

# Chapter 11

## Assembling Video Game Worlds

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### 11.1 Introduction

Orbited by two moons, White Lady and Blue Child, Azeroth is a world inhabited by elves, humans, dwarves, goblins, trolls, gnomes, and dragons. It is a world comprised of three main continents, with islands spattered across its dangerous seas. Azeroth's geography ranges from lush forests with wild fauna, to lonely snow-capped mountains and enchanted cities. This strange universe is the setting for the award-winning online video game, *World of Warcraft*. With over 11 million subscribers the game is currently the most popular "massively multiplayer online role-playing game" (MMORPG), having captured well over half of the online multiplayer market in 2008. If *World of Warcraft* was a country, it would be the 75th most populated in the world, one ahead of Greece. With such an enormous user-base and numerous accolades and cultural memes, the game is a mainstream hit and for many users is their primary form of social recreation. Adopting a unique online persona or "avatar," players can enact and perform a multitude of alternative characters, genders and races. Indeed, this escapism is part and parcel of the attraction of the game. But beneath this quite extraordinary virtual community, there is a complex assemblage of software code, hardware technology, and communication channels that enable a seamless virtual experience. What is particularly interesting in the context of this book are the ways that such communities blur the line between an engineered "reality" and an engineered "virtuality." It is precisely this unclear interface that this chapter seeks to further elaborate.

Traditional megaengineering projects, from dams to skyscrapers, have discrete material boundaries and relations. They can be identified, counted, and navigated, even if they are, in turn, comprised of a complex network of people, places, and technologies. With the explosion of the internet and the proliferation of video games in homes across the world, an interesting shift has taken place. No longer are engineering projects solely material enterprises, and no longer is the design of the project

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ever “complete.” Instead, virtual worlds have come to occupy an increasingly complex domain of interaction for software engineers and players throughout the globe. Taking its cue from this shift, this chapter elaborates on gaming communities as assemblages that constantly slide between (and blur) the clear divide between the “real” and the “virtual.” Deploying the conceptual blueprint of “assemblage theory” from Manuel DeLanda, I argue that games such as *World of Warcraft* are spaces produced by a hybrid assemblage of material and representational components, and that, far from ever being “closed,” are worlds engineered to be in a deliberate and constant state of transformation.

The chapter is composed of the following sections. First, it explores the economics of the video game industry, noting the transfer between real and virtual currency. Second, it explores the multiplayer aspect of games through Xbox Live. Third, the chapter takes hold of some of the controversy in the literature surrounding racist, gendered, and violent on-screen representations. Fourth, the “military entertainment complex” is explored through *America’s Army*. Finally, the main theoretical contribution of the chapter is made, with assemblage theory used to construct an analysis of video games based on the interaction of material, representational, territorializing, deterritorializing, and coding components.

## 11.2 Assembling the Video Game Industry

Before unpacking the complex assemblages of online gaming communities, this section will provide context for what is an enormous and expanding industry. For example, while the U.S. economy grew at less than 4% between 2003 and 2006, over the same period the video game industry expanded by 17% and will support over 250,000 American jobs in 2009 (Entertainment Software Association, 2009a). Within the U.S., the industry has a highly uneven geographical concentration, with the majority of design and production clustered in the state of California. The company Activision Blizzard Inc, formed as the result of an \$18.9 billion dollar merger in 2008, is headquartered in Santa Monica. Owning the rights to extremely popular franchises from *Warcraft* to *Crash Bandicoot*, the company shrugged off worldwide recession by posting revenues of \$5 billion dollars in 2008. Overall, the video game industry enjoyed record sales in 2008, with 97.6 million units sold, amounting to a staggering \$11.7 billion in revenue. The Entertainment Software Association (2009b) reveal startling data on players, too; for example 68% of American households play video games, the average gamer is 35 years old and 25% are over the age of 50. Women over the age of 40 are the industry’s fastest growing demographic, accounting for 40% of players overall.

What is also significant are the ways the virtual worlds of video games are themselves spaces for economic activity (and not just in terms of subscription fees for online video games that average \$15 dollars a month). We are all by now used to brand placement in movies. But it is only more recently that advertisers have targeted video game worlds for their products. Players often utilize and navigate

objects in gaming worlds that are apt for branding, from luxury cars to in-game placards that can advertise anything. This growing phenomenon of in-game advertising was worth \$80 million dollars in 2005. This is hardly surprising, given that Nelson, Yaros, and Keum (2006) argue that feelings of in-game immersion can persuade the player to purchase real-life brands. But there are more commercial opportunities in video games than brand placement and subtle (or not-so-subtle) advertising. I remember being struck, back in 2005, when the MMORPG *Everquest II* incorporated a feature in the game that enables you to order a pizza while in the middle of a virtual universe. Players simply typed the command “/pizza” in the game console, placed their order, and a fresh pizza would be delivered shortly after. Further economic “blurring” between online and offline worlds is outlined in Malaby’s (2006) study of “capital” in video games. Here, in-game virtual items that represent a high degree of social capital within the game, such as valuable weapons or high-level characters, are sold and traded online. With close to a million participants and a turnover of \$360 million dollars in 2006, *Entropia Universe* is a prime example of a virtual world with a real cash economy that allows fortunes to be generated from virtual business transactions, such as trading in-game real estate. It is no exaggeration to say that megaengineering brings in megabucks.

Indeed, the trading of virtual currency for real currency is estimated to generate between \$200 million and \$1 billion annually and employs hundreds of thousands of people worldwide, with a consumer market of between 5 and 10 million people (Heeks, 2008). Although now clamped down upon by game developers, “gold farmers” are online players that amass virtual “gold” within games like *World of Warcraft* and then sell it on auction sites like eBay for real money. China represents 80–85% of total gold farmers, with each “employee” earning an average of \$130 dollars a month. Each “farmer” is predominately male between the ages of 18–25, working 12 h shifts 7 days a week, and is often a rural migrant. Since the predominant cost of gold farming is labor, it come as no surprise that gold farms are located in low-wage countries like China, a country that has at least 50,000 of these virtual workshops (Heeks, 2008). Within China they are located in urban areas of coastal provinces, due to the proximity of ICT infrastructure, gamers, and overseas connections. Such is the staggering scale of this virtual economy that in 2009 the Chinese government banned the trading of virtual currency. This controversial move, while certainly affecting millions of users and reducing the billions of Yuan traded each year, may simply push the practice even further underground, and to other countries such as India.

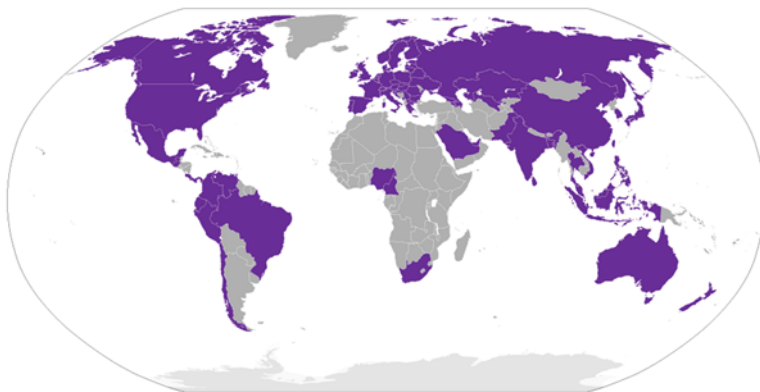
More generally, the regulation of online currency trading throws up a host of legal problems, many of which call into question the notion of ownership and property rights, as well as the law’s ability to define fictive universes (Humphreys, 2009; Lastowka, 2009). There is also the issue of virtual sovereignty, since the trading of virtual currency is not currently regulated by any kind of overarching legal body (such as the WTO). Commenting on China’s recent move to limit virtual transactions, Edward Castronova notes: “This action shows that at least one government is concerned about the way virtual worlds challenge its control of society,” adding “As virtual currencies take over more and more purchasing power, control over the

effective money supply shifts from the central bank to the game developers” (New York Times, 2009). Companies like Zeevex have started to provide digital “lockers” to act as online storage for an array of virtual currency and in-game items. Indeed, it is simply a matter of time before governments and international trade bodies themselves begin regulating what is a multi-billion dollar industry that transcends traditional geographic boundaries.

As we are beginning to appreciate, video games that enable online play are extremely social spaces that connect existing peer friendships and bridge together other gamers from around the world. In this sense, to think of video gaming as either isolating or anti-social is somewhat misleading. They are geographically expansive domains that can bring together players from diverse settings and backgrounds. Indeed, they often have implicit rules and expectations that require careful cooperation (Smith, 2007). “Clans” are just one example of both formal and informal gatherings of people that play together. These online social networks range in size from a handful of friends to groups with hundreds of members, from female-only versions to those that cater only for mature players. Clans usually have a leader responsible for organization, and can be found online with their own websites and forums. Clan versus clan matches are organized events and rely on team communication, coordination, and a careful division of gaming skill. In addition to role-playing games, clans compete against each other in “first-person” shooting games like the *Unreal Tournament*, *Call of Duty*, and the *Halo* series of games. Clans often have their own system of organizational ethics and expectations. One of the largest clans, “The Art of Warfare” (TAW) states on its website: “All orders must be followed, whether in combat, training, in daily TAW duty, and including the installation of communications software on the member’s PC. Orders are not up for discussion” (The Art of Warfare, 2009). The World Cyber Games, the largest gaming festival in the world, was held in Cologne, Germany, in 2008 and brought together participants from 74 different countries (Fig. 11.1). The total prize pot was \$470,000 dollars. Just like other sporting events, the cyber games involve celebrities, corporate sponsorship deals (such as Microsoft and Intel), and huge international audiences.

### 11.3 Assembling the Multiplayer: Microsoft’s Xbox Live Service

Originally available in 2002 on the first Xbox console, but relaunched again in 2005 on the Xbox 360, “Xbox Live” is Microsoft’s flagship online interface that knots together a portal for online gaming and content delivery. Based on two different types of membership (Silver and Gold – the latter costing around \$50 per year subscription fee), the service is certainly an example of a gigantic, networked megaengineering project that has transformed how console gamers play and communicate with each other across the planet. To date, over 30 million Xbox 360s have been sold. As well as traditional play, members can befriend one another, talk over microphones, send messages, and even communicate with video chats. As one of the cornerstones of Microsoft’s home-market strategy, Xbox Live is now part of the gaming experience for most Xbox users, especially those with broadband



**Fig. 11.1** Map of countries participating in the World Cyber Games 2009. (Source: [http://www.wcg.com/6th/history/countries/countries\\_search.asp](http://www.wcg.com/6th/history/countries/countries_search.asp)). The World Cyber Games, the largest gaming festival in the world, was held in Cologne, Germany, in 2008 and brought together participants from 74 different countries (World Cyber Games 2009)

connections. It is now rare for games to be released without some kind of online component. In addition, Microsoft has partnered with companies like Netflix to enable users to stream movies for a price.

Xbox Live has 20 million users from 26 countries across the globe, installed on over 30 million consoles – with 12 million units sold in the U.S. and four million in the U.K. alone. Instead of hosting players on centralized servers, Microsoft uses a client-based format whereby individual Xbox 360 consoles host each online match. Players are able to battle each other on a range of games, including the popular titles *Halo 3* and *Call of Duty 4*. Millions of people can be found playing at any one time. Each user is identified by their own personal “Gamertag,” which is a unique name capable of identifying the player across each game she or he plays. In effect, they are similar to the avatars of MMORPGs, and are now fully customizable (the player is able to modify and manipulate the appearance of their avatar – an invention lifted right from Nintendo’s “Mii”). These identifiers allow for the accumulation of player statistics, rewards, achievements, and reputation. For example, on Bungie.net players can view in extreme minutiae a track record of their performance in the game *Halo 3*. The website also reports that within the last 24 h over 750,000 players has battled on over two million matches. Microsoft recently attracted controversy by preventing users from stating their sexual preferences in their Gamertag.

Once the Xbox 360 is switched on, the player is automatically logged into Xbox Live. A pop-up window displays if the player has any new personal messages, and also shows the number of friends that are currently online. To take *Halo 3* as an example, once the game has been loaded (from either the DVD or hard drive) the player has the option of choosing from a variety of multiplayer game modes. After selecting the game type (for example a “team slayer” – where two teams fight each other on a single map), Xbox Live searches for people of a similar level of

skill and experience, and will then populate the map with these players – all of which are identified by their unique Gamertags. Within the game map, the player is able to communicate with team members through the microphone (which can get increasingly annoying – and can be muted), taunt the opposition (likewise), as well as befriending somebody that they get along well with. The seamless blending of human-to-human conversation and virtual gaming is the main attraction of Xbox Live, and goes a long way to explaining its enormous popularity.

Of course there is more to Xbox Live – including a “Marketplace” where older games can be purchased (for \$5–15), movies rented, television shows downloaded, and a range of other content that is available for a price. In addition, trailers and game demos can be downloaded to the Xbox 360’s hard-drive for free. The list of other features includes Windows Live Messenger, as well as upcoming services such as the use of social networking sites like Facebook and Twitter. Taken together, it is no underestimation to call Xbox Live a megaengineering project; it assembles together millions of human bodies, television screens, modems, wireless routers, digital content, messages, video chats, and innumerable technologies to deliver a single social space that is not quite virtual, and not quite “real.” Played on Earth: but not quite as we know it.

## 11.4 Assembling Controversy

Given any megaengineering project, from nature-changing dams to Le Hague nuclear plant in France, there are economic, environmental, social, political, and cultural consequences. This is the unavoidable result of altering the interface between humans and environments. Video game worlds are no different. As engineered products, distributed to millions (who are in turn connected together via meganetworks), they are never far away from public controversy. Linked to violence and criticized for racial and heteronormative representations, video games are inseparable from wider cultural debates and “wars” (Squire, 2002). To elaborate, the portrayal of women in video games is usually highly sexualized, and more often than not, women are absent from games altogether (Burgess, Stermer, & Burgess, 2007). Lara Croft from the *Tomb Raider* series of games and one of the most iconic female figures to have emerged on any platform, has all the stereotypical hallmarks of an industry dominated by masculine imaginaries and discourses (Cassell & Jenkins, 1998) as well as a more general tendency to privilege white users (Lovink, 2005, Jansz & Tanis, 2007). In 2008 a European Parliament report called for an end to gender stereotyping in video games.

But perhaps the situation is more complex than a first glance would admit. For although an abundant number of games released are wrapped and packaged in masculinist and belligerent narratives, there is the constant space for the subversion of traditional gender roles and expectations (Bryce & Rutter, 2003; Royse, Lee, Undrahyan, Hopson, & Consalvo, 2007; Walkerdine, 2006). At the start of this chapter I discussed the creation of on-screen “avatars” in games like *World of Warcraft*. These are virtual characters designed and manipulated from an inventory

of possibilities by the player. From choosing between races (elf or human) to deciding between different types of classes (warlock or warrior), a unique avatar is born on-screen, destined to be played by the gamer sat at home. This ability to perform as somebody else and in a different world is part and parcel of hyper-real experimentations in postmodern identities; “Indeed, virtual worlds may offer opportunities to recreate gender identities in ways that we have only begun to imagine” (Hayes, 2007: 47). Of course, it is equally likely that one’s virtual persona will be no different from their everyday one.

The gendered and racial dimensions of video games usually take a backseat to the controversy generated by violent gaming worlds. Graphic violence, murder, and on-screen crimes are frequently linked to the same activities off-screen, precipitating annual waves of moral panic by the public. In the U.S. and Canada the gaming industry is self-regulated by the Entertainment Software Ratings Board, which awards “ratings” to games submitted – from “early childhood” to “adults only”. One of the most recent controversies surrounded the release of the phenomenally successful *Grand Theft Auto IV* – a game series never far from criticism. The organization “Mothers Against Drink Driving” decried the “drunk driving” element to the game, where the main protagonist is able to become intoxicated and then drive recklessly (with accompanying blurred vision). Similarly, the video game *Bully* drew negative attention from educators, parents and politicians due to its (admittedly tongue-in-cheek) theme of bullying in an imaginary school. Perhaps the most controversial of all recent releases is the game *Manhunt* (and its sequel), in which the player is encouraged to perform stylistic and brutal executions. Despite the “violence for the sake of violence” motif of the title, whether or not there is a “spillover” into the real world remains a hot topic. The literature on violence and video games is dominated by a multitude of psychological studies, yet remains largely divided and lacks a clear consensus as to whether or not there exists a concrete correlation between video games and violence, and indeed whether such causation can be established beyond doubt. A range of other factors interfere with any simplistic claim:

... the research data don’t support the simplistic claims being made about a causal relationship between violent video games and real-world violence perpetrated by the broad range of teenagers who play them. More important, focusing on such easy but minor targets as violent video games causes parents, social activists and public policy makers to ignore the much more powerful and significant causes of youth violence that have already been well established, including a range of social, behavioral, economic, biological and mental health factors. In other words, the knee-jerk responses distract us from more complex but more important problems.

(Kutner & Olson, 2008: 190)

## 11.5 Assembling the Military Entertainment Complex

War is a megaengineering project that involves the massive mobilization of bodies, logistics, and communications, not to mention the dispersion of propaganda and the careful construction of spectacle. The so-called “War in Iraq” (and Afghanistan for

that matter) is a multi-billion dollar trans-national project that continues to drain resources from the U.S. and other countries involved in the occupation. It is difficult to imagine the management of a bigger event; the construction of nuclear power plants or irrigation schemes, while certainly complex, are largely limited to single sites or groups of sites. War on the other hand is multifaceted, emergent, unpredictable, and dispersed across a multitude of geographies. One of the geographies that the U.S.'s war has come to occupy most insidiously is virtual space. That is, video games have become enlisted in the ubiquitous 21st century "War on Terror."

Video game worlds are perennial ideological spaces. Whether racialized or gendered, it has always been difficult to step outside of their political milieu. Since the terrorist attacks of 11 September 2001, video games have become increasingly complicit in furthering the spread of dangerous neo-Orientalist spectacles (Höglund, 2008). To borrow a Lacanese turn of phrase, the War on Terror has become an ideological "quilting point" – a Master Signifier that organizes the representations internal to video game worlds around a dominant theme of a superior U.S. and a barbaric Middle-East. Of course, it is primarily war games that have been quilted with U.S. imperialism, but these are extremely popular genres. Consider the fact that war game *Call of Duty 4: Modern Warfare* (set within a generic Middle East landscape) has sold over 13 million copies to date. The War on Terror spectacle is by no means exclusive to video games. Everyday life is itself a militarized domain, shot through with mundane but no less pernicious hegemonic representations, whether on televisions or in the movies. But how did this situation come to pass? Leonard (2004) argues for a "Military-Academic-Entertainment Triangle" in which in the U.S. Army is itself responsible for the production of video games. Moreover, virtual space is not just an ideological product, but is engineered to serve as a "training ground" for soldiers:

The Defense Department has also been closely associated with games such as *Rainbow Six: Raven Shield* and *Socom II: U.S. Navy Seals*, utilizing each as a means to test and train military personnel in leadership skills. In 2003, the Army also signed a \$3.5 million deal with There Inc. to develop a series of virtual military theaters, including a virtual Kuwait City to train soldiers in a simulated attack on the U.S. Embassy there.

(Leonard, 2004: 3)

This unholy union is the subject for Halter's (2006) analysis of the cross-pollination between video games and the U.S. Army. The first-person shooter *America's Army*, while by no means alone in its on-screen orientalist depictions, is certainly the crystallization of imperial representation. Financed by the U.S. government (costing over \$7 million), developed by the U.S. Army and distributed for free download on the internet, the game was first released in 2002 and has had a number of updates since then. As the official website for the game advertises:

*America's Army* is one of the ten most popular PC action games played online. It provides players with the most authentic military experience available, from exploring the development of Soldiers in individual and collective training to their deployment in simulated missions in the War on Terror.

(America's Army, 2009)



Players can choose their Army role within the game, from an “automatic rifleman” to a “combat medic.” Like many games of ilk, the basic premise of the game does not steer far from the tried-and-tested formula of first-person shooter games. The difference with *America’s Army* is the level of realism and propaganda tied to the game. Where the bleed between reality and virtuality hits a high note is with the “Real Heroes Program.” The game incorporates a “Virtual Recruiting Station” where players are able to interact with the profiles of veterans of the “Global War on Terrorism.” Real soldiers’ biographies are available to read, videos can be streamed, and a range of real-life acts of bravery can be discovered. In addition, the America’s Army website features profiles of real-life soldiers playing the game, listing a brief blurb about their experiences. Quite where the distinction between real and virtual propaganda lies is difficult to obtain. Instead, the game is much more of a Möbius Strip, where divides like “inside” and “outside” are replaced by a looping continuum of information. The community of *America’s Army* players is part of a large and acentered assemblage: the “War on Terror” is waged across deserts, media stations, and PC screens.

Having explored this game in detail, I want to conclude this section by discussing war games more generally. It is worth quoting at length the following observation from Leonard (2004: 4):

War video games are no longer purely about training soldiers already enlisted; rather, they are about recruitment and developing future soldiers, while simultaneously generating support among civilian populations for increasing use American military power. Americans of all ages are thus able to participate collectively in the War on Terror and in Operation Iraqi Freedom, just as if they were members of the military. Their trigger happiness becomes a metonym for their happiness with American military efforts. With a little money and the switch of a button, the divide between real and virtual—between civilian and military, between domestic and foreign—is erased as we wage war through gaming.

The consequences of playing war games can spill out from the screen. Whether galvanizing racial stereotypes, ossifying Oriental depictions, rewriting history, or sanctioning the War on Terror, video games are far from simplistic child’s play. They contribute to a hegemonic “common sense.” It is not just that video games are alone in their imperial representations, but rather they assemble together to form a larger “Military Entertainment Complex.” It is precisely within the mundane, the implicit, and the common sensical, that ideological hegemony reveals its grasp. The renewed post-9/11 appetite for “good versus evil” narratives is often played out in video games through allegory, intertextuality, and subtle manipulation (Ouellette, 2008). In this sense, the military entertainment complex is an assemblage of overlapping megaengineering projects, from the U.S. Army’s reliance on the engineering of consent, to the game developers that depend on those profits reaped from Orientalist spectacle. The mere existence of video games produced by the U.S. Army should be taken as proof positive that virtual space is integral to an interlocking geography of war.

The War on Terror is now universally mediated through image and spectacle; the real is relegated to a second-order tier for those viewers and gamers in the West. Nowhere are the consequences of this more dangerous than in the depictions of

torture in video games. Here, not only is torture glorified, but its logics and rationales are far too simple and carefree. Torture is rendered down to an uncomplicated and binary algorithm, in which moral choices and complexity have been evacuated. As Sample (2008) argues, George W. Bush's "advanced interrogation techniques" are integrated into a gaming world in which successful torture is guaranteed: the enemy will always "cough up." Bringing in the work of Giorgio Agamben, Sample goes on to assert that torture in games like *Splinter Cell* and *24: The Game* naturalize a "state of exception" in which the state transgresses the law in order to preserve it. In this sense, the state of exception, as an already prominent feature of democratic nations, becomes legitimized in virtual space.

What is at stake then, are the ways virtual geographies engineered in video games come to overlay and dominate the real geographies of the world. From *Full Spectrum Warrior* and *America's Army* (both developed and funded by the U.S. Army) to *Call of Duty 4: Modern Warfare*, the Middle East is an ideological space of Oriental design and fantastical implementation, disseminated for public consumption and sanction of the War on Terror. Arabian cities are represented as maze-like worlds, where women and children are distinctly absent, and the only residents are gun-toting "enemies" intent on killing Americans: a state of "perpetual war" (Höglund, 2008). It is precisely these virtual topographies that must be combated, not with guns and bombs, but with ideas in the classroom (Leonard, 2004), and above all, a firm recognition that gaming worlds cannot be treated as innocent spaces.

## 11.6 Assembling Video Games

Assemblages, writes DeLanda (2006), are wholes whose properties emerge from the interactions between parts. Deploying a realist social ontology, DeLanda's work builds on the theory of multiplicity from Gilles Deleuze and seeks to bridge the gap between the "micro" and the "macro," or between individual and society. In particular, DeLanda is dismissive of any approach to ontology that defines identity through accounts of "interiority." This view is expressed most fully in the "organismic metaphor" whereby parts are defined by their internal relations to an all-encompassing and transcendent whole. But neither does the opposite atomistic logic hold true. In contradistinction to both types of reduction (to the whole, to the individual), assemblages must be thought as constituted *immanently* by variously mutating connections of self-subsistent component parts. Assemblages are thus the outcome of their relations of exteriority. Parts can be attached and reattached to other assemblages, and this addition of new parts will recalibrate the assemblage itself. In this sense, there is nothing "necessary" about an assemblage; it is instead a contingent and non-linear outcome of the capacities of component parts.

In addition, DeLanda defines the assemblage as located between two principal axes: one axis is the *role* that the assemblage plays from a purely material to a purely expressive or representational one. The other axis defines the processes underwriting the assemblage from stabilizing (territorializing) to destabilizing (deterritorializing) forces. A third axis defines specialized media that code and decode the assemblage,

**Table 11.1** Video game assemblages

Material	Representational
Geographies	Spatiality: perspective + freedom
Technologies	Architecture: ludological + social
Bodies	Discourse
Territorializing	Deterritorializing
Repetition: <i>old parts</i>	Difference: <i>new parts</i>
Software Code	

such as genetic and linguistic parts. In any such case, each of these is just another component of the assemblage and must be thought immanently and not as a transcendental structuring device. What I want to loosely retain and transform from DeLanda's complex blueprint are the material, representational, territorializing, deterritorializing, and coding axes, in order to position video games as hybrid assemblages. Notwithstanding the multitude of components involved in their production, this will involve (a) assembling the geography of video games in terms of material sites, bodies, and players (b) discussing the "worldly representation" of video games (c) arguing for the "repetitious" and "differential" nature of video games (d) discussing software code (Table 11.1). What I want to impress is the idea that engineering video games, specifically online ones, requires bringing together a potentially infinite number of assemblages.

The first part of this thinking involves an investigation of the material geographies unique to a video game's development. At the start of this chapter I mentioned the American video game industry which employs 250,000 people and is concentrated in California. More broadly, Johns (2006) demonstrates that the international video game industry is structured around three main global regions: America, Japan, and France. Emerging markets such as Latin America and Asia remain a marginalized consumer and producer market due to piracy in the regions. What began as a rich and heterogeneous landscape of developers and publishers is now concentrated in large firms like Electronic Arts, Activision, Ubisoft and Vivendi Games. This developer consolidation is a reflection not only of the drive for publishers' profit, but also an outcome of the massive costs involved in producing video games for today's high-end platforms. For example, 1982s Pacman cost \$100,000 to develop, whereas today the average Playstation 3 game costs an estimated \$15 million (BBC News, 2007). In addition to geographic sites, technological materialities are important for constructing any video game. Virtual worlds today are far larger and more complex than they were even five years ago, and this is directly tied to technologies available for development. Finally, the "affective" or embodied dimension is our last material component. As I have argued elsewhere, the player's body is always-already entwined in the experience of video game play:

Video game worlds expose bodies to events which produce a range of affects from fear to joy. Game space is increasingly an affective landscape, and once the player turns his or her attention to the experience of space, he or she is shaped not by the representations of space, but of the body's affective articulation in another world

(Shaw & Warf, 2009: 1340–1341).

The materiality of video games is, therefore, assembled by (a) geographies, (b) technologies, (c) and bodies.

Now we must turn our attention to the “worldly representations” of video games, the expressive assemblages that get by far the most attention in the game studies literature. Here again, these representational assemblage are constructed by three main component parts (a) worldly *spatiality*, (b) worldly *discourse*, and (c) worldly *architecture*. Briefly, the worldly “spatiality” points to the perspective and freedom of the virtual world. Worldly discourse covers the symbols, narratives, and ideological meanings animated by the world. Finally, worldly architecture incorporates the basic ludological structures or “rules” of the game, as well as the social infrastructure incorporated. Taken together, they provide an analytical blueprint for interrogating the complexities of virtual gaming worlds.

There are elsewhere discussions of spatiality in video games (Wolf, 1997). While I could elaborate upon a potentially infinitesimal typology of spatialities, I think it is most helpful to discuss spatiality in terms of the perspective utilized by the game, as well as the degrees of freedom available to the player. There are three main types of perspective: transcendent, mediated, and immanent. Transcendent perspectives are remote and detached. Pioneered by industry giant Peter Molyneux, the god-game genre of games such as *Populous*, *Syndicate*, *Theme Park*, *Dungeon Keeper* and *Black and White* fully exploit this Cartesian removal to engender the feeling of spatial omnipotence. Mediated perspectives are “third person” perspectives, likened to viewing a camera affixed a few feet above from the on-screen characters head, such as the *Tomb Raider* series of games. Finally, immanent perspectives remove the on-screen character altogether, and interaction between virtual space and the player is experienced directly. This is seen in first-person shooters like *Call of Duty 4*. In terms of degrees of freedom, each spatiality is positioned somewhere between a “smooth” and a “striated” typology (Deleuze & Guattari, 1987). Smooth spaces are rhizomatic, open, non-linear, and possess high degrees of freedom. The player is able to manipulate the world and make organic choices. In contradistinction, striated space is rigidly mapped, closed, and linear, possessing limited degrees of freedom. The player is bound by strict spatial axiomatics. Together, perspective and freedom construct the unique worldly spatiality of each video game.

Moving on to worldly discourse, we have just covered the neo-Orientalist imaginaries animated in war games. More generally, each video game contains an array of discourses, symbols, meanings, and ideological narratives that often reflect real-world counterparts. These can be implicit or explicit, and most studies tend to focus on gendered, racial, sexual, and violent elements. In this sense, video games can be “read” as types of texts (Klastrup, 2009; Lastowka, 2009) that can offer the player a deep and immersive textual realm and back-story (Krzyszowska, 2006). Nowhere is this more important than in role-playing games, from offline titles like *The Elder Scrolls IV: Oblivion*, to online worlds such as *Everquest II*. In either case, there is a discursive textual landscape that the player enters a relationship with.

The final component of worldliness is its architecture. This involves a discussion of two types of architecture within any video game: a ludological and a social one. In the first case, what are the rules of the game? What are the play mechanics?

What can the player do and not do within the virtual universe? In contradistinction to representational assemblages, ludological architectures are what enable activities of *play* (Frasca, 1999). Social architecture on the other hand, while certainly integral to the virtual world, is distinct to the extent that in-game chat and communication is not a *necessary* element of play. That is, in many online games like *World of Warcraft*, players can choose to form communities called “guilds.” Social architecture is extremely important in engineering virtual worlds and in-game cultural norms (Yee, 2009). As Chris Lena, producer of *Everquest* adds “You make real friends, real life friends, and you spend a lot of time with them. That’s emotional attachment, there are feelings and shared experience, exposure of self that creates really strong bonds” (Hayot, 2009). In this sense, the socially engineered components of virtual worlds lend themselves to long-term emotional investment by the player, both consciously and unconsciously.

DeLanda (2006) adds territorializing and deterritorializing components to enable discussion of the stability of the overall assemblage. In the context of video games, what kinds of forces and components are responsible for this stability and instability? What I want to discuss here is the role that innovation and creativity plays in the industry. Unfortunately, many mainstream hits are based on multi-million dollar sequels that seldom deviate from tried and tested formulas (*Call of Duty 1, 2, 3, 4, 5; Halo 1, 2, 3*). While this template often guarantees profit for developers and publishers, it means that video games are often accused of becoming increasingly “dumbed down” to appeal to the masses. Ontologically then, there is a great degree of *repetition* within the overall identity of any given video game. Opposing this stabilizing force is the risk-taking role played by creativity and difference. Deterritorialization involves a deviation from existing blueprints, and a truly novel approach to the construction and implementation of video games. Breakaway hits in this regard include *Super Mario 64*, one of the first games to make the leap to three-dimensions. Also with Nintendo, we can think of the unique “Wii Remote” (a controller with a built-in optical sensor) as revolutionizing the relationships between video games and bodies. In any case, each video game is constructed from an uneven assemblage of old and new components.

Linked to this idea of change and development is the process of “coding” as the method of structuring the entire video game world. This is the final assemblage, and one of the most important component parts of any video game; the underlying *software code*. The programming of the video game world effects practically everything, from the realism of the expressions depicted by on-screen characters to the amount of freedom available in creating game space. DeLanda (2006: 15) discussed genetic code and language as vehicles for synthesizing and coding the overall assemblage. However, we can also imagine software code as acting as both a limiting and enabling force. As technological assemblages have developed in sites around the world, the code used by designers has become more complex and advanced, with pushes towards adaptive Artificial Intelligence (Spronck, Ponsen, Sprinkhuizen-Kuyper, & Postma, 2006). Games that “learn” from character behavior add to the immersion and realism the player experiences. The difference between *Pacman* and *The Elder Scrolls IV: Oblivion* is worlds apart. From rat-infested dungeons to

enchanted forests, *Oblivion* rejoices in a radically open and rhizomatic network of spatialities enabled by its software code. Equally impressive, each *Oblivion* non-player character (NPC) is programmed with a unique set of needs and wants, giving rise to over 1000 personalities. Contextualized Artificial Intelligence allows the many actions and events within virtual space to converge in creative and complex ways. Gavin Carter, producer of *Oblivion*, talks about their revolutionary “Radiant AI:”

The “Radiant” part of the title refers to the way a character’s awareness isn’t strictly limited to a few hard-scripted objects or activities. It radiates out into the surrounding environment and beyond. They can choose to interact with anything they come into contact with based on parameters we set up when we create them. This includes having conversations with one another, sitting down and reading books, buying food and supplies from shops, farming, exploring, engaging in combat with creatures or one another, and a wide range of other activities.

In summary, we need to think of video games as types of worlds produced by the coming-together of a multitude of assemblages. In thinking of the worldly character of video games our attention seamlessly slips between the “real” and the “virtual,” or the material and the representational. Components are always-already bound together in the appearance and logic of a particular world. As Klastrup (2009) adds: “Worldness in general seems to be the sum of our experiences within the framework provided by the gameworld . . . of a fictional universe that you can actually inhabit and share with others, and of our experiences with it as particular game design, which both enables and restricts our possibilities of performing and interacting in and with the world.” And the geography of virtual worlds, like a distorted diorama, always reflects our social, cultural, and ideological imaginaries right back at us (Hayot & Wesp, 2009a).

## 11.7 Conclusion

It should now be clear that video games are massively engineered projects that defy reductive analyses. They have fundamentally changed the way we interact with the world, technology, and each other. Millions of people are playing thousands of games across hundreds of online worlds at any given time. Virtual communities are gossiping, arguing, battling and joking in clans and guilds across a labyrinth network of servers and cables; each player paying their monthly subscription fee to remain denizens of these digital universes. The video game industry is a sprawling behemoth that generates incomes for ICT graduates in Santa Monica as well as gold farmers in China. Upon trying to find a “center” to video games, we soon discover that they are centered assemblages built from a variety of component parts, both material and representational. Indeed, what is equally interesting are the ways that video games are always in a state of transformation. Not only is the relationship between player and game an unpredictable topology, but online worlds in particular are contingent upon the social interaction internal to their virtual universes. Without this social interaction subscriber numbers and therefore subscriber

fees would dwindle. In this sense, the player is much more than an end-user or passive consumer, but an active producer of capital in a continually transforming online world (Humphreys, 2009). In recognition of this, future virtual worlds need to move towards securing an integrative and democratic space for play.

Video games are fundamentally open assemblages defined by their relations of exteriority. Open to capital, open to ideology, open to social interaction, and open to a range of other components they are nonlinear systems plugged into a host of changing multiplicities. It is no exaggeration to call video games megaengineered projects. They are worlds without ends, domains without borders and rhizomes entwined with bodies, discourses, and the fabric of the Earth. As Hayot and Wesp (2009b) summarize: “. . . virtual worlds exert powerful effects on the ‘real’ world, producing among other things, shifts in capital and the development of markets to trade it in, the filing of lawsuits regarding the distribution of property or of virtual violence, and changes in the languages spoken by their users, to name only a few of the ways the virtual world has fed back into the real.” The continual bleed between the real and the virtual is likely to produce ever more hybrid worlds as corporate interests proliferate, economic activity accelerates, and the war machine dominates. But as active producers of these digital universes, the “game over” screen is far from inevitable for social and political justice. Whether resisting the military entertainment complex or racist and sexist representations, the first step is always the disassembly of a commodity that has always been *more than meets the thumbs*.

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