Garcia et al. 2014, Ramanan 2017, Weststar et al. 2018, Weststar and Legault 2015). The demographics of the games industry in North America and Europe show that the prevailing identity of the game developer is largely that of a white, heterosexual man in his late twenties or early thirties.

This homogenous composition of the workforce enforces a habitus that ignores or overlooks the experiences of others. Research on the misogyny and patriarchy in the games industry (Johnson 2013, 2014) affirms this observation, as do numerous statements by women and feminist organizations (Ochsner 2017). In addition, racial hierarchies within game studios and their culture-industrial logic ensures the reproduction of white supremacy (Srauy 2017). This structuration of production then affects decisions on how wars should be represented, which usually results in mnemonic hegemony (Hammar 2017b).

While workers from the margins do exist within these companies, they are rarely in positions of power (Woodcock 2016, 2019). A structural and normative form of 'gatekeeping' ensures that only certain people, with certain hegemonic beliefs and conformities, are employed in the games industry and are likely to traverse the power hierarchies of games production. This disparity is seen in the gender salary gap in the branch: surveys have shown that on average women earn $0.86 for every $1 that men make (Miller 2013, Graft 2014). The exploitation of game developers also means that games development is a 'young man's game' (Legault et al. 2017). Social life outside of work is demolished by long workhours, maternity and/or paternity leave is impossible (Consalvo 2008), and deteriorating health resulting from so-called 'crunch periods' is tolerable only for younger and more naïve workers (Campbell 2016). Over 75 per cent of respondents in an IGDA survey (Legault et al. 2017) stated that they suffer from these crunch periods, which are extended periods of time where worker rights or expectations are suspended in favour of finishing the product (Takashi 2017, Williams 2015). As Kerr writes, 'there is a high turnover of staff, a high degree of burnout and many leave the industry in their mid- to late thirties' (Kerr 2017: 16).

The overall experience of the games industry is therefore one of poor working conditions, deep precarity, lack of diversity, and lack of accumulated experience due to a high burnout rate. While the

labour involved is similar to that in other areas of software development and production (O'Donnell 2009), the games industry explicitly markets the work as playful and 'fun' in order more easily to exploit workers (Dyer-Witheford 1999, Fizek 2016, Woodcock and Johnson 2018). The hiring practices of US tech companies have also been criticized for a structural unwillingness to hire recently graduated and qualified people of colour (Bui and Miller 2016, Vara 2016).[3] Thus, as Janine Fron et al. argue, the power structures in the games industry and culture reproduce assumptions about audiences and creators that reinforce the hegemony:

> This hegemonic elite determines which technologies will be deployed, and which will not; which games will be made, and by which designers; which players are important to design for, and which play styles will be supported. The hegemony operates on both monetary and cultural levels. (Fron et al. 2007: 1)

In maintaining this hegemony of play, capital works in tandem with white supremacy and patriarchy to 'divide and conquer', suppressing the wages of the digital labour aristocracy in the imperial core while relying on the social-chauvinistic structure between this labour aristocracy and the super-exploited in the periphery (Cope 2015: 151–2, Du Bois 1935).

In sum, the picture of the global games industry shows an exploited labour aristocracy in the imperial core structured along white, masculine, heteronormative lines, while the super-exploited hardware assemblers and outsourced developers in the peripheries provide extra surplus value. However, this connection to imperialism not only flows along supply chains: it is also deeply connected to the military–industrial complex, which is the other side of twenty-first century imperialism. It is to this that we turn next.

The Military–Industrial Complex and Games

There is a long history of connections between the military–industrial complex and games (Huntemann and Payne 2010, Payne 2016). However, these connections are often only explored in terms of the explicit use of the military and armed conflict as the subject of games, rather than unpicking other relationships that bring the end product into being. This is particularly important, because, as we have argued above, the work that goes into making videogames provides an important avenue for understanding the meaning potentials of the final product (Woodcock 2016), and how people engaged in the work shape it in varying ways.

The connection between the military and videogames was present at the birth of the medium. As Nick Dyer-Witheford and Greig de Peuter (2009: 7) have explained, all of the 'contenders for the title "inventor of the video game" ... were employees of the US military-industrial complex'. In part, this can be traced to the military being key to the development of the computer hardware on which games could be developed. For example, while programmers were employed by the military to devise computer simulations, such activities 'could also be a diversion from working on mass death', particularly work related to nuclear weapons, and 'enjoyed for their technical "sweetness" and oddity without instrumental purpose, transformed into play' (ibid.: 8). This is an example of 'gamification-from- below' (Woodcock and Johnson 2018): finding a way to subvert technology at work for a different purpose.

Games did not remain a subversive pursuit of programmers within the military, however. Once these early games had been developed, the non- programmers in the military were quick to see the potential for videogames to train soldiers for actual combat. From the 1980s onwards, various games were used for wargaming. This ranged from a reskinned version of *Doom II* (id Software 1994) to specially

designed games like *Virtual Battlespace 2* (Bohemia Interactive Simulations 2007) (Dobson 2007). In the process, a connection was formed between 'game developers and war planners' who had 'overlapping interests in multimedia simulation and virtual experience', which resulted in formalized links, collaborations, and even subsidies for the production of new games (Kline et al. 2003: 99). So, while videogames were born accidentally within the military–industrial complex, they have been subjected to attempts to capture and subsume them into the organization of war. The tensions present now were also present at the start: while 'games tend to a reactionary imperial *content*, as militarized, marketized, entertainment commodities, they also tend to a radical, multitudinous *form*, as collaborative, constructive, experimental digital productions' (Dyer- Witheford and de Peuter 2009: 228).

The most militarized forms have been the games published by the US Army, including the *America's Army* (US Army 2002) series and *Full Spectrum Warrior* (Pandemic Studios 2004). The former was developed specifically as a recruitment tool that could be targeted at the next generation of potential soldiers, while the latter was used for training (Payne 2016: 6). These are different from the forms of 'militainment' that Roger Stahl (2010: 6) describes, which involve 'state violence' being 'translated into an object of pleasurable consumption'. Such forms are also found in film and other media, with much longer histories. While the military benefits from this indirect normalization, there are also relationships at play that go further than just the US Army publishing its own games. This is the most overt example, but many others rely on military consultants, drawing elements of the military into their workforce for the game, while also not having 'to submit their design choices to the scrutiny of the government's exacting review processes' (Payne 2016: 6).

The employment of military consultants represents an important development in the relationship between the military–industrial complex and videogames. The success of games has made many members of the military keen to participate, as Sledgehammer Games, the development studio of *Call of Duty: Advanced Warfare* (2014), found: 'we've been fortunate that the series has a lot of fans across military organisations, and within the entertainment industry', meaning that, 'this draws a lot of interest, and a great deal of desire to help *Call of Duty*' (quoted in Stuart 2014). Much like the Western film industry, the drive – and competition – for surface realism (Pötzsch 2017) has meant that many developers engage with consultants as part of the development process. Thus, rather than engaging directly with the military, developers are able to form connections with companies like Strike Fighter Consulting Inc., which purports to offer expertise ranging 'from fighter pilots, bomber pilots, and test pilots to mission commanders, intelligence specialists and special operation forces'. In its publicity, the company explains that 'military consultants' can help developers 'create lifelike combat scenarios that' – they claim – 'will ultimately lead to more immersive gameplay and higher sales'.[4]

Beyond consultancy, there is also the existence of specific kinds of product placement within videogames.[5] Although most consumers are probably unaware of this, many developers pay gun manufacturers to include their products in games. Simon Parkin (2013) notes the long history of companies marketing 'imitation adult products to children', for example with candy cigarettes. Now, 'licensed weapons are commonplace in video games, but the deals between game makers and gun-manufacturer are shrouded', he observes, making it difficult to uncover exactly what is taking place. However, Parkin was able to discuss the details with Barrett, the company that manufactures the M82 sniper rifle that features in many games. The company explained that 'video games expose our brand to a young audience who are considered possible future owners'. This is slightly odd, given the product is a.50 calibre rifle rather than a more generic commodity that might be advertised in film or television. In addition to the exposure, the gun company would also expect a royalty fee for its product featuring in a game – this could be either a single payment or sales percentage, perhaps as high as 5–10 per

cent of the retail price. The negotiation with developers also extends to how it is used in a game. For example, with Barrett, this means knowing 'explicitly how the rifle is to be used, ensuring that we are shown in a positive light ... such as the "good guys" using the rifle' (Parkin 2013). By purchasing videogames, 'consumers have, for the past few years, unwittingly funded arms companies that often have their own military agendas' (ibid.). This blurs the distinction between the game and reality, as money changes hands with a company that creates guns that actually kill people.

These connections between the military–industrial complex and the videogames industry go back to the formation of the industry. In some instances, this involves the direct involvement of the military in the production of games. In other cases, this is a more subtle indirect engagement, which may nevertheless involve payment between the military–industrial complex and the games industry. The relationships between the two shape the way the work of videogames is carried out. For example, designing models of guns can involve developers spending time with the actual guns and military consultants. While this has the potential to increase the 'realism' of the game, it also involves a collaboration between two very different kinds of workers. This process of interaction has the potential to inscribe the game with the processes, motivations, and beliefs of those employed in the military– industrial complex. As a recent example has shown, the US Army has also seen the potential of esports in games such as *Fortnite* (Epic Games 2017), *FIFA* (Extended Play Productions 1994), *Overwatch* (Blizzard Entertainment 2016), and *League of Legends* (Riot Games 2009), by launching its own team 'to help young people see soldiers in a different light' and 'help the Army address the growing disconnect with society' (Sinclair 2018). Across these examples, the influence may happen in obvious and direct ways or in a more subtle manner by shutting down alternative potentialities of games by advising that they are 'unrealistic'.

The Games Industry as Culture Industry

Being embedded in capitalism means that commercial games companies have to earn a profit from the investment put into the production of digital games. This fundamental condition activates assumptions about market preferences, potential buyers, and what experiences and feelings the product should foster. In order to make a convincing pitch to potential investors, for example, a financial case for expected profits has to be established. This means that investors in, and publishers of war games rely on data and assumptions about what their target consumers would be interested in paying for. These assumptions about audiences are usually in support of the status quo, where the games industry's mental construction of a 'gamer' entails assuming certain hegemonic preferences and dislikes (Shaw 2012). Any deviation from norms or expectations in terms of genre, mechanics, characters, or themes only introduces more uncertainty and therefore more financial risk. Capital to fund the production is the essential and primary concern. In one of the authors' interviews with the directors and executives of smaller game companies, a recurring claim was that the finances need to be in order before anything else can be attempted (Hammar forthcoming) – an illustration of what Stephanie de Smale et al. (2017: 6) refer to as the 'tension between creativity and sustainability'. The logic of capitalism in the games industry means that what is produced has to have been confirmed as having been financially successful in the past. This latter point holds true for so-called market research, where focus-group testing, consumer behaviour data, and playtests attempt to pinpoint and predict the profitability and expected amount of sales based on what type of game this is. Such market research by the industry makes various assumptions about the preferences of players, such as what type of identity they would want to experience (Yee 2017b), what genre they are interested in (Nofziger 2014, Yee 2017a), and presumably the viewpoint from which they would like to experience

politics. Simply put, video games rise out of the capitalist mode of production and this mode influences their form and content.

The Politics of Tools and Education

Not only do capitalism and professional relations to the military predispose what gets produced in the games industry, but also the ideology and history of the industry are baked into the actual toolsets that developers use to produce games. Similar to Matthew Fuller's (2003: 25) concept of 'social software' – that programming is 'determined by a submissive relation to the standards set by Microsoft' – the engines, graphics toolsets, tactile interfaces, and algorithmic conditions are inscribed with ideological traces. For instance, game developer and academic Robert Yang tweeted that physical-based-rendering 'exists mostly to make gunmetal look cooler'.[6] A similar point could be made about the variety and complexity of gunmetal textures in graphics software toolsets, such as *3DS Studio Max* and its asset stores. Here, the industry's need for state-of-the-art graphical representation of guns to entice consumers demands that the software tools prioritize the visual representation of guns in the most advanced form possible.

Meanwhile, the often-utilized Unreal Engine has a built-in development framework to easily produce first-person perspectives and so-called shooter mechanics. The lighting technology employed in state-of-the-art game engines where certain skin tones are less developed under different lighting conditions is a similar example of an ideological imposition by the technology used in the production of games. As David D'Angelo writes, 'the darker spectrum of color is very underrepresented [in the Nintendo Entertainment System], and there aren't many shades that work for displaying a character with a darker skin tone' (cited in Cole and DePass 2017). Already baked into the technological tools themselves, if not the algorithmic condition of the computer (Galloway 2006), the 'software as culture' (Fuller 2003) imposes itself on the workers who produce war games.

Beyond the baked-in ideological assumptions of videogames technologies, the universities and other institutions that educate those who produce and analyze games also maintain a hegemony in line with the imperialist, capitalist status quo. While this may not primarily be the fault of individual educators and researchers, institutional priorities largely focus on skills directly related to toolsets and craftsmanship. Instead of educating future workers in broader societal considerations, the emphasis is on the acquisition of practical skills for developing videogames. This is due to the industry's demand for premium skillsets in order for students to gain wage-labour in the industry. Consequently, games education providers are required to address this need, as demanded by either the neoliberal state or privately- funded students, if they want to remain functional institutions. Kerr writes:

> Now people with degrees have to take unpaid internships to demonstrate their suitability to work in the industry, or set up their own company upon graduation. ... Yet there are many more people studying games than will be able to obtain jobs in the games industry and there is a premium set on experience. This mixture of oversupply of young educated workers, a drain from the industry of experienced workers and unstable working conditions is affecting the demographic profile of those who work in the industry. (Kerr 2017: 17)

The end-result of what scholars term the neoliberalisation of universities and educational institutions is that they remove any irrelevant topics that are not profitable for the industry and thereby capital (Ergül and Coşar 2017). Games courses in universities become factories to provide exploitable labour for the games industry – and education serves the interest of capital. This means that subjects which are difficult to reduce to economic utility under neoliberal ideology, such as cultural studies, sociology,

feminism, or critical theory, have to be de-prioritized, if not removed altogether, while practical courses on how to quickly produce 3D models or to work collaboratively on a team project are crucial for the curriculum. Thus, the various institutions that provide education in game studies reproduce workers who are concerned with how quickly they can use their skillsets to produce content for their employers.

When working with war games, their own precarious position and lack of awareness of the overall project can motivate such employees to reproduce hegemonic mnemonic war games. Bourgeois academia thus exists in the service of capitalism and all educational ideals are measured against its demands, thereby reproducing a complacent workforce that is ripe for exploitation and open to the cultural reproduction of imperialist, militarist goals. As many have argued before (Consalvo 2012, Leonard 2006, Shaw 2018, Dyer-Witheford and de Peuter 2009, Russworm 2018, among others), there is a responsibility for scholars to engage with and dismantle hierarchies of race, gender, and class via their own scholarship and in the institutions in which they are embedded. The question for scholars and educators within game studies, therefore, is to ask themselves what they hope to achieve with the praxis they do every day. Confronted with repeated crises of capitalism, persistent imperialism and other global disasters, scholars within game studies should reflect on their own political potential and their complicity with present structures of oppression and an increasingly apocalyptic future.

Conclusion: Hegemonic Articulations of Mnemonic–Hegemonic War Games

Overall, the political economy of war games is characterized by three key aspects: first, its imbrication in the systems of twenty-first century imperialist capitalism; second, its symbiotic relationship with the military– industrial complex; and third, the ideologies embedded in software tools and educational programmes that constrain and inoculate software workers with hegemonic ideas related to militarism and 'capitalist realism' (Fisher 2009). These contexts of production and their material conditions mean that as long as society is structured along contemporary capitalist lines, so too will the majority of war games conform to hegemonic values pertaining to conflict resolution, memory politics, how we see ourselves and others, and so forth. Yet, just as with other forms of media such as the novel, film, and more, there is a potential to tell other stories or subvert the dominant ideologies of society.

Given these perhaps apparent oppressive structures in which workers in the 'war game industry' navigate their daily lives, the questions readers of this anthology should ask themselves are: What can be done to oppose and dismantle the militaristic and capitalist structures in which we all live? How does our everyday practice address these fundamental conditions of the domain in which we work?

Throughout the chapter, we have discussed the influence of different games, ways of making games and the relationships involved in producing wargames. While we have focused on how games are made, it is fitting to reflect on their play to conclude. As Marcus Schulzke writes in his nuancing of critical analysis:

> 'military video games are complex texts that are best analyzed with attention to the diverse understandings of war they reveal, especially the insight they offer into violent organizations' values and media strategies' (Schulzke 2017: 610).

In the majority of wargames, the subject matter is historical, representing a war that has already taken place; building a representation of an historical event that happened before a player's birth. The importance of this kind of memory is indicated by Matthew Thomas Payne (2016: 7), drawing on

Benedict Anderson's work on nationalism and 'imagined communities'. The way we make, tell, and experience these events shapes the project of nationalism. Games are clearly a key part of this process (Sterczewski 2016).

So where does that leave critical accounts of videogames? The first step is to make visible the relationships of production that are hidden from the consumer's point of view – tracing the overt and obscured connections between the military and the industry, drawing attention to the licensing of guns in videogames, highlighting the role of games in recruiting and training armies, or exploring the roles of education and tools in shaping the final product. All of these are important, but so too is remembering the point made by Stuart Hall (1981: 239): 'popular culture is one of the sites where this struggle for and against a culture of the powerful is engaged: it is also the stake to be won or lost *in* that struggle'. Games, due to the peculiarities of their form, are a powerful 'arena of consent and resistance' (ibid.) and this needs to be celebrated and highlighted in opposition to the dominance of militarism. The emerging wave of unionisation in the games industry could also reshape this in novel ways, and is an important avenue for future research.

Notes

1 Halo Twitter Account, 11 November 2018, available at: https://twitter.com/Halo/status/1061637421995937793 (accessed 12 November 2018).

2 See the data tweeted by industry analyst Mat Piscatella at https://twitter.com/ MatPiscatella/status/1060212182607118336, 7 November 2018 (accessed 13 November 2018).

3 Yet the solution is not simply to 'Add Minorities and Stir' (Shaw 2015, 2017) – i.e. to add more excluded groups to the exploited workforce – because such solutions move the responsibility away from current power-holders. Simply hiring more marginalized workers puts the tasks of representation on their shoulders; and they, in turn, do not all hold the same beliefs and might even reproduce the dominant hegemony themselves.

4 See: How Military Consulting Leads to the Video Game of the Year, *Strike Fighter Consulting*, 26 October, http://strikefighterconsultinginc.com/blog/how-military- consulting-leads-to-the-video-game-of-the-year/(accessed 15 November 2018).

5 For example, following the increased militarization of US society after 9/11, the US Army brought two armoured vehicles and a helicopter to a games industry trade show in 2003 as part of its promotional strategy. See: E3 2003 - SwankWorld Takes a Look Back, www.swankworld.com/Features/e32003/ e32003.htm (accessed 12 December 2018).

6 See Yang's 14 August 2014 tweet at https://twitter.com/radiatoryang/status/ 499963513029558274 (accessed 4 September 2017).

References

Allen R. (2011) The Unreal Enemy of America's Army, *Games and Culture*, 6(1): 38–60.

Bui, Q. and C. C. Miller (2016) Why Tech Degrees Are Not Putting More Blacks and Hispanics into Tech Jobs, *New York Times*, 25 February, www.nytimes. com/2016/02/26/upshot/dont-blame-recruiting-pipeline-for-lack-of-diversity-in- tech.html (accessed 4 September 2017).

Bulut, E. (2018) One-Dimensional Creativity: A Marcusean Critique of Work and Play in the Video Game Industry, *tripleC: Communication, Capitalism & Critique*, 16(2): 757– 771. DOI: 10.31269/triplec.v16i2.930.

Campbell, C. (2016) The Game Industry's Disposable Workers, *Polygon*, 19 December, www.polygon.com/features/2016/12/19/13878484/game- industry-worker-misclassification (accessed 4 September 2017).

Chapman, A. (2016a) *Digital Games as History: How Videogames Represent the Past and Offer Access to Historical Practice*. New York, NY: Routledge.

Chapman, A. (2016b) It's Hard to Play in the Trenches: World War I, Collective Memory and Videogames, *Game Studies* 16(2), http://gamestudies.org/1602/ articles/chapman (accessed 23 January 2017).

Cole, Y. and T. DePass (2017) Black Skin Is Still a Radical Concept in Video Games, *Waypoint*, 1 March, https://waypoint.vice.com/en_us/article/78qpxd/ black-skin-is-still-a-radical-concept-in-video-games (accessed 4 September 2017).

Consalvo, M. (2008) Crunched by Passion: Women Game Developers and Workplace Challenges, in Y. Kafai, C. Heeter, J. Denner and J. Y. Sun (eds) *Beyond Barbie and* Mortal Kombat*: New Perspectives on Gender and Gaming*. Cambridge, MA: MIT Press.

Consalvo, M. (2012) Confronting Toxic Gamer Culture: A Challenge for Feminist Game Studies Scholars, Ada: A Journal of Gender, New Media, and Technology, Issue 1, http://adanewmedia.org/2012/11/issue1-consalvo/ (accessed 3 June 2016).

Cope, Z. (2015) Divided World, Divided Class (second edition). Montreal: Kersplebedeb.

de Smale, S., M. J. L. Kors and A. M. Sandovar (2017) The Case of *This War of Mine*: A Production Studies Perspective on Moral Game Design, *Games and Culture*, 14(4), 387–409. DOI: 10.1177/1555412017725996.

Der Derian, J. (2009) *Virtuous War: Mapping the Military-Industrial-Media- Entertainment- Network* (second edition). London: Routledge.

Dobson, J. (2007) UK Ministry of Defense Gets Virtual Battlespace 2, *Gamasutra*, 2 May, www.gamasutra.com/view/news/104712/UK_Ministry_of_Defense_ Gets_Virtual_Battlespace_2.php (accessed 12 December 2018).

Du Bois, W. E. B. (1935) *Black Reconstruction in America*. New Brunswick, NJ: Transaction Publishers.

Dyer-Witheford, N. (1999) The Work in Digital Play: Video Gaming's Transnational and Gendered Division of Labour, *Journal of International Communication*, 6(1): 69–93.

Dyer-Witheford, N. and G. de Peuter (2009) *Games of Empire: Global Capitalism and Video Games*. Minneapolis, MN: University of Minnesota Press.

Edwards, K., J. Weststar, W. Meloni, C. Pearce and M.-J. Legault (2014) *IGDA Developer Satisfaction Survey 2014: Summary Report*. Toronto: International Game Developers Association, http://c.ymcdn.com/sites/www.igda.org/resource/ collection/9215B88F-2AA3-4471-B44D-B5D58FF25DC7/IGDA_DSS_2014- Summary_Report.pdf (accessed 22 January 2015).

Ergül, H. and S. Coşar, eds (2017) *Universities in the Neoliberal Era: Academic Cultures and Critical Perspectives*. London: Palgrave Macmillan.

Fisher, M. (2009) *Capitalist Realism: Is There No Alternative?* Winchester: Zero Books.

Fizek, S. (2016) All Work No Play: Are Games Becoming the Factories of the Future? *First Person Scholar*, 9 March, www.firstpersonscholar.com/all-work- and-no-play./ (accessed 20 December 2018). Flecker, J., ed. (2016) *Space, Place and Global Digital Work*. London: Palgrave Macmillan.

Fron, J., T. Fullerton, J. F. Morie and C. Pearce (2007) The Hegemony of Play, Proceedings, DiGRA: Situated Play, Tokyo, 24–27 September, http://ict.usc.edu/ pubs/The%20Hegemony%20of%20Play.pdf (accessed 21 February 2014).

Fuchs, C. (2018) Capitalism, Patriarchy, Slavery, and Racism in the Age of Digital Capitalism and Digital Labour, *Critical Sociology*, 44(4–5): 677–702.

Fuller, M. (2003) *Behind the Blip: Essays on the Culture of Software*. Brooklyn, NY: Autonomedia.

Galloway, A. R. (2006) *Gaming: Essays on Algorithmic Culture*. Minneapolis, MN: University of Minnesota Press.

Graft, K. (2014) Game Developer Salary Survey 2014: The Results Are In! *Gamasutra*, 22 July, www.gamasutra.com/view/news/221533/Game_Developer_ Salary_Survey_2014_The_results_are_in.php (accessed 4 September 2017).

Graham, M. and J. Woodcock (2018) Towards a Fairer Platform Economy: Introducing the Fairwork Foundation, *Alternate Routes: A Journal of Critical Social Research*, 29: 242–53.

Hall, S. (1981) Notes on Deconstructing 'The Popular', in R. Samuel (ed.) *People's History and Socialist Theory*. London: Routledge and Kegan Paul.

Hammar, E. L. (2017) Counter-Hegemonic Commemorative Play: Marginalized Pasts and the Politics of Memory in the Digital Game *Assassin's Creed: Freedom Cry*, *Rethinking History*, 21(3): 372–95.

Hammar, E. L. (2017b) The Political Economy of Historical Digital Games, *Media Development*, LXIV(4): 25–9.

Hammar, E. L. (forthcoming) Producing Play Under Mnemonic Hegemony: The Political Economy of Memory Production in the Videogames Industry, *Digital Culture & Society*. Huntemann, N. B. and B. Aslinger, eds (2013) *Gaming Globally: Production, Play, and Place*. New York, NY: Palgrave Macmillan.

Huntemann, N. B. and M. T. Payne, eds (2010) *Joystick Soldiers: The Politics of Play in Military Video Games*. London: Routledge. Johnson, R. S. (2013) Toward Greater Production Diversity: Examining Social Boundaries at a Video Game Studio, *Games and Culture*, 8(3): 136–60. Johnson, R. S. (2014) Hiding in Plain Sight: Reproducing Masculine Culture at a

Video Game Studio, *Communication, Culture & Critique*, 7(4): 578–94.

Joseph, D. (2017) Code of Conduct, *Real Life*, 12 April, https://reallifemag.com/ code-of-conduct/ (accessed 12 December 2018).

Joseph, D. (2018) The Discourse of Digital Dispossession: Paid Modifications and Community Crisis on Steam, *Games and Culture*, 13(7): 690–707.

Kerr, A. (2017) *Global Games: Production, Circulation and Policy in the Networked Era*. New York, NY: Routledge. Kirkpatrick, G. (2013) *Computer Games and the Social Imaginary*. Cambridge: Polity.

Kline, S., N. Dyer-Witheford and G. de Peuter (2003) *Digital Play: The Interaction of Technology, Culture, and Marketing*. Montreal: McGill-Queen's University Press.

Legault, M.-J., J. Weststar and L. Tô (2017) A Union for Videogame Developers? *First Person Scholar*, 18 January, www.firstpersonscholar.com/a-union-for- videogame-developers/ (accessed 4 September 2017).

Leonard, D. J. (2006) Not a Hater, Just Keepin' It Real: The Importance of Race- and Gender-Based Game Studies, *Games and Culture*, 1(1): 83–8.

Loshitzky, Y., ed. (1997) *Spielberg's Holocaust: Critical Perspectives on* Schindler's List. Bloomington, IN: Indiana University Press.

Marx, K., and F. Engels (1932) *The German ideology*. Available at: https://www. marxists.org/archive/marx/works/1845/german-ideology/ch04d.htm (accessed 20 December 2018).

Mateos-Garcia, J. H. Bakhshi and M. Lenel (2014) *A Map of the UK Games Industry*. London: Nesta, www.thecreativeindustries.co.uk/media/274111/map_ uk_games_industry_wv.pdf (accessed 20 December 2018).

Maxwell, R., J. Raundalen and N. L. Vestberg, eds (2015) *Media and the Ecological Crisis*. New York, NY: Routledge. Miller, P. (2013) Industry in Flux: The 12th Annual GD Magazine Salary Survey, *Game Developer Magazine*, 20(4): 15–21, http://twvideo01.ubm-us.net/o1/ vault/GD_Mag_Archives/GDM_April_2013.pdf (accessed 2 March 2014).

Molden, B. (2016) Resistant Pasts versus Mnemonic Hegemony: On the Power Relations of Collective Memory, *Memory Studies*, 9(2): 125–42.

Mosco, V. (2009) The Political Economy of Communication (second edition). London: Sage.

Nguyen, J. (2017) Digital Games about the Materiality of Digital Games, *Ecozon@: European Journal of Literature, Culture and Environment*, 8(2): 18–38.

Nieborg, D. B. and T. Poell (2018) The Platformization of Cultural Production: Theorizing the Contingent Cultural Commodity, *New Media & Society*, 20(11): 4275–92.

Nofziger, H. (2014) Platform, Not Gender, Drives Gamer Differences – EEDAR, *GamesIndustry.biz*, 30 October, www.gamesindustry.biz/articles/2014-10-30- platform-not-gender-drives-gamer-differences-eedar (accessed 4 September 2017).

Ochsner, A. (2017) Reasons Why: Examining the Experience of Women in Games 140 Characters at a Time, *Games and Culture*, Online First: 31 May. DOI: 10.1177/1555412017709418.

O'Donnell, C. (2009) The Everyday Lives of Video Game Developers: Experimentally Understanding Underlying Systems/Structures, *Transformative Works and Cultures*, 2, https://journal.transformativeworks.org/index.php/twc/ article/view/73 (accessed 20 December 2018).

O'Donnell, C. (2014) *Developer's Dilemma: The Secret World of Videogame Creators*. Cambridge, MA: MIT Press.

O'Neill, K and B. Feenstra (2016) 'Honestly, I Would Stick with the Books': Young Adults' Ideas about a Videogame as a Source of Historical Knowledge, *Game Studies*, 16(2), http://gamestudies.org/1602/articles/oneilfeenstra (accessed 12 December 2018).

Parkin, S. (2013) Shooters: How Video Games Fund Arms Manufacturers, *Eurogamer*, 31 January, www.eurogamer.net/articles/2013-02-01-shooters-how- video-games-fund-arms-manufacturers (accessed 20 December 2018).

Partin, W. (2017) Socialism at Play: An Interview with Paolo Pedercini, *Jacobin*, 9 August, http://jacobinmag.com/2017/08/paolo-pedercini-interview-gaming- industry-molleindustria (accessed 5 September 2017).

Payne, M. T. (2016) *Playing War: Military Video Games after 9/11*. New York, NY: New York University Press.

Pötzsch, H. (2017) Selective Realism: Filtering Experiences of War and Violence in First- and Third-Person Shooters, *Games and Culture*, 12(2): 156–78.

Pötzsch, H. and V. Šisler (2016) Playing Cultural Memory: Framing History in *Call of Duty: Black Ops* and *Czechoslovakia 38–89: Assassination, Games and Culture*, 14 (1): 3–25.

Qiu, J. L. (2017) *Goodbye ISlave: A Manifesto for Digital Abolition*. Champaign, IL: University of Illinois Press. Ramanan, C. (2017) The Video Game Industry Has a Diversity Problem – But It Can Be Fixed, *The Guardian*, 15 March, www.theguardian.com/ technology/2017/mar/15/video-game-industry-diversity-problem-women-non- white-people (accessed 4 September 2017).

Ramsay, D. (2015) Brutal Games: *Call of Duty* and the Cultural Narrative of World War II, *Cinema Journal*, 54(2): 94–113.

Russworm, T. M. (2018) A Call to Action for Video Game Studies in an Age of Reanimated White Supremacy, *The Velvet Light Trap* 81(1): 73–6.

Saber, D. and N. Webber (2017) 'This is our *Call of Duty*': Hegemony, History and Resistant Videogames in the Middle East, *Media, Culture & Society*, 39(1): 77–93.

Salvati, A. J. and J. M. Bullinger (2013) Selective Authenticity and the Playable Past, in M. W. Kapell and A. B. R. Elliott (eds) *Playing with the Past: Digital Games and the Simulation of History*. London: Bloomsbury.

Schulzke, M. (2017) Military Videogames and the Future of Ideological Warfare, *British Journal of Politics and International Relations*, 19(3): 609–26.

Schut, K. (2007) Strategic Simulations and Our Past: The Bias of Computer Games in the Presentation of History, *Games and Culture*, 2(3): 213–35.

Shaw, A. (2012) Do You Identify as a Gamer? Gender, Race, Sexuality, and Gamer Identity, *New Media & Society*, 14(1): 28–44.

Shaw, A. (2015) *Gaming at the Edge: Sexuality and Gender at the Margins of Gamer Culture*. Minneapolis, MN: University of Minnesota Press.

Shaw, A. (2017) Diversity without Defense: Reframing Arguments for Diversity in Games, *Kinephanos*, Special Issue: Gender Issues in Video Games, July, www. kinephanos.ca/2017/diversity-without-defense/ (accessed 4 September 2017).

Shaw, A. (2018) Are We There Yet?: The Politics and Practice of Intersectional Game Studies, *The Velvet Light Trap*, 81: 76–80.

Sinclair, B. (2015) Conflict Minerals the Real Link between Games and Violence, *GamesIndustry.biz*, 3 June, www.gamesindustry.biz/articles/2015-06-03-conflict- minerals-the-real-link-between-games-and-violence (accessed 4 September 2017).

Sinclair, B. (2016) Conflict Mineral Sourcing Still Hazy For Games Industry, *GamesIndustry.biz*, 7 June, www.gamesindustry.biz/articles/2016-06-07-conflict- mineral-sourcing-still-hazy-for-games-industry (accessed 4 September 2017).

Sinclair B (2017) Conflict Minerals Progress in Jeopardy, *GamesIndustry.biz*, 5 June, www.gamesindustry.biz/articles/2017-06-05-conflict-minerals-progress- in-jeopardy (accessed 4 September 2017).

Sinclair, B. (2018) US Army Launching eSports Team as Recruiting Effort, *GamesIndustry.biz*, 14 November, www.gamesindustry.biz/articles/2018-11- 14-us-army-launching-esports-team-as-recruiting-effort (accessed 15 November 2018).

Smith, J. (2016) *Imperialism in the Twenty-First Century: Globalization, Super- Exploitation, and Capitalism's Final Crisis*. New York, NY: Monthly Review Press.

Smith, J. (2018) Exploitation and Super-exploitation, *Monthly Review*, 14 April, https://mronline.org/2018/04/14/exploitation-and-super-exploitation/ (accessed 17 December 2018).

Srauy, S. (2017) Professional Norms and Race in the North American Video Game Industry, *Games and Culture*. DOI: 10.1177/1555412017708936.

Srnicek, N. (2016) *Platform Capitalism*. Cambridge: Polity. Stahl, R. (2010) *Militainment, Inc.: War, Media, and Popular Culture*. New York, NY: Routledge.

Sterczewski, P. (2016) This Uprising of Mine: Game Conventions, Cultural Memory and Civilian Experience of War in Polish Games, *Game Studies*, 16(2), http://gamestudies.org/1602/articles/sterczewski (accessed 23 January 2017).

Stuart, K. (2014) Call of Duty: Advanced Warfare: 'We Worked with a Pentagon Adviser', The Guardian, 28 August, www.theguardian.com/technology/2014/ aug/28/call-of-duty-advanced-warfare-pentagon-adviser (accessed 15 November 2018).

Takashi, D. (2017) 76% of Game Developers Still Labor Under Crunch Conditions, *VentureBeat*, 28 February, https://venturebeat.com/2017/02/28/76-of-game- developers-work-crunch-time-without-paid-overtime/ (accessed 4 September 2017).

Thomsen, M. (2018) The Universe Has Been Outsourced, *The Outline*, 6 February, https://theoutline.com/post/3087/outsourcing-blockbuster-video-games-made-in- china-horizon-zero-dawn (accessed 7 July 2018).

Valentine, R. (2018) Which Game Companies Could Be Using Slave Labor? *GamesIndustry.biz*, 27 June, www.gamesindustry.biz/articles/2018-06-19-apple- worlds-company-conflict-minerals (accessed 5 August 2018).

Vara, V. (2016) Why Doesn't Silicon Valley Hire Black Coders? *Bloomberg.com*, 21 January, www.bloomberg.com/features/2016-howard-university-coders/ (accessed 4 September 2017).

Weststar, J. and M.-J. Legault (2015) *IGDA Developer Satisfaction Survey 2015: Summary Report*. Toronto: International Game Developers Association, https://c.ymcdn.com/sites/www.igda.org/resource/collection/CB31CE86-F8EE- 4AE3-B46A-148490336605/IGDA%20DSS%202015-SummaryReport_Final_ Sept15.pdf (accessed 6 June 2016).

Weststar, J., V. O'Meara and M.-J. Legault (2018) *Developer Satisfaction Survey 2017: Summary Report*. Toronto: International Game Developers Association, https://cdn.ymaws.com/www.igda.org/resource/resmgr/2017_DSS_/!IGDA_ DSS_2017_SummaryReport.pdf (accessed 21 December 2018).

Williams, I. (2013) 'You Can Sleep Here All Night': Video Games and Labor, *Jacobin*, 8 November, http://jacobinmag.com/2013/11/video-game-industry/ (accessed 5 September 2017).

Williams, I. (2015) Crunched: Has the Games Industry Stopped Exploiting Its Workforce? *The Guardian*, 18 February, www.theguardian.com/technology/2015/ feb/18/crunched-games-industry-exploiting-workforce-ea-spouse-software (accessed 4 September 2017).

Woodcock, J. (2016) The Work of Play: Marx and the Video Games Industry in the United Kingdom, *Journal of Gaming & Virtual Worlds*, 8(2): 131–43.

Woodcock, J. (2019) *Marx at the Arcade: Consoles, Controllers, and Class Struggle*. Chicago, IL: Haymarket Books.

Woodcock, J. and M. R. Johnson (2018) Gamification: What It Is, and How to Fight It, *The Sociological Review*, 66(3): 542–58.

Yee, N. (2017a) Beyond 50/50: Breaking Down the Percentage of Female Gamers by Genre, *Quantic Foundry*, 19 January, https://quanticfoundry. com/2017/01/19/female-gamers-by-genre/ (accessed 8 November 2017).

Yee, N. (2017b) Just How Important Are Female Protagonists? *Quantic Foundry*, 29 August, http://quanticfoundry.com/2017/08/29/just-important-female- protagonists/ (accessed 4 September 2017).

Ludography

Blizzard Entertainment (2016) *Overwatch*. Activision. Bohemia Interactive Simulations (2007) *Virtual Battlespace 2*. Bohemia Interactive. Bungie (2001) *Halo*. Microsoft. EA DICE (2002) *Battlefield 1942*. Electronic Arts. Epic Games (2017) *Fortnite*.

Epic Games Extended Play Productions (1994) *FIFA*. EA Sports Infinity Ward (2003) *Call of*

Duty. Activision. Riot Games (2009) *League of Legends*. Riot Games Sledgehammer Games (2014) *Call of Duty: Advanced Warfare*. Activision. Treyarch

(2005) *Call of Duty 3*. Activision. US Army (2002) *America's Army*. US Army.