FCJ-202 Simulated Wars, Virtual Engagements

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Abstract: Digital environments that simulate operating environments have often been used by practitioners to develop complex skill sets. Simulation training not only enables them to become proficient in the various actions, movements and procedures but also allows familiarity with a range of different scenarios and contexts. Such training is thus often viewed as an inexpensive, safe and effective alternative, which can allow what was learnt to be transferred and applied to 'real world' situations. This paper examines the simulation experiences of soldiers learning to become tank operators. We analyse how, through repetitive interactions with these digital environments, tank operators have learned various habits that shape their actions and motor skills, but also their habituated bodies to think, react and behave in relation to the given combat situations. Through interviews with tank operators from a modern military and from observations of their simulation training, we point out the limits of a phenomenological approach by showing how the virtual, in the Deleuzian sense of that term, forms the necessary backdrop for the acquisition of skilful habits. Thus, this paper establishes that there is an inherent connection between learning and habits that goes beyond representation. Through the Deleuzian understanding of the virtual and its relation to a Ravaissonian understanding of habit, we argue that learning and the gaining of habits are necessarily experimental processes that would produce infinite permutations within our various interactions. This will not only allow us to productively engage with the virtual but also facilitate us to mobilise learning to go beyond the limits placed by representation in all of our interactions.

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Pixelated Camouflage

1 The television personality, Richard Hammond, was offered a rare glimpse into the life of a tank operator in an episode of Richard Hammonds' Crash Course, which featured him training on the U.S. Military's Abrams Tank. Immediately after his first few simulation training sessions as a tank gunner, Hammond exits the tank simulator and exasperatedly remarks, 'I... see why you practice it in here ...that was really hard!'. In reply, the gunnery sergeant quips 'Yes, if we would have done that on the [gunnery] range ...somebody would have gotten fired... That is why we spend a lot of hours in here' (Mesirow, 2013).

2 We have here an environment in which habits are learned and relearned. With so-called military precision, simulators enable the learning of occupations to become second nature. Such an environment, with its newness and the efforts it extracts, necessarily invites mistakes, but these do not involve the same costs nor risks as they would in a non-simulation environment. (It is the isolation of practitioners in a specific learning environment in order to enable the development of bodily habits that is the principal interest of this paper). Much has been written in recent years in the humanities and social sciences about the precise nature of digital environments and the common sense distinction between 'virtual' and 'real' environments has been closely scrutinized. Studies of virtual reality technologies (Murphie, 2002), interactive media design (Fritsch, 2011; Nash, 2012), videogame design (Ash, 2012; Walther, 2011), digital media experience and aesthetics (Chesher, 2001) and Internet gaming addiction (Cook, 2009) have spoken to a dissatisfaction with the dominant representational frame, which attributes reality to the 'real' environment and relegates the virtual to a simulacrum. Conventional representational approaches tend to 'fix relations according to traditional patterns', and to reproduce the phenomenological assumption that digital environments are structured by a human subject and its experience of that environment (Murphie, 1996: 83). As Murphie highlights, phenomenology has merely enhanced 'human subjectivity', but does not fundamentally question the naturalism of a pre-given subject/ object relation (Murphie, 1996: 90).

3 In contrast, non-representational approaches, drawing primarily from the work of Deleuze, emphasize the processual production of subjects and objects within material environments, through the mobilization and assemblage of forces that are immanent to that environment. As Dewsbury (2015: 40) suggests, the individual 'secondary to its emergence within situated processes, such that an individual cannot be said to pre-exist the actions that define it'. And, as numerous commentators have insisted, this is as true of digital environments as it is of non-digital

ones. This is not to suggest that there are not distinct modes of relational becoming within digital environments (see Chesher, 2001: 284).[ ] Indeed, with the improvement of digital technologies, relational becomings might be generated that are not available outside of digital technologies. For example, a digital simulation of fictional scenarios might be able to generate certain becomings and relations that cannot be brought out in other contexts.

4 While these themes have become familiar territory to readers of Fibreculture, it is the renewed interest in habit, particularly since the recent (2008) translation of Felix Ravaisson's Of Habit [1838], that calls us to rethink the value of non-representational approaches to digital technologies and particularly the embodied practices these technologies imply. The translation into English of Ravaisson's essay on habit has inspired a re-examination of habit as a non-subjective force commensurate to the non-representational framework used to explore the implications of digital technologies. Emphasis in such accounts has been on the ontological primacy of habit with respect to the subjects in which it is embodied (see especially Dewsbury, 2015 Hynes and Sharpe, 2015; Sharpe, 2013). The challenge this poses to the human practice of evaluating good and bad habits (Malabou, 2008; Carlisle, 2010) and to the Kantian tradition of devaluing habit as a mere mechanism that threatens the autonomous subject (Carlisle and Sinclair, 2008b) have also been key points of focus in this renewed attention to habit. As we will argue, Ravaisson draws on both strands of the tradition of conceptualizing habit in order to offer an account of habit as, essentially, a potential for change. The first of these traditions is the more historically negative view of habit, which views habit as a mechanism that stultifies autonomy by dulling the passions and consciousness. The second of these understands habit as the development of grace; drawing on a long line of thinkers from the Western philosophical tradition, from Aristotle to de Biran, habit is viewed as the possibility of organizing potential for the smooth adaptive functioning of the organism.

5 This paper examines some of these issues through the context of military simulation training. A tank simulator as the name suggests is a system built to simulate the function and operation of a tank. There are generally two main components to a tank simulator. First, the internal cabin of the tank is recreated to be as similar as possible to the actual tank. The equipment, the dimensions as well as the electronics of the tank are recreated to place the tank operator in an environment similar to the one in an actual tank. Second, the external component of the simulation is a digitisation of elements such as the terrain and the possible enemies that they might encounter in battle. Even factors such weather, windspeed and temperature can be adjusted to prepare these tank operators for the conditions they might be facing. Both of these simulated components are in sync to the operations of the tank crew, for example as they turn the turret of the tank, the digital images will match to those exact movements. Similarly, if enemy fire hits the tank, the tank electronics will consequently be affected by the simulated damage taken. In summary, the objective of the simulation is to replicate an environment as close as possible to the one in an actual tank.

6 Drawing on interviews with soldiers trained in these digital environments in the process of becoming tank operators, this paper argues for a reconceptualization of our interactions with digital environments, specifically in relation to learning and experimentation.[ ] Through the continuous and repeated interactions with such digital technologies, we demonstrate that the military is not only able to bring about bodily or perceptual habits but to produce the very disposition and tendencies of the soldier. Soldiers not only change what they do but change what they become, and these are processes that occur less through the conscious intentionality of the subject then through the development of a bodily intelligence. The military context provides an especially fascinating lens through which to understand the role of digital technologies in the learning of bodily habits. The need for simulated military training to be accurate – for the learner to get it right – means that the process of learning tends to be framed in especially representational terms. Yet, even within the domain of so-called military precision, the inadequacy of representational modes of understanding is revealed, not simply as a failure of understanding but as a potential. In grasping the shortcomings of a representational understanding of the world, we can begin to appreciate the development of bodily intelligence as the actualisation of a potential for change, a process that is all the more interesting for not being utterly precise. As Dewsbury suggests, 'habits are not just an immediate enterprise but are the significant means by

which we shape who we are to become, and how we have become who we are' (Dewsbury, 2015: 30). This paper then explores habit as an immersion in and a reconfiguration of the virtual. Such an exploration rethinks learning as an experiment rather than merely adequation to the given.

7 Undoubtedly something needs to be said about the military context in which this learning takes place. Surely we should be more critical in our use of Deleuze and Deleuzian thought in the military context lest it simply dress up majoritarian ways of operating with a thin veneer of post-structuralist sensibility. In this, do we not run the risk of evoking the IDF Brigadier-General Aviv Kokhavi's now infamous comments about, "'inverse geometry", which he explained as "the reorganization of the urban syntax by means of a series of micro-tactical actions"' but which in fact meant surprising Palastinian families by arriving unannounced through lounge-room walls (Weizman, 2006)? However, in our analysis of tank simulation and learning in this paper, we would insist on the relative openness of questions of good and evil. That is, we would be reluctant to pre-judge the learning that takes place as necessarily becoming-reactive (see Rothfield, 2013). If we are to take seriously the challenge to pregiven moral frameworks that a Deleuzian ethics implies then it also implies that the quality of becoming cannot be cast as necessarily reactive even when it involves a modern military and a soldier's supposedly diminished will inside this system. The supposed constraints of will in this environment are precisely what makes this such a fascinating case study.

Tank straight ahead: Identified!

> I can now detect the enemy quickly compared to when I first started simulation training, where I didn't even know if that object is a target or a friendly tank. After the simulation training I know how to identify the targets. Moreover, with this simulated terrain, it helps me to understand what needs to be done for a particular terrain.
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> 8 – Tank Operator, Lance Corporal Owen

9 A soldier's ability to recognise their target and differentiate between friend and foe is one of the crucial elements that allows them to function in their role proficiently. But recognition does not stop at differentiating friend or foe; a soldier would also need to recognise and make sense of their surrounding terrain, operating environment, equipment or corresponding movements, allowing them to know where they are, which direction to survey and subsequently how to attack or defend. We have commonly understood the process of recognition to occur in the following fashion: firstly, what is produced by computerised systems and viewed through the sighting system is a fixed digital image of an enemy tank; this same image is then re-presented inside the mind of the soldier; the soldier is then tasked with the recognition or non-recognition of this image. The philosophy of Deleuze allows us to appreciate this process in a different way; one that is far more useful in understanding how this practice of target acquisition is qualitatively transformed. It is not simply a case of getting 'better' as in 'more efficient'; rather, there is a change in the transcendental conditions that in turn produces the transfiguration of the soldiers' bodies when learning target acquisition.

10 Yet, as Deleuze has famously argued, such an image of thought takes as given what is yet to be (but needs to be) explained (Deleuze, 1994). This dogmatic image of thought as recognition inadvertently operates in unison with 'common sense' and 'good sense' to produce a mode of thinking that is naturalized as thinking* per se*.

11 Deleuze suggests that it is common sense that allows the agreement between all the various faculties – sensibility, imagination, memory and thought (Deleuze, 1994). It is common sense that tells us that the object we have encountered 'outside' is the same object produced within our minds, through the 'unity in the harmonious exercise of the faculties' (Hughes, 2009: 72). It is common sense, then, that allows the gunners to recognise that it is *the same* digital image that they have sensed, imagined, remembered, conceived, and so forth. Common sense presupposes and affirms the self-sameness of the subject, providing the coordination among the faculties that ensures that the subject recognizes the object of the encounter (Deleuze, 1994). It is 'good sense' that allows us to assign objects into various categories and thus to organise our experiences (this is a rock; this is a tank). We call it 'good' sense because without it we would remain disorientated, unable to tell the difference between the objects we encounter (Colebrook, 2008). Common sense and good sense thus work in conjunction to provide us with a means of recognition via the four

pillars of representation: 'identity, analogy, opposition or resemblance' (May, 2005: 78). In that instant when the digital image reappears for the tank operators, this dogmatic image of thought would operate as such: 'It looks like a tank' (resemblance, supported by good sense's distribution into categories); 'it is not an armoured personnel carrier, they are smaller' (opposition); 'it is a tracked vehicle like a tank, though' (analogy); 'but it is a tank, it is the same enemy tank I saw' (identity); 'I am seeing an enemy tank right now through my sighting system, I remember and know what an enemy tank looks like' (common sense). It is important to make clear here that recognition does not merely apply to what we see but is also applied to our sensations, our actions, our thoughts and emotions (recognising the controls, the sound of the gun firing or the fear of enemy firing at me).

12 The habitual inclination to take these four postulates of dogmatic image of thought for the model of thinking is precisely what Deleuze is describing when we invoke common and good sense in our thinking. We have habitually come to assume that 'everybody knows what it means to think and to be' (Deleuze, 1994: 130). The point here is not that there is no place for representation but that when we place our emphasis only on this recognition of the representational and prescribed identity, we compare the new with what is already recognizable as familiar. The first encounter with the target ('I didn't know if it was a target or a friendly tank') grounds subsequent encounters through simulation training ('I know how to identify targets'). The tank operators' ability to identify something new from the subsequent encounters is thus always based on 'what is already known or what has already been experienced' (Williams, 2003: 118). Habit and memory are presumed to function to bring out what has been stored previously; I am able to recognise the identity of the object because I have become habitualised to its representation and it has been stored in my memory.

13 This, surely, would appear to be an appropriate model of learning for the military context, which clearly does not have the experimental capacities, or indeed, interests, that Deleuze attributes to philosophy! Certainly, simulation training enables tank operators to become proficient in the various actions, movements and procedures that they are required to learn, but also familiarises tank operators to different combat scenarios and contexts. Yet context is by nature unpredictable and it is this that even the most risk adverse of learning modes must appreciate. The reason that these contexts are unpredictable is that what we experience is obviously but a small part of the potential inherent in any situation. To put it is Deleuzian terms, it is merely one actualization of the virtual potential that inheres in any situation. In what follows, then, we will suggest that it is insufficient to think about learning in representational terms because there is always more than what we perceive and experience through the actual and physical world. Learning is better understood as a process of encountering and reconfiguring the relations of the virtual, rather than the commitment of representations into conscious memory. In other words, we hope to demonstrate that learning is in fact constantly taking place, just as the reconfiguration of the virtual and what is brought out into the actual is always ongoing. As Murphie suggests, the expression of difference that each encounter produces, brings a new configuration not only to the actual but also within the virtual (Murphie, 2002). Consequently, learning should no longer be simply understood as a process that identifies and recognises representations, but rather as a process that would inadvertently and productively engage with the virtual. For instance, if the process of learning only occurs through representations, then such a concept is inherently flawed because by its expostulation we can only learn through what we recognise yet at the same time we can only recognise what we have learnt. This means that we are either recognising what we always already knew, which makes learning 'meaningless' or we are put in a position where we are always unable to recognise the production of new knowledge (Semetsky, 2006: 50). In both cases, it points to the fact that there is something more profound in the process of learning. In other words, learning must be a transition between 'pre-conscious and conscious states', which enable us to go from 'non-thought to thought' (Semetsky, 2004: 438–439). In Deleuzian terms, it is the virtual that conditions the 'becoming of the new objects of knowledge' through actualisation (Semetsky, 2004: 449).

14 What is a stake here is that the appreciation of virtual forces allows an appreciation of the new *as new* (rather than as merely compared to the old). As Deleuze points out, if our thought amounts only to recognising what we have identified and represented, then difference becomes

'subordinated' to identity and perception is hamstrung to the already known and given (Deleuze, 1994: 266). What we have then missed are the new forms of thoughts and experiences that cannot be perceived through representation. A representation, then, is an actualisation of the chaos of 'pure variations', a constant flux between virtual and actual (Williams, 2003: 64). The encounter itself is that which 'forces thought', yet which is 'imperceptible' to us (Deleuze, 1994: 139–140). Why is it necessary to attempt to apprehend these 'imperceptible' forces that constitute encounters? For starters, for the learner, much would be missed in terms of our understanding of the *process* of perception. The image of thought as a resolution of various subjective faculties on the object misses precisely the hallucinatory character of perception, with the proliferation of potentials for thought that term implies. Deleuze writes of the hallucinatory perception of an army approaching and it is not merely empirical accuracy that might be lost were we to the roll this event into a recognition of the identity, 'army', for the actual identifiable object is clearly only a part of the virtuality that is described here (Deleuze, 1993: 107–108). In a manner reminiscent of Baroque art – and specifically, Caravaggio's use of chiascuro – the virtuality of perception is a process in which things 'jump out of the background' and 'colours spring from the common base' in darkness (Deleuze, 1993: 35). Like the lightning in the black sky or the colours that stand out from the background, 'the actual does not exist separately from the virtual, and the virtual does not transcend the actual in some higher plane' (Hallward, 2006: 35). Both the actual and virtual exist fully in the same reality. What we perceive, whether it is an object we see, an action we take or a thought we have, is only the part that is actualised. What we do not perceive, yet which is fully real, is what resides in the virtual.

15 When a tank operator encounters the digital image that they recognise as the 'target', the process of recognition is always also a re-engagement with what is different within the virtual. As Ash suggests in the context of videogaming, the interaction with digital technologies is always a matter of re-shaping and even amplifying non-representational forces such as affects, in such a way that influences human behaviour, but also the affective context more broadly (Ash, 2012). Each repetition introduces something new, a varied sensation and perception, through which new aspects of the virtual are actualised. The reference to sense in the following description is instructive:

> Even though I am moving the gun at a much faster pace now, I can still see the target. When I swipe past the target I would sense that it's different and I will just know.
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> 16 – Tank Operator, Corporal Joseph

17 For tank gunners, learning to find and subsequently engage their enemies in the shortest possible time is fundamental to the success of their mission. What this means is that the interval between sense and consciousness is crucial. Micro-perceptions that may not yet register as conscious representations feed into actions and inactions as soldiers fire or hesitate to fire. It is precisely from this pressure of searching for targets in the shortest possible time that we are able to see a distinction between recognising the targets through their representations and encountering (sensing) them virtually.

18 This is not to say that consciousness does not have an important role to play in the learning process. When tank gunners initially start to learn how to recognise targets, they are especially reliant on their consciousness to process the match between what they see and the knowledge of the situation they are accumulating. In the first place, then, the soldiers depend on consciousness to interpret the various representations, which consequently forces them to move through the search at a much slower pace. So unlike the tank gunners who have to take additional time to consciously process whether the representations they perceive can be identified, those who are better gunners have actually developed a certain 'sense' of the targets. They can scan for targets at a much faster pace, because they can pick out the target even before their consciousness can process representations. Instead, each encounter and action varies for them; the gunners are able to actualise new relations with the target, the equipment and their body through this engagement with the virtual. In other words, learning beyond what is represented has allowed them to 'penetrate the coloured thickness of a problem', so that learning is no longer limited to simply obtaining a solution or producing knowledge in relation to the problem (Deleuze, 1994: 165). In this sense, learning can involve a kind of counter-actualisation, insofar as 'to counter-actualize involves amplifying a disruptive force across an otherwise reiterative structure' (Apperley and

Dieter, 2010). As we suggest below, habit, to the extent that it is understood as a potential for change and thus as having a virtual dimension, can serve as such a disruptive force.

Virtually Learning Real Habits

19 Through repeated engagements, or more specifically through the development of habit, a number of practices will take less effort and become more efficacious: a target might become more distinctive in its shape compared to the terrain; a soldier might begin to *feel* how to move their hands in relation to the resistance in the control handle; or the soldier might begin to perceive how their own or an enemy tank needs to move in that particular terrain. Any consciousness of, and indeed enjoyment of, the sensations and effort required to complete a maneuver is gradually reduced. For Ravaisson, the dulling of sensations and the eventual obtainment of grace must be attributed to a single connecting principle, a principle that works in relation to a 'double law' proposed by de Biran (Ravaisson, 2008: 37). Ravaisson argues that through repetition, the development of habit weakens our passions, but at the same time strengthens our action, enabling habit to exude a seamless connection for all our encounters (Ravaisson 2008). More critically, it is this same principle that accounts for the proportional and inverse relation between the negative nullification of senses and the positive development of grace. Eventually, habit exhibits a 'will of its own'; it has its own force that propels the body to act. As pointed out by Dewsbury, Ravaisson's account demonstrates that habit is 'neither mechanical nor psychological'; rather, habit has 'its own ontological status' (Dewsbury, 2015: 38). Habits have their own tendencies and potential to change that cannot be accounted for in representational terms.

20 It is this recognition that leads Ravaisson to conclude that habit is in effect a transformation of one's potential and 'internal virtue' and must be accounted by looking beyond what can be represented (Ravaisson, 2008: 25). Or, to put it in more Deleuzian terms, it is a transformation that occurs within the virtual dimension. It is this transformation that oversees the transition from what is natural to what can be nurtured; it manifests itself by enabling external influences 'to make an impression', which would then determine its behaviour in the future (Ravaisson 2008: 33). Such a transformation is no longer an account of the physical or psychological change that occurs through habit but is more ontological in nature and accounts for what has intrinsically altered the very nature of beings (Carlisle, 2014). As explained by Sinclair, such a transformation is in effect an alteration of the individual's natural habitual disposition, where 'disposition is to be thought of neither as a thing, nor statically as a state' (Sinclair, 2011: 81). It is a potential that has not been actualized, but at the same time, there is tendency, a 'force' that inclines the body towards actualising it. In other words, Ravaisson recognises that through transformation, habit takes on a force of its own that would have a tendency to persist in its existence. It is the retention of such an active force that nullifies sensations but strengthens actions to the state of grace. More pertinently, as highlighted by Dewsbury, such a conception 'slowly reveals a profound understanding of our embodiment' (Dewsbury, 2015: 38). It shows that our bodies are more than just the physical form that they take. What defines us is, rather, 'a dynamic unity of capacities and dispositions to move, to sense, to experience and to understand in particular ways' (Carlisle, 2010: 133).

21 In this sense, the development of habit through military training is in essence a 'reshaping' of 'bodily dispositions for action' (Dewsbury, 2015: 43). It is through the development of habits that soldiers 'sharpen an openness to the world' (Dewsbury, 2015: 43). Habit is not a mindless mechanical action but enables an ongoing experimental outlook towards our encounters and interactions. It is a balance brought between the dulling of our awareness and sensations with the strengthening of actions to a state of perfection and grace.

22 A comparison of experiences of tank gunners indicates there is an intricate relationship between the virtual and how we learn. The unconscious processes of learning that engages with the virtual transform us with each repetition without our conscious knowledge. This is precisely what Ravaisson describes as habit. It is the 'unreflective spontaneity' that has been brought about by 'an obscure activity that underlies sensibility as well as perception and movement' (Ravaisson, 2008: 53; Carlisle and Sinclair, 2008b: 95). These new distinctions and new relations that have been brought out from the virtual have become 'more and more the form, the way of being, even the very being' of the body (Ravaisson, 2008: 57). In other words, learning is not a conscious effort to commit things to memory but a transformation of the individual's 'potentiality' or 'virtuality' that

creates tendencies towards actuality (Carlisle and Sinclair, 2008a: 13). Based on this constant re-engagement with the virtual, we would discover that the learning of habits is necessarily an experimental process that does not, and cannot, be confined to the limits of what has been represented, identified and recognised by us, if only because all our encounters produce something new. This is why Deleuze tells us that 'habit draws something new from repetition – namely difference' (Deleuze, 1994: 73).

> I would say that I have become more effective when it comes to moving the controls. Somehow my muscle has adapted to it and my brain has gained something from the training, allowing me to get better. I don't exactly know when I got better; I just know that day by day as I trained I was able to lay my reticle on the target better and faster.
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> – Tank Operator, Private Paul

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24 We can see here a challenge to the traditional view of learning, which emphasizes the conscious effort on our part to commit identities to memory. According to common sense, we assume that effective learning is a matter of consciously receiving and memorising 'fixed objective content', in order to gain knowledge and reproduce the content that we had received (Williams, 2003: 135). Yet, in the account by Private Paul above, we can observe that learning is not as conscious as we have presumed it to be. Instead, how we learn is necessarily a transformative and experimental process that, through habits, becomes more and more a part of who we are. For tank gunners who commit themselves to the perfection of the trade, they are apt to say 'I *am* a tank gunner', rather than just saying 'I have learnt tank gunnery'. These habits have become a part of who they are, or more accurately, these habits have become incorporated into their 'way of being' (Ravaisson, 2008: 57).

> The simulation had made me learn stuff, without taking so much time to think what I should do; I would just do it accordingly.
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> – Tank Operator, Corporal Stewart

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26 Hence, our point is that learning is not a matter of consciously reproducing and remembering this knowledge that we gained, instead as Deleuze suggests 'learning is rather an involuntary activity' (Patton, 1996: 9). As Corporal Stewart's above account suggests, each encounter with the simulation has in effect 'forced' the tank operator to unknowingly learn. In other words, learning must be thought of as a process that is 'prior to knowledge' (Smith, 1997: 97). Simply put, learning is always an ongoing process that is constantly moulding us and forming habits that become part of us. These processes that engage with the virtual allow us to learn and form habits: they occur all the time for us whether we are conscious of it or not.

27 These processes of engaging with the virtual to form habit are immanently and intimately tied to matter. Deleuze explains that in order for us to learn to swim it is not enough to just replicate and copy what has been represented to us in the form of the strokes and movements. Instead, to learn to swim the swimmer must allow their body to enter into a relation with the water, in which the swimmer's body must combine 'its own distinctive points' with that of the water (Deleuze, 1994: 23). In other words, even if we were able to reproduce all the movements in an exact and fixed manner, we would still struggle to swim because we are not able to understand and feel how our bodies move in relation to the water. Each action and movement we make in the water must therefore be a 'creative response' that allows us to respond to the various differences of the water in relation to our bodies (Colebrook, 2002: 136). In doing so we are no longer reproducing that same movement we had been shown but each action we undertake is instead a response to the possibilities the water affords us. And to that effect, each action and gesture that we make in that moment becomes uniquely different in relation to the body/water equation (Colebrook, 2002; Deleuze, 1994). Learning is no longer a function of receiving and regurgitating a fixed set of knowledge. Instead, learning always 'involves a move to something new' (Williams, 2003: 136). To learn is to create differences each time through these unconscious processes and forming of new relations with the object in question through experimentation, which necessarily 'go beyond the limits' of what was represented to us (Williams, 2003: 136). It is this creation of differences that allows the soldiers to actualise new distinctions and relations in the way they see the target, the controls and even their interactions within the tank. More importantly, it is this creation of differences that enables them to constantly replace old habits while learning and retaining new ones. Consequently, these tank operators do not learn by just mechanically following the

movements and procedures required, nor by knowing where the buttons are. Just like learning how to swim they learn by understanding and responding to how their body moves in relation to the simulator and its parts. They are constantly entering into these new relations, recomposing themselves through the replacing of old habits and the forming of new habits from encountering that which is within the virtual.

Conclusion – Habitual immersions in the Virtual

28 What then is habit's relation to the virtual? We can then say that habit is a creation of difference through the reconfiguration of what is within the virtual. Each repetition brings about a reconfiguration of the virtual relations into a certain format of clarity and obscurity (Williams, 2011). This enables some relations to become closer to actualisation, while others become more distant. With this change, habit that draws from this new configuration, creates an altered intensity or anticipation each time it is repeated. Habit would therefore always synthesize difference. This is why Deleuze tells us that this 'ultimate synthesis concerns only the future', affirming how habit always draws something new from repetition (Deleuze, 1994: 115). We begin to appreciate the change and evolution through the modification and acquisition of habits. These habits are constantly in a state of flux between the virtual and the actual forces orientating us towards the future. Strictly speaking, habits are therefore a *contraction* of virtual and actual forces that brings about a new anticipation or orientation for the future (see Dewsbury, 2015). These tank operators are therefore always creatively engaging and responding through the configurations of the virtual and actual forces around them. It habituates them to engage with the future through an anticipation. Such a future is not the commonly understood version in which we try to peer into the unknown to predict what happens next instead it is a future that is governed and constructed through our engagement with each moment within the present (Auge, 2015).

29 Since these changes occur unconsciously, tank operators are only able to consciously ascertain these transformations and habits once they become actualised and formed:

30 > I've acquired muscle memory that allowed me to know how much I need to turn, and how what buttons I need to press and how I can control it in a way that is more comfortable for me to engage the enemy faster. So muscle memory to me is a sort familiarity with the controls where you know the extent of how much the controls need to be adjusted.

31 > – Tank Operator, Lance Corporal Jones

32 Understood in the terms we have outlined here, Lance Corporal Jones' attribution of these changes to the 'muscle memory' of his body alludes to the process of learning and habit that via Deleuze we have associated with a swarm of differences and ongoing engagement with the virtual. Like the movements of swimming in which the body habitually responds and adjusts to the water, Lance Corporal Jones was able to respond and know 'how much the controls need to be adjusted'. Their encounters with the simulator have in essence provoked 'singularities of affect, attention and action' to which their bodies become habituated (Dewsbury, 2015: 40). The bodies of these tank operators become configured 'towards specific types of becoming' (Dewsbury, 2015: 40). Their bodies move without the need for thought in relation to the tank controls. They read the operating environment as if they are reading a book. They become as much a part of the tank as the tank is as much part of them.

33 But more than just these bodily transformations, we would find that the differences that are produced through the repeated engagement with the virtual bring about a profound change for the soldiers.

34 > You learn about composure and not being rash, you are able to just pick off the targets within those few seconds. This is one of the things I've been able to apply in the simulation training. It's this gaming sense, you got to know that you don't have be rash, and that it is all under control, you use whatever you have to pick off the targets.

- Tank Operator, Private Parker

35 Private Parker shows how successful learning for the soldiers goes beyond reproducing mechanical actions and knowledge but instead grants them a 'sense' of what they do. Or in the words of Private Parker, simulation training has granted him this 'composure' or 'gaming sense' that allows him to accurately and effectively use whatever he has at that moment to habitually react to the situation and 'creatively respond' to each impending situation. From this, we see the

anticipation of the future that habit brings. Habit enables an engagement that is no longer bounded to representations but 'a sense of the future' created through the reconfigurations within the virtual.

36 In this paper, we have shown through the accounts of various tank operators that when we interact with the digital, there is a need to consider what goes beyond what can be represented. This then forces us to rethink what the process of learning entails. Through the Deleuzian understanding of the virtual and its relation to learning and habit, we have established that in all of our interactions we constantly engage with the virtual. These encounters with the virtual not only enable learning to take place unconsciously but also transform our habits and inclinations. Riding a bicycle, sitting down to have a coffee, or reading this paper, involves interactions that are productive of difference and that will unconsciously enable learning to take place and habits to be formed. The point of this perspective on learning is to no longer view our interactions in merely representational terms but as experimental processes. By acknowledging this, learning is not fixated on finding a single solution to each problem but is a process that prioritises creative responses and ongoing transformations.

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References
- Apperley, Tom. and Dieter, Michael. 'Counterplay', *Fibreculture Journal: internet theory criticism research* 16 (2010), https://sixteen.fibreculturejournal.org/.
- Ash, James. 'Attention, Videogames and the Retentional Economies of Affective Amplification', *Theory, Culture & Society* 29.6 (2012), 3–26.
- Auge, Marc. *The Future* (London & New York: Verso, 2014).
- Carlisle, Clare and Sinclair, Mark. 'Editors' Introduction', in Clare Carlisle and Mark Sinclair (eds) *Of Habit* (London: Continuum International Publishing, 2008a), 1–21.
- Carlisle, Clare and Sinclair, Mark. 'Editors' Commentary', in Clare Carlisle & Mark Sinclair (eds) *Of Habit* (London: Continuum International Publishing, 2008b), 78–114.
- Carlisle, Clare. 'Between Freedom and Necessity: Felix Ravaisson on Habit and the Moral Life', *Inquiry: An interdisciplinary Journal of Philosophy* 53.2 (2010), 123 – 145.
- Carlisle, Clare. *On Habit* (New York: Routledge, 2014).
- Chesher, Chris. *Computers as Invocational Media*, PhD, Macquarie University, Sydney, (2001).
- Colebrook, Claire. *Gilles Deleuze* (London and New York: Routledge, 2002).
- Colebrook, Claire. 'Bourgeois Thermodynamics', in Ian Buchanan and Nicholas. Thoburn (eds) *Deleuze and Politics* (Edinburgh: Edinburgh University Press, 2008), 121–138.
- Cook, Ian. 'The Body Without Organs and Internet Gaming Addiction', in Mark Poster & David Savat (eds) *Deleuze and New Technology* (Edinburgh: Edinburgh University Press, 2009), 185–205.
- Deleuze, Gilles. *The Fold: Leibniz and the Baroque* (London and New York: Continuum, 1993).
- Deleuze, Gilles. *Difference and Repetition* (New York: Columbia University Press, 1994).

- Dewsbury, D. John. 'Non-Representational Landscapes and the Performative Affective Forces of Habit: From 'Live' to 'Blank'', *Cultural Geographies* 22.1 (2015), 29–47.
- Fritsch, Jonas. 'Affective Experience in Interactive Environments', *Fibreculture Journal* 19 (2011), 177–190.
- Hallward, Peter. *Out of This World: Deleuze and the Philosophy of Creation* (London & New York: Verso, 2006).
- Hughes, Joe. *Deleuze's Difference and Repetition: A reader's guide* (London and New York: Continuum, 2009).
- Hynes, Maria and Sharpe, Scott. 'Habits and How to Wear them Lightly', *Cultural Geographies* 22.1 (2015), 67–83
- May, Todd. *Gilles Deleuze: An Introduction* (New York: Cambridge University Press, 2005).
- Mesirow, Tod. *Richard Hammond's Crash Course* (United Kingdom: British Broadcasting Corporation, 2013).
- Murphie, Andrew. 'Computers Are Not Theatre: The Machine in the Ghost in Gilles Deleuze and Felix Guattari's Thought', *Convergence: Journal of Research into New Media Technologies* 2.2 (1996), 80–110.
- Murphie, Andrew. 'Putting the virtual back into VR', in Brian Massumi (ed.) *A Shock to Thought: Expression After Deleuze and Guattari* (London and New York: Routledge, 2002), 188–214.
- Nash, Adam. 'Affect and the Medium of Digital Data', *Fibreculture Journal* 21 (2012), 10–30.
- Patton, Paul. 'Introduction', in Paul Patton (ed.) *Deleuze: A Critical Reader* (Oxford: Blackwell Publishers, 1996), 1–17.
- Ravaisson, Felix. *Of Habit* (London: Continuum, 2008).
- Rothfield, Philipa, 'Beyond Habit, the Cultivation of Corporeal Difference', *Parrhesia* 18 (2013), 100–112.
- Semetsky, Inna. 'The Role of Intuition in Thinking and Learning: Deleuze and the pragmatic legacy', *Educational Philosophy and Theory: Incorportaing ACCESS*, 36.4 (2004), 433–454.
- Semetsky, Inna. *Deleuze, Education and Becoming* (Rotterdam & Taipei: Sense Publishers, 2006)
- Sinclair, Mark. 'Ravaisson and the Force of Habit', *Journal of the History of Philosophy*, 49.1 (2011), 65–85.
- Sharpe, Scott. 'The Aesthetics of Urban Movement: Habits, Mobility, and Resistance',** **Geographical Research*, 51.2 (2013), 166–172.
- Smith, W. Daniel. *Gilles Deleuze and the Philosophy of Difference: Toward a Transcendental Empiricism*, PhD, University of Chicago, Illinois, (1997).
- Walther, K. Bo. 'Reflections on the Philosophy of Pervasive Gaming—With Special Emphasis on Rules, Gameplay, and Virtuality', *Fibreculture Journal* 19 (2011), 126–143.
- Weizman, Eyal. 'The Art of War', *Frieze*, 99 (May, 2006) Available at: https://www.frieze.com/issue/article/the_art_of_war/.
- Williams, James. *Gilles Deleuze's Difference and Repetition: A critical introduction and guide* (Edinburgh: Edinburgh University Press, 2003).

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