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Time War: Paul Virilio and the Potential Educational Impacts of Real-Time Strategy Videogames

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This essay explores the possibility that a particular type of video game—real-time strategy games—could have worrisome educational impacts. In order to make this case, I will develop a theoretical framework originally advanced by French social critic Paul Virilio. In two key texts, Speed and Politics (1977) and "The Aesthetics of Disappearance" (1984), Virilio maintains that society is becoming "dromocratic" – determined by and obsessed with speed. Extending Virilio's analysis, I will argue that the frenetic, ruthless environment of real-time strategy games may promote an accelerated, hypermodern way of thinking about the world that focuses unduly on efficiency.

Introduction

Video games have been a subject of significant interest lately in education. A new wave of momentum began when James Paul Gee's book, *What Video Games Have to Teach Us About Learning and Literacy* (2003a), was critically acclaimed, and was followed by a wave of optimistic studies and analyses. In 2010, a MacArthur Foundation report, The Civic Potential of Video Games, built on this energy, drawing on large-scale survey data to highlight the possibility that games that certain popular types of video games might promote civic engagement in the form of increased political participation and volunteerism. The hypothesis that video games, a perpetual parental bête-noire and the site of many a sex/violence media panic, might actually be educationally beneficial, has been gathering steam and is the preferred position of most educational researchers working in the field.

The task of this paper, however, will be to begin exploring the opposing view, namely, that some video games advance a kind of engagement with the world that is destructive and miseducative. In order to make this case, I will develop a framework originally advanced by French social critic Paul Virilio. In two key texts, *Speed and Politics* (1977) and "The Aesthetics of Disappearance" (1984), Virilio suggests that society has become "dromocratic," by which he means that it has become determined by and obsessed with speed.

In what follows, I will briefly lay out four aspects of Virilio's theory of speed: total mobilization, logistics, the implosion of space and time, and the disappearance of war. I will then proceed to link some of Virilio's theories to a particular type of game: real-time strategy (RTS) games. Real-time strategy games, I will argue, are an especially pure example of the kind of phenomenon that worries Virilio, and they fit well with his theory that war has, in a sense, disappeared into everyday life. Finally, I

will use this correspondence between Virilio's dromocratic elements and games to suggest that some kinds of video games may be miseducative. My suggestion in this regard is simple: if a video game immerses the player in a relentless quest for speed and efficiency, it could have an effect on the way the player views the world outside the game.

Virilio's Theory of Speed

In a diffuse range of works, French social theorist Paul Virilio has articulated a theory of an increasingly accelerated, speed-obsessed society. In this section, I describe what I see as four key elements of Virilio's theory, all of which have strong resonances in certain types of video games.

The first critical element of Virilio's theory of speed is what he calls "total mobilization," a term which he takes from German philosopher of technology Ernst Junger (1992). In a society of total mobilization, all citizens are mobilized for a comprehensive assault on nature. In the domain of war, this assault manifests as a "total war" in which every living being and object is a potential target of military value and in which forces of destruction are unleashed at unprecedented speeds. In times of peace, total mobilization manifests as a quest to harness as much of the world as possible. This harnessing has many forms, including increasing militarization (e.g. arms races, police militarization), neo-colonial and neo-liberal projects, and the rise of surveillance. The society of total mobilization, Virilio suggests, is a dromological society in that it is always attempting to surge forward faster and more efficiently.

A second element of Virilio's theory of speed is a particular emphasis on logistics. In his discussion of logistics in *Pure War* (2008), Virilio quotes Eisenhower: "Logistics is the procedure following which a nation's potential is transferred to its armed forces, in times of peace as in times of war" (p. 32). In keeping with this remark, logistics is not simply a matter of wartime supply for Virilio. Instead, as the total mobilization of dromocratic society proceeds, more and more social energy is given over to logistical demands. In peacetime, citizens are catalogued and prepared for economic and military action, bigger highways, airports, and railroad stations are built, systems of monitoring are devised, and resources are made ready for exploitation. In peacetime, Virilio argues, nations pursue, through the continual expansion of logistical demands, an accelerating "endocolonization" within which national resources are appropriated and harnessed in accordance with the needs of that nation's military/industrial complex. In *Speed and Politics* (1977), he comments:

> Dromocratic intelligence is not exercised against a more or less determined military adversary, but as a permanent assault on the world, and through it, on human nature. The disappearance of flora and fauna and the abrogation of natural economics are but the slow preparation for more brutal destruction. (p. 86)

Today, logistics is now a global phenomenon augmented by rapid information flows and a greatly enhanced worldwide trade network.

In concert with the advent of logistics, Virilio outlines a third aspect of the theory: the collapse of space and time. Virilio argues that the nature of space has been altered as war has developed. Military technologies, Virilio notes, have been altering space for a long time; the purpose of a fortress, for

example, is to occupy the high ground amidst a clear space, providing a terrain for surveillance against threats and channeling the threat onto the glacis, the gentle slopes that lead up to the fortification. In a significant sense, this early innovation represents a collapse of space; the technology allows for the enemies to be made more accessible and visible, as if they were much closer.

Obviously, the technologies allowing for the collapse of space have accelerated enormously in the centuries since. Today, drones provide surveillance and attack remotely from anywhere, and anti-aircraft missiles break the speed of sound. Computers can offer the user an instant window into the office of anyone with a broadband connection. In *Speed and Politics*, Virilio is preoccupied with the issue of nuclear weapons launched from orbital platforms, which can potentially cause total devastation before it is even possible for the other side to react. Virilio (1977) writes:

> The maneuver that once consisted in giving up ground to gain Time loses its meaning…Territory has lost its significance in favor of the projectile. In fact, the strategic value of the non-place of speed has definitively supplanted that of place, and the question of possession of Time has revived that of territorial appropriation. (p. 149)

As a result, war is, for the most part, no longer a war of space but rather a war of time. Instead of space buffers, which were rendered obsolete by distance-collapsing weapons, the great nuclear powers focused on time buffers. It was for the sake of time buffers, Virilio explains, that the superpowers gave up their most rapid space-based nuclear weapons, as there was a need to preserve some scope for human agency in the execution of nuclear conflict.

Today, the time war and the collapse of space manifest themselves less ominously than they did in the Cold War era, but the phenomenon that they have engendered, which Virilio calls "the state of emergency," has endured. The quick movement of assaults, whether they are of the nuclear, informational, terroristic or conventional military variety, necessitates a constant state of alert, in order to be ready to do battle in a time war.

Virilio's 1984 essay, "The Aesthetics of Disappearance," contains a fourth element of his theory: the disappearance of war. Virilio begins his analysis of disappearance with a history of the uniform. Early uniforms were generally bright colored, regardless of whether they were worn by the rebels or the official troops. The uniform served well in this regard for some time, but with the advent of better weaponry, armies adopted various shades of grey and green to maximize the merging of the soldier with the environment. Virilio (1984) comments: "The modern warrior is not only desocialized through the atrocity of the assault, he is also deanimalized; he, who once identified himself with the lion…is totally lost, he has become a phantom" (p. 85).

To a degree, the disappearance of the soldier would appear to be mitigated by the development of the tank and the plane, but Virilio argues that these vehicles constitute the next step of disappearance. At first, the soldier disappears into the body of the vehicle, and gradually, the vehicle itself disappears from view. Virilio argues that it is not accidental that modern jet fighters have the names they do—Mirage, Stealth, Phantom—as they are meant to disappear in order to avoid detection. Now, with the proliferation of drones, the unreliable and vulnerable body of the soldier is not even necessary within the aircraft.

The final step of disappearance, however, is for war to disappear into the fabric of society itself; the effect of total mobilization and logistics means that relevant targets are now found everywhere and extend beyond the traditional military sphere. War disappears into the way business is done, the way

political opinions are influenced, and, more generally, into the way people think and the way they see the future, into the shape of the things that are seemingly "bound to come about" whether we want them to or not. From Silicon Valley's "new disruptors" of the "sharing economy," to the multinational corporations that are open for business everywhere but headquartered nowhere, to the omnipresent architecture of surveillance, the world's slow and recalcitrant elements are to be bypassed, harnessed, or eliminated. Everything needs to be mobilized for the ongoing battle, and everyone needs to move with maximum efficiency to achieve their goals.

Speed: The Name of the Game

One of Virilio's key assertions, therefore, is that war has melted away into everyday life. In "The Aesthetics of Disappearance," he outlines the history of this development, but, as is the case with many of Virilio's arguments, the picture he provides is incomplete: we know that war has dissolved into society, but we don't have that many specifics about how it has done so. What I intend to suggest here is that one of the primary everyday locations that we find total mobilization, logistics, and the collapse of space is, in fact, the video game. Certain genres of video games are not only an engagement with war in the conventional sense (i.e. simulated conflict), but also in a much deeper, Virilian sense. In other words, I will argue that these games are a distillation of a particular way of thinking about the world: a way of perceiving reality and acting upon it that is potentially miseducative and harmful.

A caveat here is that this critique does not apply to all games. The connection I will make to Virilian ideas implicates a wide swath of games, especially real-time strategy games (which I will focus on exclusively in this paper), but also first-person shooters and massively multiplayer online role-playing games. Nonetheless, there is a "minority report" within video gaming that is anti-war in the Virilian sense. There are, for example, video games dedicated to bizarre, anarchic fun[1], disruption of oppressive everydayness[2], implicit and explicit critique of total war[3], and musical exploration[4]. The "indie" movement in video games has been gathering momentum and, as would be the case in any other media form, some of these countercurrents are important sites of resistance.

With this caveat in mind, we can turn to an illustration of how certain kinds of videogames have crystallized speed—and by extension, logistics, the collapse of space, and the war of time—within them. In order to see how this might be the case, however, it is especially instructive to examine one popular genre of games: the real-time strategy (RTS) game. Within a typical RTS (e.g. StarCraft), the player has to manage five basic interlinked tasks simultaneously: 1. Harvest resources, 2. Build buildings. 3. Produce military units. 4. Occupy territory while defending one's own territory against the enemy. 5. Eliminate the enemy by destroying their units and buildings.

Already, in this basic schema, one can anticipate the presence of the Virilian elements of mobilization and logistics, but the importance of these elements becomes even clearer when one

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[1] Cf. Noby Noby Boy. (2009). Tokyo: Namco Bandai; Spaceteam. (2012). Montreal: Sleeping Beast Games; Sportsfriends. (2014). Copenhagen: Die Gute Fabrik.

[2] Cf. Jostle Bastard. (2013). Montreal: Pippin Barr; Superbrothers: Sword and Sworcery. (2011). Toronto: Capybara Games.

[3] Cf. Defcon: Everybody Dies. (2006). Walton-on-Thames: Introversion Games.

[4] Cf. Soundshapes. (2012). Santa Monica: Queasy Games.

examines the game in detail. In the classic RTS scenario, you are the commander of a set of forces, and your task is to root out the Others, who are already working to defeat you in an unknown corner of the battlefield. The first layer of the game is a task of mobilization: you are allocated some workers and military units, who you must marshal respectively to harness and accumulate resources (e.g. minerals) and to explore and monitor the map. The second layer of the game is logistical: as time passes, it is necessary to produce more powerful military units in order to win the game. To produce these units, the player must develop new infrastructure (e.g. a tank factory) which requires more and different resources and, hence, necessitates more complex supply chains. The third layer of the game represents the collapse of space: the more powerful military units produced by the new infrastructure will enable you to explore and monitor the terrain more effectively and to kill the enemy more rapidly and at a greater range. Eventually, once you have built a complex supply chain and used it to accumulate a healthy stockpile of resources and military units, you can overwhelm the Others' base and destroy it.

Critically, all these mobilizations and logistical maneuvers unfold in a frenetic environment in which speed is of paramount importance (which is why the games are called "real-time strategy"). If you dither with your mouse and fail to deploy your workers and military units speedily, the Others will be accumulating military resources to later crush you. If you fail to surveil your screen adequately, the Others will sneak in and ambush you. If you fail to make production and exploration choices effectively, the Others will outcompete you. In other words, if you do not mobilize everything and everyone you have, set up complex and effective logistical chains, control your space, and above all, do it quickly, the Others will destroy you and the game will end. An RTS is, at its core, a frenzied, ever-accelerating gamespace which is in a constant state of implosion due to a continuous growth in the power and accuracy of weapons available to the player as well as improved capacities for surveillance that emerge over the course of the game. In sum, the name of the game is time war.

Learning and RTS Gaming: The Positive View

Since I want to make RTS gaming fit my Virilian narrative, one could object that I am sketching too negative a portrait of them. To reinforce my account, it may be helpful to look at the work of James Paul Gee, a proponent of learning in RTS gaming, to see what he thinks might be learned from these games. Gee offers a case study of the RTS Rise of Nations, and his description of it does not have the negative cast of my generic description of RTS games. In fact, Gee argues that by looking closely at Rise of Nations, educators can learn a lot about how to scaffold learning.

Gee (2003) begins his essay by acknowledging the difficulty of the RTS genre:

> I had not had good experiences with RTS games. I felt overwhelmed by their many details and by the pressure of competing in real time…I had watched my seven-year-old play the wonderful Age of Mythology and was stunned that he and his friends could play such a complicated game so well. Far from giving me confidence, these experiences just made me think that I was not suited for the micromanagement and on-the-spot decision-making RTS games demanded. In regard to RTS games, I was an "at risk" learner…. (p. 4-5)

In other words, at the outset, Gee felt that he was simply too slow for the demands of the RTS. What follows is an account of how Gee eventually learned to be fast enough to play the game competently. Gee focusses mostly on what an excellent job Rise of Nations does of supporting the learner to develop competence in a variety of domains through a mix of simplified game problems, structured tutorials, and unstructured but favorable-for-learning play environments. As far as his argument goes, Gee is right: Rise of Nations does an excellent job of scaffolding the player through a series of learning tasks. From a Virilian standpoint, however, what is more interesting is the way that Gee (2003) describes some of these learning environments:

> When you leave the tutorials and actually start playing, there is a pause key that will stop time. This allows you to explore what icons on the screen mean and think about what you want to do. When time is paused, your opponent(s) do not continue building and so you do not have to worry about falling behind. Furthermore, you can set the game at one of two easy difficulty settings (easiest and easy) that greatly decreases the pressure of time. On these settings, opponents move slowly and not always in the smartest fashion. (p. 23)

The player needs to become faster, but it is not easy to be as fast as one must be to play the game. Therefore, as part of the learning process, the game must allow you to control time to some degree or otherwise slow time. But as Gee points out, it is one thing to be able to succeed in an artificially favorable environment and quite another to be able to handle the fast reality of a multiplayer RTS situation, in which time never stops and in which one's opponents are as fast as they know how to be. Therefore, the game must offer additional support to get the player from the "slow time" beginner learning situation to the "real time" one. In the case of Rise of Nations, this consists of a set of skill tests, which Gee (2003) quotes at length:

> 1. Aging Madness – Age 2
> How fast can you get to Classical Age? Find out if your resource management skill is good enough.
> …
> 4. Raiding Party
> Take your bloodthirsty Mongol horde and pay a visit to some enemy towns in an exercise of micromanagement.
> …
> 5. Hotkey Handling
> Do you know your hotkeys? This is a test of hotkey knowledge.
> …
> 8. Whack the General
> How fast can you click your mouse? This is a test of clicking ability. (p. 27)

The exercises here are exactly what one would expect in terms of training people up for a time war game; there is a lot of focus on being adequately fast, but there is also a focus on logistics. For example, for a non-gamer, it might seem counterintuitive that the principal challenge of being a "bloodthirsty Mongol horde" in a video game is actually micromanagement (this would, no doubt, be news to the Mongols), but it fits well with the logistical emphasis of dromocratic training. In addition, it is notable that the training not only concerns in-game concepts but also involves a kind of physical dressage (a specific and rigid training of the body), to borrow Foucault's (1975) terminology from Discipline and

Punish (p. 166). Just as early troops rehearsed their physical skills to build automaticity on the battlefield, so too does the RTS player learn to increase his physical mouse clicking speed ("Whack the General") and automate his actions with hotkeys ("Hotkey Handling") in order to be able to boost his action-per-minute total.

Aside from Gee, few education scholars are interested in RTS games. Psychologists, however, have a significant amount to say about them, and there are several studies indicating that RTS and other real-time games may improve multitasking abilities (Greenfield, deWinstanley, Kilpatrick, & Kaye, 1994), performance on cognitive flexibility tasks (Glass, Maddox, & Love, 2013), and increase task processing speed (Dye, Green, & Bavelier, 2009). However, the most in-depth research program belongs to Mark Blair, a cognitive scientist who has examined the characteristics that distinguish higher and lower level players of StarCraft 2, a particularly popular and successful RTS. Blair and his collaborators (Thompson, Blair, Chen, & Henrey, 2013) looked at thousands of players and found that the primary differentiators between players at different ability levels were (in order): actions per minute, action latency (amount of time elapsed between looking at a new screen and taking action), gap between "perception-action cycles" (PACs), and overall number of PACs. All of these variables are helpfully integrated in the concept of the perception-action cycle (i.e. spot something on the screen and take action), which Thompson et al. (2013) document according to player ability level in the following chart (p. 19):

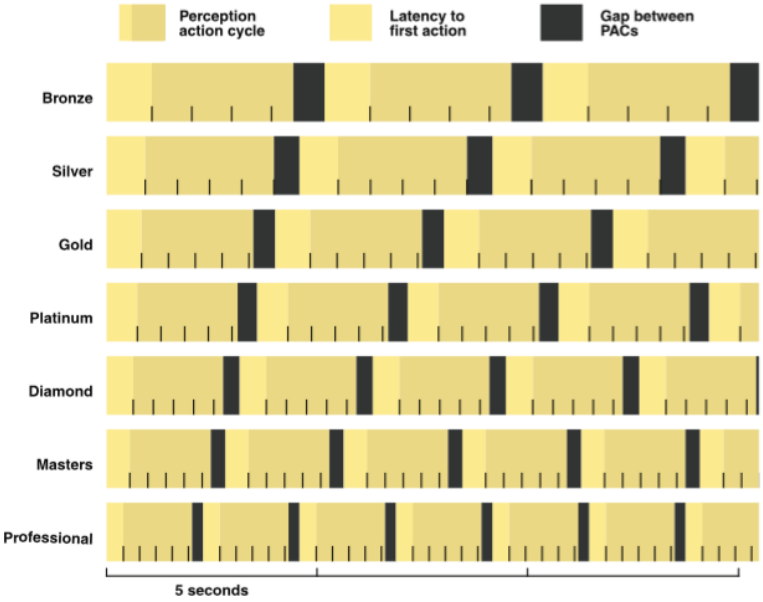

Figure 8. Perception Action Cycles (PACs). Actions and attention shifts for a typical StarCraft 2 player over 15 seconds. Each vertical line tic represents a single action. Notice that most aspects of the PAC become faster with an increase in League.
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Thus, according to this chart, low-level Bronze players are actually quite fast, performing three perception-action cycles over the course of fifteen seconds, but professional players are far quicker, managing six PACs in fifteen seconds. Surprisingly, this is actually an artificially conservative estimate of player speed, since Blair et al. do not count selecting a unit with a hotkey or moving the screen as an action. If one counts actions the way the game does (which simply aggregates all clicks, screen moves,

and keystrokes as "actions"), elite professional level players can manage up to 600 actions per minute when the game is at an intense juncture. Even for seasoned game players, it is difficult to understand exactly how fast this is.

Blair (2013) is excited about the potential of the StarCraft 2 environment (and RTS games more generally) to serve as what he calls "a new drosophila [fruit flies] for the cognitive sciences" (00:01). On Blair's argument, just as fruit flies allowed us to have an ideal laboratory environment in which to gain insights about genetics, so too does StarCraft 2 give us an environment to study learning and the development of expertise. These insights, Blair argues, could then potentially be translated from the fully controlled environment of StarCraft to complex real-world tasks.

Scientific American (2011), reporting on Blair's work, waxes enthusiastic about this possibility. No longer, they note, are we obsessing about video game violence and screen addiction. Instead, through Blair's research, we are following the "data trail that could finally unravel some of the major mysteries of the human brain," which may allow us to discover the "elixir that can morph us into successful multitaskers" (para. 7). They continue: "By comparing the techniques and attributes of low-level players with other gamers up the chain of ability, they can start to discern how skills develop—and perhaps, over the long run, identify the most efficient training regimen" (para. 25). This is then followed by a discussion of how such regimens could be useful in, say, emergency management.

The most immediate application of StarCraft skill, however, may not in fact be emergency management. If we think of StarCraft 2 as a learning environment, the most obvious direct transfer is likely to military operations tasks, perhaps followed by large-scale logistical operations (including emergency management) and then non-military multitasking jobs like air traffic control. But what are the possibilities for a more general transfer? It is a truism for psychologists that expertise does not transfer from one domain to another straightforwardly (Thorndike & Woodsworth, 1901), but Blair (2013) nonetheless thinks that some general insights about how one learns to be faster can be derived from StarCraft 2:

> …you come to any task with a set of cognitive capacities—a memory that works a certain way...a motor system that takes 50 milliseconds to respond once it gets the right information. And so those constraints are constraints that we all share, that we all bring to every single task. So while in one sense the expertise at StarCraft doesn't generalize, understanding how people become experts, understanding how the cognitive capacities are tuned…what comes first…in what order they come in…those kinds of things, I think, are more general… (pp. 49, 31)

In addition to Blair's comments here about tuning cognitive capacities, consider the literature mentioned previously which indicates that RTS gaming increases multitasking abilities and task processing speed. The fact that this work is garnering interest is not surprising; the potential applications for educational technology and training are clear. In the dromocratic society, we all need to be fast, capable of managing divided attention and making quick decisions, and the processes by which we might tune up our cognitive capacities for these purposes will be of great interest to government and business.

Learning Speed: RTS Games and the Arch of Experience

So, what do Gee's and Blair's accounts tell us about RTS gaming? Both are interested in the kind of learning that can happen in this environment: Gee demonstrates how the game carefully scaffolds players into its dromocratic environment, and Blair's work highlights the learning trajectories that players follow as they get faster and more efficient, climbing the game's echelons. Their arguments that some important learning happens in these games are completely successful, but at the same time, these accounts indirectly highlight two other conclusions: first, they validate my Virilian contention that these games are all about training up speed and efficiency; and second, they indirectly highlight a lack of interest in the possibility that what is being learned in these games is problematic.

This latter possibility is one we should take seriously. As Dewey (1938) famously noted in his "arch of experience" comment in *Experience and Education*, "…the principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" (p. 35). So, on this argument, how might these games be modifying our experience? When we pass through the arch of the RTS gameplay experience, how might we change for the better, or for the worse?

This is a much larger question than can be resolved definitively here, but for one initial stab at the answer, let us return to Virilio's argument in "The Aesthetics of Disappearance," which asks us to pose the following question: if war has been engaged in a disappearing act from its conventional theatre, where has it gone? Virilio argues it has snuck into many nooks and crannies of everyday life, but, as I have argued above, one place where we find it to be particularly present is within certain kinds of games. From a Virilian standpoint, an RTS game in particular is a concentrated time war experience, a sort of pure distillate of the "progress" of speed.

If Virilio is right, what does it mean for education that war has, in a sense, diffused into some games? As noted above, the most obvious educational answer relates to military training and logistics and mobilization-heavy environments. Virilio recognized this, noting in Desert Screen (2002) that the virtual space has become a critical theatre of modern war, in which the disappearance of a stealth bomber from a computer screen is far more important than any disappearance in conventional reality. If psychologists are right in their contention about transfers from RTS gaming to other complex and rapid virtual multitasking environments, RTS gaming could be an excellent preparation for the highly virtualized environments of contemporary war. However, beyond saving the military some training money, this does not matter very much. The military will train people for tasks in the virtual conflict space regardless of anyone's gaming habits.

My more important contention is that time spent in a virtual environment like this could serve as a rehearsal for the many current incarnations of the tasks of total mobilization, logistics, and time war that can be found in post-industrial capitalism. If success in the current order is about the relentless pursuit of speed and efficiency with a dash of imperialism here and there, RTS gaming is an excellent preparation for the kinds of exo- and endo-colonial tasks that the neoliberal order offers its successful members. A great deal of energy has been spent worrying about the effect of violent video games on violent impulses, but the systematic dromocratic training provided by RTS games and other similarly speedy genres could have similar worrisome effects.

In order to see how this might work, let's consider a schema we see in many strategy games: core vs. auxiliary game objective. A core objective is one that must be attained to win a particular game

scenario (e.g. capturing a large city or a bridge), while an auxiliary objective (e.g. capturing a smaller city) is one that confers a bonus. When playing within the constraints imposed by the game, it is important to stay focused on achieving one's core objectives quickly above all else. Auxiliary objectives can also be targeted if they can be obtained in a way that is congruent with achieving the core objective, but otherwise should simply be bypassed and ignored.

Academic contexts, and most other work contexts, are slower-moving than strategy games. Nevertheless, it is easy to see how these efficiency maximization core/auxiliary schemas can be applied to work. In the case of Canadian academic institutions, to take one of many possible workplace examples, the core objectives are getting substantial amounts of research funding as quickly as possible while obtaining an average or better level of student satisfaction. Missing either of these, particularly the first, can cause you to lose the game scenario, so to speak. By contrast, spending any time beyond the absolute minimum working with students or offering one's time in departmental service tasks are auxiliary objectives. Of course, strategy games are far from the only element of our culture that nurture this particular kind of dromocratic thinking, but because of the way they crystallize it schematically and make a virtue of it for its own sake, they are a good place to learn it.

In other words, as Gee points out, games are often startlingly effective educational tools, and this is precisely the problem. They train us up into ways of thinking that, while effective in some contexts and for some purposes, are also quintessentially modern in the most problematic sense of the term. Specifically, many philosophers of technology working in the Heideggerian tradition (Borgmann, 1984, 1992; Dreyfus, 2002; Ellul, 1964; Heidegger, 1977) have suggested that there is a particular modern way of thinking that reduces everything we see around us into a resource to be harnessed. Heidegger scholar Michael Zimmermann (1977) writes, "To be capable of transforming a forest into packaging for cheeseburgers, man must see the forest not as a display of the miracle of life, but as raw material, pure and simple." (p. 79) Real-time strategy games, and some other types of games as well, teach us to see and experience the world in exactly this way. Everything is just a stock of raw material for our purposes, and we must work to ensure that these purposes are achieved as quickly and efficiently as possible.

A Key Objection

This claim about how video games affect the way we see the world is speculative, and there are a number of challenges that could be made to it[5]. Most significantly, just as we often question whether experiences of simulated violence have any effect lasting effect outside the game, we could also question whether experiences of speed have any such effect.

Let us begin with the responses to the question of simulated violence, since it is much more carefully studied than speed. One familiar response here is to contend that, in keeping with Dewey's "passing through the arch of experience" concept quoted above, experiences of in-game violence do, in

5 Reviewers of this manuscript have, notably, questioned the coherence and pertinence of Virilio's theories. While I have some sympathy for this objection re coherence, I will not address it here. As far as pertinence goes, Virilio's ideas have been highly influential in the analysis of video games (cf. Crogan, 2011; King and Leonard, 2010; Scully-Blaker, 2014; Wark, 2007). Crogan's Gameplay Mode is a particularly important analysis and is a major inspiration for this essay.

fact, transfer to the world outside the game, at least to some degree. This seems to be the majority view amongst psychologists now. In 2017, an APA panel (Calvert et al., 2017) drew the following conclusion:

> Based upon our review and examination of the literature directly addressing violent video game use, the APA Task Force on Violent Media concluded that there is an effect of violent video game use on aggression. This effect is manifested as an increase in negative outcomes including a composite score of aggression, aggressive behavior, cognitions, and affect, and a decrease in positive outcomes such as pro-social behavior, empathy, and sensitivity to aggression. (p. 141)

There are, notably, legitimate reasons to doubt this conclusion. First, there is dissent about this finding within the literature itself (including at the level of meta-analysis), and there are also legitimate critiques that many of the studies that have been carried out lack ecological validity (i.e. are weakened because of the excessive artificiality of the lab setting) and suffer from other methodological weaknesses (Breuer et al., 2015; Calvert et al, 2017).

A more compelling reason to doubt the hypothesis that violent video games cause violent thinking/acts, however, is that the meaning of in-game violent acts cannot be interpreted straightforwardly. Although there is a lot of scholarship on this question (McCormick, 2001; Waddington, 2007; Wonderly, 2008; Schulzke, 2010; Tillson, 2018), Miguel Sicart has made this point in a particularly compelling way, especially in his book, *The Ethics of Video Games* (2009). Sicart argues that many analyses of video game violence tend to be concerned with what he calls the "procedural gradient of abstraction," by which he means the immediate inputs and outputs which the game design allows the player to engage with. For example, we could say that, because a given game allows for and rewards violent and aggressive acts (e.g. getting some gold for killing a sea monster), it promotes that type of thinking and action in the player's subsequent real-world actions. A more sophisticated analysis, however, considers what Sicart calls the "semantic gradient of abstraction," in which the player brings their own values and interpretive capacities together with the game system in order to construct an overall interpretation of the game.

One example that Sicart (2009) considers is Manhunt, a game that is horrifying on the procedural level: it demands that players kill enemies in the most gruesome way possible (e.g. strangling them with plastic bags, beheading them with machetes, beating them to death with crowbars). Yet despite Manhunt's graphic and disturbing content, Sicart argues that it potentially creates an interesting ethical situation for players by virtue of forcing them to commit this violence. Sicart comments (2009), "By creating a game world with a set of rules and a level design that limits the player's choices, Manhunt creates an ethical experience" (p. 52). Although the player's immediate experience within the game is one of gruesome simulated violent acts, Sicart (2009) argues that a mature player's overall interpretive understanding will be quite different: "[she] will understand that the game is actually designed to make the player enact an unethical experience, showing that there is no fun in committing these acts, but rather mirroring the lack of morals and the desperate situation of the main character" (89).

Although I have serious doubts about whether the majority of Manhunt players would actually draw this type of reflective conclusion from the game, I believe that the Sicart's overall point here is correct: we must separate our immediate actions as players of games from the overall interpretations that we construct about particular games. Violent acts within a game do not necessarily translate to an overall valorization of violence. In fact, I led a research team which tested this question empirically

using Defcon: Everybody Dies, a nuclear war simulation discussed by Sicart that is violent on the procedural level (the player causes millions of simulated deaths) but which is intended to be strongly anti-war on the semantic level. We found that although this message was interpreted less straightforwardly than we would have anticipated, participants nonetheless absorbed the game's overall (semantic) anti-violence message even amidst the game's procedural violence (Waddington et al., 2013).

Beyond these arguments, there are several others that can be applied to mitigate the standard concerns about videogame violence. From a utilitarian standpoint, one could point out that any theoretical costs in terms of possible increased aggressiveness from video game violence have to be weighed against both the potential cathartic benefits of gameplay as well as the pleasure that people derive from playing these games (McCormick, 2001; Waddington, 2007; Tillson, 2018). Furthermore, extending Sicart's argument, one could argue that many ostensibly violent video games are not really about violence at all: at least in terms of how they are experienced by the player, they are simply about a challenging and engaging play experience. For example, it is difficult for me to believe that when I blast away at some animated sea monsters that I am somehow having an experience that will make me a more violent person or that I am committing acts that are meaningfully parallel to real-world violent acts. Within the magic circle of the game, the acts that I undertake cannot be interpreted without reference to my experience of them, which, in the case of the sea monsters, is simply as ludic obstacles that I am challenging myself to overcome.

Keeping in mind all of these objections to the psychological analysis of video game violence, we now return to the case of the experiential impact of speed in videogames. First, we can ask the question as the psychologists do: does the environment of speed and acceleration that we find within an RTS game translate to the world outside the game in any kind of way that we might measure in a laboratory? Obviously, psychologists aren't interested in looking into this question in the same way that they have been looking into the causal link between videogame violence and aggression. However, as I noted above, psychologists have found not only, per Blair, that we see a lot of learning to be speedier within RTS games, but also that learning these games has an impact on real-world speediness, including cognitive flexibility tasks (Glass, Maddox, & Love, 2013), task processing speed (Dye, Green, & Bavelier, 2009), and multitasking (Greenfield, deWinstanley, Kilpatrick, & Kaye, 1994). From a Virilian standpoint, this is a significant outcome, since it shows that, regardless of any interpretation of the game that players construct, they are at least potentially being made faster and more flexible, which is what the society of total mobilization requires. The more important question however, is this: how–implicitly and explicitly–are the players are interpreting the experience of playing RTS games? What really happens when players pass through the arch of experience in a game of timewar?

There are some important reasons to believe that speed features prominently in the RTS play experience, arguably more so than violence in the parallel case of shooter games. First, if we look at the case objectively (i.e. not from the standpoint of the player), virtual speed translates more straightforwardly to real-world speed than virtual violence does to real-world violence. In other words, speed is "really there" in the game in a way that violence is not. For example, if I commit virtual murder in Manhunt, people are hesitant to call me murderous, but if I am quick in in an RTS game, few are hesitant to call me a fast decision-maker.

Second, if we look at the case subjectively, while (as pointed out above) typical players of violent video games may not interpret themselves as really being violent in their actions (Jansz, 2005; Salen and Zimmerman, 2004), there's a much stronger case to be made that RTS gamers may find speed and a

drive toward efficiency maximization to be one of the primary interpretive qualities that gameplay has. Consider the following comments from a popular RTS gameplay guide (Keast, 2010); the guide's author comments:

> All RTSes are about speed, first and foremost…In every RTS, time is the most valuable resource. Before you even think about gold, or minerals, or lumber, start thinking about time as a resource you're continuously losing. Every instant you're not doing something you're digging further into a hole. If your opponent is faster than you, he's higher up in the hole. It doesn't matter how clever you are, or how carefully your base defenses or army composition are if you're slower than your opponent.

Given Blair's findings discussed above, it is not surprising that studies of StarCraft players also indicate that they spend substantial time and energy thinking about how to increase their speed (Kow and Young, 2013; Yan, Huang, & Cheung, 2015). In one study (Yan, Huang, & Cheung, 2015), which included both expert and novice players), a player discusses the fact that even when very little is going on in the game, she still "spams" useless actions in order to prepare herself for the speed contest to come:

> Something that really made me play better was spamming, getting your hands warm and fast will make it possible in the later stages of the game for you to multitask and just play a lot faster. Also try tapping between armies, scouting units, bases even if nothing is really going on. The worst thing you can do is just to sit and watch ur base with 0 APM [actions per minute] when nothing is needed to be done. (p. 3715)

In other words, good players realize that they must never, ever, be idle, even if there are no useful actions to take. In keeping with this, as players increase in their StarCraft expertise, the number of these warmup actions tends to increase. The overall goal, one player remarks, is total automaticity (Yan, Huang, & Cheung, 2015):

> You just have to worry about doing the same thing every time, regardless of the situation, so it becomes muscle memory and a reaction. … whatever you're doing needs to be consistent every time so it can be written in your memory and you yourself will become consistent. (p. 3718)

While it is always possible to interpret a game against the grain, there is evidence to indicate that a commitment to becoming faster and the overall need to be fast is a substantial experiential element of the RTS experience.

Thus, to sum up, we have several key claims: 1. Objectively, speed is much more straightforwardly present in RTS video games than violence is in "violent" video games. 2. Subjectively, RTS video games are experienced by players in a way that emphasizes speed very strongly, whereas violent video games are often not experienced as violent. Together, these two claims add up to a third claim: 3. The case for seeing RTS video games as experiences dominated by speed and acceleration is as strong as, if not stronger than, the case for seeing first-person shooters as experiences of violence.

All of this, however, still does not mean that a virtual experience dominated by speed and acceleration will necessarily translate into an implicit or explicit real-world commitment to the value of speed and acceleration. Yet the possibility that it will is a hypothesis worth thinking about. Above, I

argued that the case for seeing such a translation is, on an a priori basis, stronger than the case of violence, which is weakened by the fact that in-game violence may not be interpreted and experienced by players in the straightforward way that psychologists sometimes think it is. If it were true that certain game experiences help us fetishize speed and acceleration, it would be a worrisome outcome, particularly for those who oppose neoliberal capitalism. Just as we thought of the early progressive schools as 'laboratories for democracy,' we might think of certain types of video games as 'laboratories for dromocracy.' In other words, we can see them as places that teach us to see everything as a resource, to be relentlessly active, and to maximize efficiency at every turn. In Virilio's terms, they are a concentrated time war experience: a place in which we can locate the disappearance of war into everyday life.

A final objection might be to say that my suggestion that some video games train us up for life in an accelerated world is a speculative suggestion in a contentious space. It is certainly speculative, but I would maintain that it is substantially more circumspect than some of the claims made by some advocates of educational gaming. Historically, many educational technology movements have been backed by considerable hype and weak empirical evidence (Cuban, 2001), and video games in education are not an exception in this regard (Young et al., 2012). At a recent Games and Education conference, as I watched one charismatic speaker after another deliver (highly efficient) three-minute speeches about the need to transform students' educational experience through gaming as soon as possible, I felt the tremendous energy surrounding the prospect that games might deliver powerful educational benefits. Amidst this enthusiasm, and in the increasingly ruthless neoliberal context that most of us inhabit, I simply maintain that it is worth thinking through certain potential costs as well.

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