

AMUSING OURSELVES TO LIFE:  
NEW MEDIA AND THE POLITICS OF INTERACTIVITY

by

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## Abstract

This dissertation explores the emergence of health promotion tools in the form of consumer technologies once made exclusively for entertainment and/or communication. Though media consumption has historically been deemed a sedentary pastime, video games, mobile phones, and other devices have recently been made for the explicit purpose of prompting physical and cognitive exercise. Despite the growing popularity of what I call ‘Interactive Health Commodities’ like the Nintendo *Wii*, however, there remains a conspicuous absence of sociological research on: a) the methods by which these products purportedly ameliorate health and fitness; b) the subjectivities that are said to arise from their use; and c) the marketing strategies used to appeal to different consumer demographics. To address these issues, this research adopts a ‘contextual cultural studies’ approach, which is to say it is concerned with the operation of new technologies in relation to broader social, economic, and political circumstances. It specifically involves three inter-related case studies, each of which examines a particular commodity-form through an analysis of online marketing documents. The first case study focuses on an interview series distributed by Nintendo on the development of the popular *Wii* and *Wii Fit* video games. Drawing from Latour (1999), it considers how these technologies were designed to connect with human users, and how this concomitantly enables ‘governmental’ (Foucault, 1997) and ‘post-disciplinary’ (Rabinow, 1996) forms of control. The second case study centres on the portrayal of ‘brain games’ as tools for mitigating ageing-related risks. It investigates how, by ‘screening and intervening’ in cognitive health (Rose, 2008), these technologies imagine ageing in both positive and problematic ways. Finally, the third case study features content and textual analyses of product descriptions for a broad selection of smartphone health and fitness ‘apps’. These mobile devices are studied for their novel means of transmitting information and initiating surveillance. Taken together, the case studies reveal how, in one sense, Interactive Health Commodities are enabling, as they encourage exercise from a range of consumer demographics. These technologies are at once problematic, however, in that they tend to promote narrow health and fitness ideals, while also tying health inextricably to consumerism.

## Preface

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*For Katie. You are a radio,  
you are an open door.*

## Introduction

In November 2002, the Public Health Agency of Canada issued an urgent media release on the state of health and fitness among the country's youth. Published online, the memo was in fact a joint statement from the Canadian Paediatric Society, the College of Family Physicians, and the Canadian Teachers' Federation. The first message from these groups was a straightforward one: youth are literally in bad shape. The growing prevalence of youth obesity in Canada, they agreed, was a striking trend requiring immediate action across the country. The second message focused more on the causes of this nascent health crisis. Young people's predilection for alluring but sedentary media technologies was deemed partly responsible, as was the supposedly depleted state of school physical education. As said in the document:

The Canadian Paediatric Society, the College of Family Physicians of Canada and the Canadian Teachers' Federation issued a joint call for action today urging parents, educators, politicians and policy-makers to act immediately to address the alarming rise in the incidence of child and youth physical inactivity and obesity ...

... Increased reliance on television, video games, and computer technology as pastimes for children, and the diminishing priority of physical education in Canadian schools, are cited by experts as the major reasons for the growing numbers of sedentary children and teenagers (Public Health Agency of Canada, 2002).

Whether this is an accurate depiction of youth in general is a matter of contestation. What is clear, however, is that the supporting health agencies had established a cause and effect relationship. Nine years on, and the substance and tone of this press release remain relevant. Authorities like the Public Health Agency continue to warn of young people's declining health, and at times still deride media consumption as an originary fault.

Institutional settings like physical education, meanwhile, are still deemed by many to be in need of substantial re-organization.

Yet as these trends persist in some ways, at the same time a remarkable shift is taking hold. This comprises the re-conceptualizing of technologies traditionally used for entertainment and/or communication as commodities that can now help in *solving* our supposed health predicament. What was once a burden is now purportedly a boon. Above all else, what underlies this changing perception is the arrival of consumer technologies made for the explicit purpose of promoting health and well-being. The video game maker Nintendo was at the forefront of this trend, releasing, in 2006, the *Wii* video game platform and the accompanying *Wii Sports* game. The *Wii*'s first-person gaming style, where the player's movements are replicated on-screen, allows users to enact fitness behaviours much as they would in 'real life' exercise settings. Couch potatoes, in other words, are pulled up from their roots. The *Wii*-compatible games *Wii Fit* and *EA Sports Active* soon followed, as did gaming systems from Nintendo's competitors. Indeed, the Sony *Playstation Move* console recently hit the marketplace, as did Microsoft's *Kinect* – the latter ostensibly named as an amalgam of 'kinetic' and 'connect'. Whereas the *Wii* and *Move* employ a wireless remote controller to register physical activity, *Kinect* arrives at this same end through a visual motion-sensing apparatus. The production of health and fitness software for use on these consoles also marches on: *Kinect Sports* rivals *Wii Sports*; *Flash Focus* aims to improve the user's vision; *Zumba Fitness* blends dance and callisthenics; *Fit in Six* targets what are said to be the half dozen core components of fitness; and *My Weight Loss Coach* guides users towards a slimmer bodily aesthetic. In a highly novel development, video games and computer software are also being made to

improve and/or restore the brain, in addition to the body. For example, the video game *Brain Age*<sup>2</sup> (also from Nintendo), or the CD-ROM software made by the playfully-named *HAPPYneuron* company, each are designed to enhance cognitive functioning through stimulating mental challenges. These health-based games tend to be produced for domestic settings, making the household a *de facto* gymnasium or clinic. Yet at the same time, other technologies are mobilizing fitness activities. In perhaps the best example of this, smartphone users can now download thousands of health- and fitness-themed ‘apps’ (i.e., software applications) online, then use them irrespective of their specific locale. These products fulfill a vast range of functions, such as disseminating exercise regimens or medical information.

Given young people’s predilection for gaming, and given the aforementioned discourse that portrays this group as unfit, it is not surprising to find that these new fitness products are oftentimes geared towards youth. But as this dissertation will demonstrate, health/entertainment commodities are evidently made for other demographics as well. As a spokesperson for Nintendo Canada remarked, “With *Wii Fit* we’re looking at families – moms especially” (Csapieha, 2008). This is supported by stylish and highly informative marketing campaigns that are seemingly designed to attract a diversity of consumers. To the extent that consumption patterns are accurate indicators of consumer preferences, these technologies have, in turn, become highly popular amongst the public. As of 2010, Nintendo had sold 30 million *Wii* consoles in the United States alone (Reisinger, 2010).

While many consumers have thus embraced health-centred gaming, support for this newfound trend has come from other sites as well. Newspaper headlines like “*Wii Fit*

a good start on developing a healthy lifestyle” (Wylie, 2011a) or “Pump up your mind with ‘Brain Age 2’” (Gudmundsen, 2007) are not uncommon. Nor are technology reviews from news media sources that draw clear connections between fitness commodities and emergent health concerns. The headline “‘Exergaming’ may combat kids’ sedentary lifestyles” (Lewis, 2009) is a prime example of this. One Canadian journalist even embarked on a 30-day ‘virtual’ exercise challenge in the hopes of “dispelling the stereotype of couch potato gamers” (Wylie, 2011b). This is not to suggest a complete absence of critical journalism on health commodities, but rather a general trend that has seen news media come to their support (also see Carter, 2011; Makris, 2011). A similar point can be made of governments. For example, aside from their general investment in tax breaks and employment funds for prominent video game developers (Ebner, 2009), the Canadian province of Ontario recently allocated \$10 million for the construction of a Centre for Brain Fitness at Baycrest, an academic health sciences centre concerned with ageing. With this money, it was said that “Baycrest will partner with the Toronto-based MaRS Venture Group to develop and market scientifically-proven [brain training] products for the clinic, workplace and home environments” (Baycrest.org, 2011). Non-governmental organizations have subsidized industry too. In 2007, in what was called the Games for Health Competition, the (US-based) Robert Wood Johnson Foundation doled out \$30 000 “for innovative ways to address health and health care issues through the power of video games” (Robert Wood Johnson Foundation, 2006). This same group provides financial backing for the Games for Health Project, described online as supportive of “community, knowledge and business development efforts to use cutting-edge games and game technologies to

improve health and health care” (Games for Health, n.d.). Academic research centres have also arisen with the goal of maximizing the benefits of health/entertainment products, and an annual ‘Games for Health’ conference brings scholars together with industry representatives. Perhaps most remarkably of all, health promotion commodities are increasingly deployed in institutional settings as means for enlivening specific populations. Video games are most popular in this regard; the *Wii*, for instance, is now found in hospitals, physiotherapy clinics, retirement facilities, and school physical education. The use of entertainment products in last of these settings carries with it an effort to both re-imagine media consumption and reinvent school-based PE.

Against this rising tide of support for health/entertainment technologies – technologies that I will suggest can collectively be labelled ‘Interactive Health Commodities’ – this dissertation takes an alternative point of view. As industry directs the history of technologies in new directions, perhaps irrevocably, and as stakeholder groups buttress this development in assorted ways, what is conspicuously absent from the above-described discursive arrangement is critical, theoretically-informed scholarship that scrutinizes products like the *Wii* from a sociological perspective. There may well be benefits to research that explores whether health technologies ‘work’ from a medico-scientific point of view. But there is a clear need as well to consider how the makers and marketers of these products conceptualize constructs like health, fitness, and the body, and how they in turn strive to intervene within and re-configure (consumer) lifestyles. The reason this is so important is that research in the past has demonstrated the problematic meanings and procedures ushered in with previous-generation technologies – many of which were *causes célèbres* in their own right (e.g., see Camacho, 2006;

MacNeill, 1998). Furthermore, and perhaps even more vitally, there is need for research that simultaneously considers how these high tech innovations operate in relation to broader historical and contemporary trends. The philosopher Gilles Deleuze (1995) points out that one might see the history of technologies as neatly tied to that of social change, “with simple mechanical machines corresponding to sovereign societies, thermodynamic machines to disciplinary societies, cybernetic machines and computers to control societies.” But, he continues, “the machines don’t explain anything, you have to analyze the collective arrangements of which the machines are just one component” (p. 175).

Indeed, this dissertation was designed with the fundamental goal of assessing both ‘machines’ and their ‘collective arrangements’. The central argument presented herein is that Interactive Health Commodities, while perhaps leading to some immediate satisfactions for their users, are not *really* about health promotion. Rather, they are about tying health inextricably to consumerism, and, in the process, aiding in the construction of subjects who look to the marketplace for means of becoming ‘healthy’ in objective ways. This is in keeping with neoliberal approaches to health and fitness in general, yet it is problematic in that it both engenders narrow definitions of what ‘health’ comprises and reinforces an inequitable manner of allocating health services. I arrive at this final argument by pursuing three overlapping case study analyses, each of which focuses on a separate commodity-form falling under the broad ‘Interactive Health Commodity’ designation (a designation explained in further detail below). More specifically, and in the tradition of ‘contextual cultural studies’ research on new media, the three case studies use online marketing materials as entry points for examining the ‘exergames’ *Wii* and *Wii*

*Fit*, ‘brain games’ for training the mind, and smartphone health and fitness apps, as well as the articulations of these devices with wider political agendas.

Though the case studies that make up this dissertation are each unique in some ways, the general questions guiding this work are as follows:

- What activities and/or health procedures are involved in the operation of smartphone health and fitness apps, active video games, and brain games? What messages about health, fitness, the body, gender, ageing, and mobility are ‘encoded’ in these technologies?
- What (corporate) perspectives and practices underlie the development of Interactive Health Commodities? What is the specific role of other media (e.g., news media and marketing texts) in promoting these devices?
- Who, if anyone, is enlisted by industry to corroborate the merits of Interactive Health Commodities?
- In what ways might new technologies reshape our understandings and experiences of embodiment and subjectivity, if at all?
- Broadly speaking, what is the significance of Interactive Health Commodities vis-à-vis historical and contemporary trends in ‘treating’ health and fitness?

### **Amusing Ourselves ... To What End?**

Of course, it has not been health authorities alone that have critiqued media’s ‘effects’. The tradition of doing so encompasses the work of some critical sociologists and media theorists. Neil Postman’s (1985) Amusing Ourselves to Death is among the most memorable scholarly contributions of this kind, in part for its content, in part for its title, and in part for its cover depiction of a family sitting in front of a television set – all things normal save for their missing heads. Postman’s book is a rollicking polemic against television’s debasement of public dialogue. The form of information transfer that TV created, he claims, has profoundly impacted the range of possible messages it can convey. If radio at one time made it difficult for lengthy, well-crafted, and altogether erudite conversation, television’s reliance on sound bites and eye blinks only exacerbates this. Underlying these arguments is a fastidious belief that we are arriving not at George

Orwell's famous vision of 1984, whereby an omnipresent authority defies the basis of liberal democracy, but rather at Aldous Huxley's vision of A Brave New World. In this latter circumstance, the things that give us pleasure ultimately stifle our true existence: "people will come to love their oppression, to adore the technologies that undo their capacities to think" (Postman, 1985, p. vii).

There is a significant elision of the body in this claim about media's impacts. To say that technologies undo our capacities to think says nothing of what they do to our capacities to move or feel. As shown in this dissertation, with new(er) media, it is especially necessary to consider the latter. Furthermore, Postman's implicit commentary on power is not without limitations. Like the Frankfurt School, he imagines media culture as stifling, misleading, and ultimately repressive of what is 'true' or worthwhile. Yet there are important reasons to consider an alternative perspective on this matter – to consider, that is to say, whether new technologies might be *productive* of particular subjectivities as well. The first such reason has to do once again with the nature of new technologies. A central finding of this dissertation, and one hinted at by the moniker 'Interactive Health Commodities', is that industry's latest innovations engender novel human-technology relations. These specifically involve reciprocal, or interactive, forms of information sharing, whereby technology users are asked to produce not just interpretations of media messages, but also quantified data on the self. As we shall see in the chapters that follow, new media also depart from earlier technological forms in that they connect with their users in both material and discursive ways.

A second reason for questioning Postman's supposition is more theoretical: both cultural studies scholars and Foucauldians have extolled the importance of seeing power

in general as a productive force. Indeed, the title of this dissertation signals Nikolas Rose's (2007) commentaries on the 'politics of life' as much as it does Postman's exegesis. The desire for and pressures on subjects to take up the bio-political task of maximizing their vital existence have only grown stronger in recent years. This is largely due to the arrival of neoliberalism, and its attendant axiom that market-based goods and services should be used in the project of self-care. These observations on the present-day 'governmental' landscape encourage scrutiny not just of how technologies like the *Wii* are made to operate, but also of the subjectivities made possible via their use. This includes the making of *bio-citizens*, who reflexively measure, monitor, and engage in disciplinary activities to mitigate personal health risks, and *consumer-citizens*, who use commercial technologies towards these various ends. Of course, the fact that we might now be amusing ourselves to life does not preclude the possibility that, as Postman would surely aver, our seemingly insatiable appetite for entertainment and consumerism is in some ways problematic. The findings of this dissertation also demonstrate the worrisome consequences of industry's growing presence in matters of health and fitness – most notably, the stark conflict of interest that lies in industry's attempt to simultaneously define what 'health' comprises and sell means for becoming 'healthy'. This not only leads to the proliferation of 'panic' discourses about the brain and body; I will contend it also reduces 'empowerment' to the parsing of industry-sanctioned choices.

In what follows, I present five interrelated chapters on these new politics of entertainment, interactivity, and health promotion. As noted, at the core of this dissertation are three case studies that take a contextual cultural studies approach towards examining Interactive Health Commodities. The first of these, presented in Chapter Two,

centres on Nintendo's immensely successful *Wii* gaming console and *Wii Fit* game. Since its launch five years ago, the *Wii* has been widely celebrated for transforming the gamer-technology arrangement. In particular, the innovative *Wii* controller, when held by the player, replicates her or his physical movements on-screen. The game *Wii Fit* likewise comes with a hardware addendum; in its case, a sleek 'balance board' on which the player stands to perform simulated exercises and sporting activities. Together, these products are designed to transform the living room into an interactive fitness environment. To mark the unveiling of these devices, Nintendo posted online the lengthy 'Iwata Asks' interview series, named after Nintendo president and series interviewer Satoru Iwata. These documents were aimed at unearthing the motivations underlying the construction of the *Wii* and *Wii Fit*, as well as the ways high-ranking Nintendo labourers imagined these technologies might be used by gamers during consumption. My interest in this case study lies first with how, according to Iwata Asks, human and technological 'mediators' (Latour, 1999) were brought together in the making of *Wii* and *Wii Fit*, and how the finished versions of these commodities might in turn forge unique technology-consumer connections. Second, I consider how the designed uses of these 'active' video games might fortify 'governmental' (Foucault, 1997) and 'post-disciplinary' (Rabinow, 1996) rationalities, especially when deployed in communities like school physical education.

The second case study, presented in Chapter Three, turns to an analysis of the politics of intervening in cognitive health. 'Brain games', as noted, are interactive commodities that take users through a series of fun but stimulating mental exercises that purportedly measure and enhance brain functioning. The contextual study in this case

focuses on online promotional materials for three prominent cognitive training products. What is especially interesting about the corporate websites for *Brain Age*<sup>2</sup>, *Fit Brains*, and *HAPPYneuron* is that they serve as *de facto* tutorials on both the merits of their respective products and the exigencies of contemporary cognitive science. The brain's newly discovered pliability, we are told, is the underlying rationale for perpetual mind-work. With this in mind, Chapter Three considers in particular the articulations between these technologies and the conditions of neoliberal governance – or, more precisely, their articulations with neoliberalism's vision of the ageing self. Indeed, brain game marketing and software appeal to older adults in particular, who are more broadly exhorted at present to publicly display their 'successful' experience of later life. Some of the novelties of online marketing are on display in this case study as well. For example, through corporate websites, companies can feature both 'in house' experts on brain science (i.e., experts who participated in a product's creation and design) and weblinks to third party 'service' journalists. In both cases, the goal is to corroborate brain training's virtuousness.

Finally, Chapter Four examines marketing documents for popular health and fitness 'apps' made for use on the seemingly ubiquitous Apple iPhone. While maintaining a focus on neoliberalism and the making of 'healthy' consumer-citizens, this case study is novel in its consideration of the contemporary trend towards mobile (health) consumerism. It uses both content and textual analyses of marketing descriptions for popular apps to scrutinize: a) the functionalities contained in these technologies; and b) the meanings app developers attribute to the notions of health, fitness, and the body. Though products like the Walkman were once exulted for rendering household activities

portable, health and fitness apps are driven towards making virtually all health-based procedures possible in transit, and virtually all components of the body into sites for ongoing self-care. In this sense, they intensify a broader trend towards accessing health data outside of the institutional confines so famously described by Foucault. This certainly might be beneficial to some consumers, however a key critique raised in Chapter Four is that smartphone apps also reinforce the sanctity of ‘ideal’ bodies (i.e., fit, lean, autonomous) without concern for the many complicated determinants of health.

The dissertation concludes with Chapter Five, devoted to re-assembling the central themes of the three case study analyses. At this point I further develop the argument that Interactive Health Commodities are intimately involved in the production of bio- and consumer-citizens who pursue self-care through the market. I reflect on both the small-scale and large-scale implications of this, while also suggesting avenues for future research. Before embarking on any of these endeavours, however, it is first necessary to situate the objects of this research within their broader conditions of existence, and within the tradition of academic research on media technologies only briefly explained in this introduction. It is also necessary to expound on the method propelling this dissertation. These are the tasks of Chapter One.

# 1. Contextualizing Interactive Health Commodities: Literature Review and Methods

## Literature Review

### Theoretical Framework

In recent years, ‘contextual cultural studies’ has emerged as a viable and highly instructive framework for those carrying out qualitative research. From a theoretical perspective, scholars taking this approach have found a fecund, if sometimes uncomfortable, alliance between Gramscian/Marxist and poststructuralist conceptions. In this sense, researchers and writers have mobilized a ‘unity-in-difference’, meaning devotion to constructive eclecticism in the selection and organization of guiding theories.

The concept of ‘articulation’ has proven especially popular for cultural studies scholars interested in media, physical activity, and health (Andrews, 2002; Jackson & Andrews, 2004; King, 2005). As we shall see, this is a term that has both theoretical and methodological implications. Jennifer Daryl Slack (1996) suggests that Ernesto Laclau’s interpretation of articulation is a key inflection point in the concept’s theoretical trajectory. In his book *Politics and Ideology of Marxist Theory*, Laclau (1977) strives to move away from the Marxist orthodoxy of class reductionism – something he sees as problematic for its inability to account for ‘aberrations’ in class consciousness. One supposed aberration of this kind is the manifestation of contrasting perspectives from those in similar class positions. He uses the term articulation to describe the non-necessary linkages that arise between different political ‘concepts’. More specifically, he ties articulation to the hegemony concept, suggesting that a group or class maintains authority not in that they impose a cohesive world-view, but in that they articulate – both

in the sense of drawing together and expressing – different conceptions of reality to quell potential forms of resistance (cf., Slack, 1996, p. 119). Chantal Mouffe (1979) advances a similar idea. The articulations that solidify hegemony, she says, “will always be a complex ensemble whose contexts can never be determined in advance since it depends on a whole series of historical and national factors and also on the relations of forces existing at a particular moment in the struggle for hegemony” (p. 193). This is a significant effort to account for the variegated cultural influences on hegemony, as well as their standing alongside, rather than below, class politics.

These suppositions were clearly influential on Stuart Hall, who is now more readily associated with the articulation concept. What Hall retains in particular from Laclau and Mouffe is an obstinate belief in the uniqueness of political conditions. He too advances a principle of non-reductionism, which is to say he does not presume that human experience can be distilled down to (for example) relations of class. Rather, the articulations that form a particular ‘conjuncture’ are seen to be spatially and temporally contingent, and thus potentially fleeting as well. As Hall writes with his colleagues Paul du Gay, Linda Janes, Hugh Mackay, and Keith Negus:

By the term ‘articulation’ we are referring to the process of connecting disparate elements together to form a temporary unity. An ‘articulation’ is thus the form of the connection that can make a unity of two or more different or distinct elements, under certain conditions. It is a linkage which is not necessary, determined, or absolute and essential for all time; rather it is a linkage whose conditions of existence or emergence need to be located in the contingencies of circumstance (du Gay et al., 1997, p. 3).

To say this another way, articulation involves the creation and/or reinforcing of contextual circumstances through the convergence of specific texts, policies, practices, bodies, events, and so forth. Yet Hall also departs to some extent from his forebears in that he perceives Laclau to have distanced himself too far from materiality. To remedy

this, while also avoiding Marx's class determinism, Hall (1996) formulates the notion of 'Marxism Without Guarantees'. In this arrangement, the mode of production does not affect social relations in the last instance (as in Marx), but rather potentially does so in the *first*. That is to say, the economic arrangement *du jour* is part of any society's 'conditions of possibility'. Hall (1996) furthermore contends that ideology is both a conceptual and material force. By ideology, he says, "We mean the practical as well as the theoretical knowledges which enable people to 'figure out' society, and within whose categories and discourses we 'live out' and 'experience' our objective positioning in social relations" (p. 27).

On the surface this theoretical framework is incompatible with poststructuralist sensibilities – especially those of Michel Foucault. As is now well known, Foucault was dismissive of Marxist interpretations of ideology. In his view, inhered in this concept are both a form of economic reductionism and a problematic belief that power is universally and unequivocally a repressive force. Poignantly, and by now quite famously, Foucault (1977) writes, "we must cease once and for all to describe the effects of power in negative terms: it 'excludes', it 'represses', it 'censors', it 'abstracts', it 'masks', it 'conceals'. In fact, power produces; it produces domains of reality and rituals of truth" (p. 194; as quoted in Storey, 2001, p. 78). Elsewhere he asks, "[i]f power were never anything but repressive, if it never did anything but to say no, do you really think one would be brought to obey it?" (Foucault, 1980, p. 119).

Indeed, one of Foucault's most influential contributions is to see power not as the possession of an individual or group but as a collection of non-centralized, relational, and productive forces (Ramazanoglu, 1993). He develops a fairly novel conception of

discourse for explaining this. Discourse on the one hand refers to statements or enunciations made with the body or in language. In Foucault's (1972) terms, these are "practices that systematically form the objects of which they speak" (p. 54). These statements can 'build up', as it were, to create blocks of knowledge that Foucault calls 'discursive formations'. On the other hand, discourse also refers to "a postulated set of rules that determine what kinds of sentences are to count as true or false in some domain" (Hacking, 2002, p. 77). Discourse in this regard involves the broad conditions that govern what statements can be made to begin with, or what subjectivities are possible in the first place. With this second meaning of discourse, Foucault transitions from a description of social relations to a full-fledged theory of power/knowledge. The 'régimes of truth' (i.e., the broad discursive conditions) that characterize a given time/place allow multiple, but not infinite, *specific* truths to be produced. In his most famous example, Foucault (1978) argues that the discursive formation related to Victorian sexuality – that is, the practices designed to codify and control 'perverse' subjects, the disciplinary strategies, the authoritative prescriptions of doctors, the construction of medical institutions, and so forth – were possible only in a society where the model of the confession had transferred from the church to the clinic, and where medical authority had been sanctioned as 'true' to begin with.

Yet upon closer inspection there are points of convergence (or articulation) in Foucault and Hall's analytics. From Hall's (1996) perspective, he recognizes that there is a close association between Foucault's multi-faceted conception of discourse and the above-described framework of articulation. Both recognize how *a priori* conditions allow certain statements, objects, or practices to emerge. As Hall says, "the combination of

regime [*sic*] of truth plus normalization/regulation/surveillance is not all that far from the notions of dominance in ideology that I'm trying to work with" (Grossberg, 1996, p. 135). There is certainly a tradition of mobilizing Marxist conceptions of ideology to understand power as repressive (as discussed below), yet, on the contrary, Hall and others at the Birmingham Centre for Contemporary Cultural Studies (CCCS) were concerned with how participation in consumer culture can have productive effects. Meanwhile, from the perspective of those working in the Foucauldian tradition, efforts have been made to recover notions like ideology and hegemony. As Caroline Ramazanoglu (1993) writes, Foucault's 'impersonal' conception of power:

does not entail that there are no dominant positions, social structures or ideologies emerging from the play of forces; the fact that power is not held by anyone does not entail that it is equally held by all. It is held by no one; but people and groups are positioned differently within it. No one may control the rules of the game. But not all players on the field are equal (p. 191).

In this sense, ideology can be situated within a broader discursive framework. Discourses are plural, but are also: a) valued or de-valued relative to one another; and b) frequently 'put to work' for ideological purposes (Burr, 2003; Mills, 2008). Indeed, Foucault himself spoke of ideology and *hegemonies* quite often. While he is sometimes accused of extreme relativism, his later works clearly express the material consequences and hierarchical arrangement of power (Foucault, 1977, 1978).

With this in mind, the research reported in this dissertation follows the general belief that "the practice of post-structuralist intellectualizing is closely allied to that of cultural studies" (Andrews, 2000, p. 131; also see Miller, 2009). From Foucault, it retains a focus on the multiplicity of truths and productivity of power. It draws specifically from Foucauldian concepts such as panopticism, biopower, and governmentality, as well as from theorists who have sought to 'update' Foucault for recent times (e.g., Deleuze and

Guattari, Rose, Rabinow). From cultural studies, it retains Stuart Hall's conceptualization of articulation, and the ideas that discourses are ideological to the extent that they are given meaning by different groups (e.g., by marketers, technology producers, and consumers), and that meaning-making can be used to enact or conceal relations of power. This theoretical framework begets questions regarding the discourses and articulations relevant to the technologies studied in this dissertation – a matter to which I now turn.

### **Neoliberalism**

The first construct relevant to this research is neoliberalism, a term best understood by examining its historical development. Liberalism itself is a system of governing that displaces sovereignty's desire for absolute control in favour of social and economic mechanisms that fortify the self-organizing practices of civil society (Miller & Rose, 2008). While certainly subject to fluctuations between individualist and collectivist manifestations over time, the Great Depression and Second World War set in motion a series of events that generated the apotheosis of the collectivist liberal state (Brown, 2003; Harvey, 2005; Turner, 2008). The Depression demonstrated, seemingly irrevocably, a glaring and immediate need for welfare support systems to counteract capitalism's inherent social consequences. For proponents of collectivism, the War years validated that dirigisme could engender simultaneous economic growth and social wellbeing. The immediate postwar period thus became the 'Golden Age' of welfarism (Higgs, Leontowitsch, Stevenson & Jones, 2009), as Keynesian prescriptions for social organization were broadly embraced. These included, for example, redistributive tax policies, promotion of employment rights, universal social programs, and the recognition

of union power (Carroll & Ratner, 2005). Underlying these revamped policies was also “a considerably changed understanding of human nature and social responsibilities” (Marchak, 1991, p. 48). Namely, it became increasingly difficult to honour Adam Smith’s belief that the universal adoption of rational self-interestedness would distribute social and economic benefits across society. Canada’s adoption of universal Medicare in 1966 is a fitting example of this shifting moral terrain.

Wendy Brown (2003) warns of romanticizing postwar welfarism, invoking in particular the memory of civil rights inequalities. She does admit, however, that the image of welfarism is alluring in the face of current-day neoliberal policies. Indeed, just as Keynesianism or ‘embedded liberalism’ (Harvey, 2005, p. 11) was blooming, the seeds of a new, profoundly different socio-economic order were sown. In the years leading up to the Second World War, a movement arose to problematize state welfare systems and restore some of the basic principles of orthodox liberalism. In their attacks on welfarism, ‘neoliberals’ blended ideological and pragmatic criticisms. Ideologically, they condemned the supposed withering of inalienable rights (e.g., the right to economic self-determination) and urged that Keynesianism was only an initial step towards totalitarianism (Turner, 2008). As Harvey (2005) notes, they also assailed “all forms of social solidarity” (most notably union power) in that they supposedly hinder competitive flexibility (p. 23). Pragmatically, neoliberals were especially critical of the mounting deficits that came from public provision, arguing that this would cause excessive monetary inflation and, in turn, would halter economic growth (Carroll & Ratner, 2005; Marchak, 1991). Foucault reminds us that such criticisms were levied in both Europe and

America by the German *ordo*-liberals and Chicago School Friedmanites, respectively (Lemke, 2001).

While the neoliberal movement was originally confined to academic circles, by the 1970s it was brought to bear on public policy as a result of both domestic and international pressures. Domestically, politicians increasingly sought new manners of organizing the state in the wake of a widespread crisis of capital accumulation (Harvey, 2005). Neoliberal measures such as privatization and deregulation were trumpeted as means to escape the economic stagnation purportedly brought on by Keynesian dirigisme. More broadly, governments were impelled to recognize the growing mobility of capital made possible by technological innovations. They were further pressured to embrace the supposedly inexorable arrival of a globally integrated financial system (Dyer-Witheford, 1999; Marchak, 1991; Schiller, 2007). In effect, and as I describe in further detail below, neoliberalism and globalization formed a synergetic bond. By the 1980s, just years after Nixon confessed “we are all Keynesians now” (Harvey, 2005, p. 13), the welfare state had been thoroughly discredited by neoliberal attacks. Thatcher, Reagan and, in Canada, Mulroney now stood as metonyms for a new era of governance.

As Patricia Marchak (1991) writes, the turn to neoliberalism resembled the earlier turn to Keynesianism in that it comprised both specific economic prescriptions and renewed judgments on ‘moral’ activity. With respect to the former, neoliberalism advocates a range of economic interventions designed to stimulate the conditions of market-based, entrepreneurial capitalism (Brown, 2003; Heywood, 2007; Wilson, 2007). This includes the deregulation of both commodity and labour markets, the privatization of social services, decreases in public expenditure, and the elimination of trade tariffs.

Though some of these tendencies reflect classical liberalism, the will to codify all social institutions through the logic of market exchange – what Harvey (2005) calls the ongoing “financialization of everything” (p. 33) – is precisely what is ‘neo’ about this system (Lemke, 2001). The state under neoliberalism is to withdraw to its most basic functions. This involves remaining ‘strong’ on matters of security, maintaining property and ‘negative’ rights, and, most of all, ensuring that the market order is upheld in all cases (Turner, 2008). In terms of its moral invocations, neoliberalism decries the collectivist principles of welfarism and advocates forms of autonomous and reflexive self-care in their place. That is to say, ‘responsible’ citizens need not rely on forms of public provision, but rather are encouraged to consult with (increasingly liberalized) consumer markets to manage their own lives independently. In this sense, neoliberalism aims to construct a society that is guided entirely by the logic of entrepreneurialism: individual people, just like the public and private sectors, are to stay ‘lean’, ‘fit’, and ‘flexible’ (Lemke, 2001, p. 203). As such, neoliberalism simultaneously recovers the Enlightenment notion that people, rather than social structures, are responsible for ‘failures’ such as poverty (Turner, 2008, p. 143). It is worth noting that policy imperatives under this system of governing appear slightly less obstinate than perspectives on morality. While legislation is occasionally enacted to resuscitate welfare systems or to (lightly) curtail market ‘freedoms’, the belief in *homo economicus* is socially and politically entrenched.

## **Healthism**

In Foucauldian terms, neoliberalism stands as a framework for ‘conducting conduct’, as the state takes a managerial role that depends equally on the public’s reflexive self-governance and the private sector’s ‘responsible’ service provision. As scholars have shown, neoliberalism is especially consequential in the distribution of health care and in the discourses surrounding health and illness. Like other public domains, formal health care is increasingly subjected to neoliberal evaluation and re-organization. Janet Newman and Elizabeth Vidler (2006) note that this includes pressures on public systems to be flexible, competitive, and efficient without fail. The Fraser Institute’s recent attempt to quantify and compare hospitals in British Columbia in the hopes of engendering competition is an exemplary case (see [VancouverSun.com](http://VancouverSun.com), 2009). Health services are also increasingly opened to market actors to render health a viable means of capital accumulation. As another example from BC, the Health and Social Services Delivery Act has expedited the privatization of services such as hospital housekeeping (Cohen, 2006). Furthermore, in Canada, scholars argue that mechanisms for instituting and evaluating ‘health promotion’ initiatives are similarly colonized by neoliberal logic. According to critics, and despite its *de jure* recognition of socio-economic status (SES) as a correlate to low health measures, epidemiology’s now prominent ‘population health’ model ignores the underlying causes of SES disparities – causes that include the dismantling of public support systems under neoliberalism (Coburn, 2000; Coburn et al., 2003; Labonte, 1997; Navarro, 2007). Bercovitz (2000) adds that public health promotion initiatives, while purportedly taking an holistic approach to health and wellness, often seek to construct ‘responsible’ citizens who

vigilantly enact forms of autonomous self-care. In doing so, a rationale is implicitly made for the retreat of welfare systems.

While these trends reveal the infusion of neoliberalism's policy prescriptions into existing health services, it is equally clear (and indeed, relevant to this research) that neoliberal messages about 'fitness' and 'healthiness' are intruding into other social domains. Three decades ago, Robert Crawford coined the term 'healthism' to describe the "striking moralization" of health, especially among the American middle class (Crawford, 2006, p. 410; also see Crawford, 1980). Though there was a time when health was more readily attributed to both structural conditions and environmental factors – for instance, during the social movements of the 1960s – healthism came to privilege personal lifestyle as the decisive variable in the pursuit of health and wellness. On one level, this can be viewed as the grafting of neoliberalism's mantra of self-care onto matters of embodiment, fitness, and wellbeing. Beginning in the 1970s, people were increasingly imagined as personally responsible for issues such as obesity, cancer, and, in perhaps the most politically charged example, HIV and AIDS. On another level, healthism evidently buttressed the neoliberal agenda:

In contrasting a vision of autonomous, prudent and self-responsible individuals to images of the careless and the foolhardy, a link was easily made to the burden of social spending: the virtuous would have to pay taxes to provide medical care for those whose unhealthy lifestyles led to over-utilization of medical care (Crawford, 2006, p. 410).

Healthism, then, seeks to reduce questions of health to matters of personal identity. People are to understand themselves as healthy or ill because of what they have done, not because of the impacts of (for example) class or the environment. As Ivan Waddington (2000) remarks, under these conditions the body is a key gauge of one's embrace of care and self-restraint: "slimness signifies not only good health but also self-discipline and

moral responsibility whereas fatness, in contrast, signifies idleness, emotional weakness and moral turpitude” (p. 410; also see Dworkin & Wachs, 2009; White, Young & Gillett, 1995).

In ‘healthist’ times, one’s ability to identify, address, and preferably eradicate the health *risks* to which she or he is vulnerable has become an indicator of ‘responsible’ citizenship as well. As discussed in Chapters Two and Three, risk thinking has a substantial historical lineage – one that coincides neatly with the onset of Western liberalism. From the seventeenth century forward, a host of measuring techniques were developed to better understand probabilities and frequencies associated with large demographics. So too were preponderant hygienic strategies developed “that tried to identify, manage and reduce aggregate levels of morbidity and mortality” (Rose, 2001, p. 7). The desire for risk management, however, is proliferating now more so than ever. This is courtesy of a range of developments that are explored in this dissertation, such as the popularizing of risk expertise and the creation of risk management technologies (Lupton, 1999).

### **Post-Fordism and the Age of Interactivity**

Indeed, the pursuit of marketable, high tech commodities has been vital to the ascendance of both healthism and neoliberalism. In charting the recent history of technological development there is heuristic value once again in juxtaposing pre- and post-war rationalities. At the turn of the twentieth century, industrial capitalism was revolutionized by Fordism – a system that took its name “from the integration of a Taylorist division of labor with intense mechanization pioneered in the auto-plant

assembly lines of Henry Ford” (Dyer-Witheford, 1999, p. 55). According to David Harvey (2004 [1989]), at its core Fordism was characterized by a penchant for rigidity in both production and consumption. In the former realm, this comprised fixed capital investments in assembly line manufacturing and devotion to deskilled (albeit highly organized) workers. In consumption, it entailed the development of relatively stable mass consumer markets and a predilection for durable domestic commodities. For its part, the state played a central role in the sustenance of Fordism by foregrounding social and economic policies that bolstered both entitlement programs and the cause of the working class (see Jessop, 1995). In simplified terms, and at the risk of romanticizing their compatibility, the Fordist system of accumulating wealth sat comfortably alongside a Keynesian political order. As Steve Kline, Nick Dyer-Witheford, and Greig de Peuter (2003) point out, it is important to recall that gendered and racialized logics ensured the sustenance of stable domestic labour hierarchies as well.

Yet Fordism’s *sine qua non* of rigidity was eventually perceived as a cause of the aforementioned postwar crisis in Keynesian/Fordist accumulation. Patricia Marchak (1991) documents how the development of the silicon chip, followed by the transistor and ultimately the integrated circuit helped realize capital’s growing interest in expanding offshore. The heightened ease of air transportation and international communication, for example, permitted businesses to outsource labour to more favourable (i.e., cheaper, tax-friendly) locales. Harvey’s (2004) term ‘flexible accumulation’ is a lasting contribution to the study of post-Fordism, as it accurately captures industry’s desire to uncover new physical landscapes for production. Of course, such processes were aided by the turn to neoliberal policies that deregulated commodity and labour markets. What took shape as a

result was a new global arrangement whereby multinational corporations became flexible instruments of “resource procurement” (Marchak, 1991, p. 6), particularly in newly decolonized but still developing countries. These corporations were of course not accountable to a singular national populace. Their power was only curtailed by trade and investment agreements (e.g., the North American Free Trade Agreement) and a loose assemblage of international organizations (e.g., the World Trade Organization), both of which favoured neoliberal expansion (Barney, 2005). Domestic patterns of inequality in labour persisted, but by the latter half of the century were partnered with a globally integrated labour system reliant on both the ‘immaterial’ labour of those in the Global North (mostly middle-class males) and a subservient class responsible for material production in the Global South. With the turn to information capitalism, the rapid and inexpensive production of semi-conductors became especially valued by industry (Kline et al., 2003, p. 205).

The turn to post-Fordism also engendered significant changes to the products of organized labour. In contrast to the durability of goods developed under Fordism, commodities were made to emphasize immediacy and ephemerality. As Kline et al. (2003) observe, new technologies are “instantaneous, experiential, fluid, flexible, heterogeneous, customized, portable, and permeated by a fashion with form and style” (p. 74). Perhaps more importantly, they are *interactive* in ways previously unimaginable. The desire for interactivity is certainly far from novel. As Angela McRobbie (1994) reminds us, media consumption has long been an active and embodied process. Postman (1985) furthermore remarks that early inventions like the telegraph were revered for initiating new forms of peer-to-peer sharing. But the post-Fordist era has modified both our

understanding of and desire for interactivity. On the one hand, there are simply more opportunities to participate in media culture than ever before. Darin Barney (2008) notes that our media environment now contains a multitude of applications that “present countless opportunities to vote, rank, comment, mash-up, produce, present, mark-up, post, tag, choose, share, customize, network, link, navigate, discuss, play, provide feedback and collaborate via an equally diverse array of devices” (p. 100). Mark Andrejevic (2007a) adds that underlying the quest for interactivity is a promise “that viewers can be cultural producers as well as consumers” and that, perhaps more crucially, “participatory consumption can be creative and fulfilling” (p. 29). To say this another way, there is a growing sentiment that media culture is more democratic than in previous eras.

On the other hand, the will for interactivity strives to induce seamless human-technology relationships, while continuing to promote inter-subjectivity as well. Two decades ago, Haraway (1991) argued that the boundaries between people and technologies are permeable and ripe for transgression. While her claim that this could be empowering should not be dismissed, she also did not predict the extent to which consumer culture would adopt the ethos of hybridity. As we shall see in the case studies below, entertainment and communication technologies are now entangled with the consumer body in sophisticated ways. Hardware is now ‘wearable’ so as to take measures of the human figure; the body and mind in turn are represented in software in complicated ways (Cranny-Francis, 2008). These connections, as we shall see, enable new forms of health promotion, of physical and cognitive activity, of information transmission, and of surveillance.

In their influential book Digital Play, Kline et al. (2003) make a compelling case that video games are ‘ideal commodities’ for post-Fordism. They are, in one sense, made under typical conditions of post-Fordist production, with geographically dispersed immaterial and material labour. In another sense, they are ephemeral, flexible, and spectacular in and of themselves. They also blur the boundaries between people and technologies (Baerg, 2007; Lahti, 2003). Since Kline et al.’s assertion was made near the decade’s beginning, it pre-dates the emergence of smartphones, which presently advance a strong case for the ‘ideal commodity’ title as well. What is missing from these authors’ overall assessment, however, is an analysis of how new entertainment/communication technologies reinscribe the conditions of neoliberalism and healthism, as well as post-Fordism. This is a shortcoming addressed in this research through a series of studies on what can broadly be labelled ‘Interactive Health Commodities’. Generally speaking, these are products that:

- Have traditionally been used for entertainment and/or communication purposes.
- Are made primarily for personal consumption, and for purchase through consumer markets.
- Are now made for the purpose of health promotion as well, usually through statistical recordings of health and the body/brain.
- Engender interactivity through physical and/or representational connections with the body.
- Are produced, marketed, and deployed on an international scale, usually with the aid of other media forms (like promotional websites).

While new technologies certainly have their idiosyncrasies, the case studies that make up this dissertation explore how ‘active’ video games (like the Nintendo *Wii*), ‘brain games’, and smartphone health and fitness ‘apps’ fulfill these basic criteria. The question of whether they do so to repressive or productive ends is a matter of debate.

## **Media as Repressive? ...**

While situated in these present-day circumstances, Interactive Health Commodities also invoke a history of academic debates about media culture. There is first a lengthy tradition of theorizing consumer culture generally, and new media technologies specifically, as repressive of authentic and worthwhile experiences. Mike Featherstone (2007) points out that Walter Benjamin (2001 [1935]) saw some benefits to the marriage of art and industry in his famous essay ‘The Work of Art in the Age of Mechanical Reproduction’ – for example, the increased accessibility of cultural artefacts. Nonetheless, his essay is generally regarded as an important criticism of consumer culture, and as a precursor to later Frankfurt School writing.

Benjamin describes how, in the wake of Western industrialization, art was subjected to the same formalized treatment as other commodities. Namely, through photography and the technical reproduction of sound, the singular work of art is reproduced, packaged and circulated *en masse*. For Benjamin, this has profound consequences in that the original ‘aura’ or authenticity of artwork is effaced – even the most perfect artistic reproduction would still be “lacking in one element: its presence in time and space, its unique existence at the place where it happens to be” (Benjamin, 2001, p. 50). Nearly a decade later, Horkheimer and Adorno (1972 [1944]) identified an intensifying of this trend. Media industries like cinema and radio need not even masquerade as art, they said: “The truth that they are just business is made into an ideology in order to justify the rubbish they deliberately produce” (p. 121). The conception of ideology referred to in this passage invokes the Marxist interpretation, where an intentionally fabricated ‘false consciousness’ distracts from both vital needs and

pressing forms of exploitation. Marcuse (1991 [1964]) advances a similar argument. By the time of his writing he saw false consciousness to have become so all-encompassing (and life so ‘one-dimensional’) that it was immune to its own falsehood, and as such had become the real and true condition of existence (p. 12). Alienation was no longer strictly a product of the workplace, but was one of consumption as well. As Storey (2001) summarizes it, for the Frankfurt School, “[w]ork under capitalism stunts the senses; the culture industry continues the process” (p. 53).

A similar polemic, and indeed a similar conception of power, permeates the activist scholarship of the French Situationists. Guy Debord’s *The Society of the Spectacle* (1994 [1967]) in particular stands as an effort to recalibrate Marxism in the face of a media-saturated postwar culture. Yet whereas Frankfurt School scholars tended to see the culture industry as a subtle, even subconscious, seducer, for Situationists the whole of Western society comprises “an immense accumulation” of media spectacles (Debord, 1994, p. 12). More importantly, media production replicates the inequitable relations of the workplace in that the sensationalized world is fabricated by a bourgeois class interested in the sustenance of its own authority. This, in effect, is a repackaged version of Marx’s ‘commodity fetishism’. Media imagery is divorced from its real life conditions of production so as to act back on consumer-subjects as an alien commodity-form. This might not be so problematic if the relations of media production were not so profoundly inequitable. In Debord’s (1994) words, “The spectacle in its generality is a concrete inversion of life, and, as such, *the autonomous movement of non-life*” (p. 12; emphasis added). For Situationists, however, this also opened the possibility for tactical

forms of subversion, as when they altered the sign systems associated with popular advertisements in what they called ‘détournement’.

Postman’s (1985) aforementioned book Amusing Ourselves to Death continued this theoretical trajectory into the 1980s. His disenchantment, however, did not arise simply from the growing prevalence of ‘mind-numbing’ television programming, as it did for scholars like Marcuse. Rather, he was concerned with the aestheticizing of news media’s more weighty matters: “The problem is not that television presents us with entertaining subject matter but that all subject matter is presented as entertainment, which is another issue altogether” (p. 87). There is a problematic division here in what ‘counts’ as matters of politics. As feminist cultural studies scholars have shown, consuming popular media can be strategic and subversive (e.g., Radway, 1984). Nonetheless, Postman highlights a significant relationship between the form and content of media products. As the former changes, he argues, the latter does so inexorably. Though this is true of all media (as the case studies that make up this dissertation show), Postman suggests that television’s image-based format is especially damaging to erudite public and political dialogue. Postman’s exegesis thus calls to mind Baudrillard’s (1983, 1995) more famous arguments that, in postmodern times, media images become more viable than their original referents. Unlike Baudrillard, however, Postman retains the notion that a ‘truer’ underlying reality of alienation exists. Media education, he suggests, would go far in counteracting the subsumption of politics by pleasure, “[f]or no medium is excessively dangerous if its users understand what its dangers are” (p. 161).

### **... or Productive?**

These critiques of media, technology, and industrialization have lasting impacts. Writing more recently, though still before the unveiling of the media products studied in this dissertation, Best and Kellner (1997) argue that new technologies continue to stifle true experience. “Of course,” they say, “‘virtual’ and ‘interactive’ technologies merely seduce the viewer into an even deeper tie to the spectacle, and there is no media substitute for getting off one’s ass, for interactive citizenship and democracy, for actually living one’s life in the real world” (p. 89). Yet the media-as-deception tradition also tends to mobilize an understanding of power as inherently repressive. Beginning at least in the 1970s, this assumption was re-considered and re-conceived, among others by cultural studies scholars working at the CCCS and by those studying consumer culture with Foucauldian analytics.

The ethnographies carried out in the 1970s and 1980s at the Center for Contemporary Cultural Studies were initially focused on the strategic consumption of cultural objects. Though academic accounts had previously regarded consumerism as a diversion from political matters, the anthology assembled by Stuart Hall and Tony Jefferson (2006 [1975]) viewed young people’s uses of consumer products as a manner of ‘resistance through rituals’, as it were. It was youth subcultures more specifically that were the foci of these analyses. As Dick Hebdige (1979) recounts, CCCS scholars intertwined the notions of ‘bricolage’ and ‘homology’ to rationalize the otherwise peculiar activities of groups like the punks and skinheads. Taken from Levi-Strauss, bricolage refers to the ways the objects of consumer culture were literally worn on the

body in ways that gave them new meaning. Consider Hebdige's (1979) description of the mods:

the mods could be said to be functioning as *bricoleurs* when they appropriated another range of commodities by placing them in a symbolic ensemble which served to erase or subvert their original straight meanings. Thus pills medically prescribed for the treatment of neuroses were used as ends-in-themselves, and the motor scooter, originally an ultra-respectable means of transport, was turned into a menacing symbol of group solidarity (p. 104, emphasis in original).

Homology, meanwhile, involves the notion that these new meanings at the same time reflected subcultures' desire to take distance from both the parent culture (i.e., the older generation) and the mainstream values of society. In their most politicized form, this 'symbolic creativity' showed frustration and dissatisfaction with a postwar society that lacked rewarding employment and educational opportunities for youth (Willis, 1977, 1990).

Though these were insightful studies of consumer culture, they did focus mainly on public displays of (constrained) agency from young males (notwithstanding the contribution of Garber & McRobbie, 2006 [1975]). According to critics, this at times lead to problems whereby researchers celebrated the gendered politics of resistance they were tasked with reporting on. McRobbie's (1991) subsequent research in many ways responded to these shortcomings. Her own ethnographic work showed how young females' greater presence in private, household spaces effectively anticipated a life course tied to traditional gender roles. This was further supported by discourses in teenage magazines that reinforced the value of, for example, hetero-normative relationships and gender-appropriate behaviour. Ann Gray (1992) also studied the gendered politics of consumption, though without focusing to the same extent on youth. For the men and women in her research, the coding of domestic labour as 'female'

differently impacted the amount of time they could engage in leisure activities like TV/VCR use. With more disposable time, “the consequence is that the male of the household quickly becomes adept in the operation of the [VCR] machine and from this position of knowledge can command some control over its use” (p. 243/244).

A central theme in these works, then, is that consumer culture is not simply a superstructural accompaniment to the economic base, but rather is a productive realm in and of itself. It is furthermore beset by its own power relations. As Gray’s and McRobbie’s research suggest, in the 1980s and 1990s CCCS scholars took interest not just in consumerism generally, but in the ‘uses’ of media specifically. In his influential, albeit brief, meditations on this latter issue, Hall (1980) influenced a series of audience ethnographies that worked from the supposition that media reception is an active, non-determinist process (e.g., Ang, 1985; Katz & Liebes, 1986; Morley, 1980). Audiences approach media with diverse backgrounds, Hall said, leading in turn to a diversity of responses to the messages ‘encoded’ in media texts. Of course, media production and marketing continually strive to impress limits on the range of possible interpretations that consumers will have, though they can never fully quell the possibility for ‘resistant’ media analyses. In this regard, media experiences can be regarded as moments of cultural expression. McRobbie (1994) takes this supposition a step further by highlighting how media culture offers opportunities for audiences and consumers not only to interpret media and make meaning, but to produce and circulate textual and material objects of their own. In her view, while researchers like Hebdige were concerned with final signifying practices – the display of cultural objects on the body, for instance – they

missed the processes of cultural production that preceded these political acts. As she writes:

my concern here is with the way in which the magazines produced by fans, the music produced by DJs, the clothes bought, sold and worn by subcultural 'stylists', do more than just publicize the subculture. They also provide the opportunity for learning and sharing skills, for practising them, for making a small amount of money; more importantly, they provide pathways for future 'life-skills' in the form of work or self-employment (McRobbie, 1994, p. 156).

The notion that media consumers can be producers as well has certainly not abated with the interactive technologies studied in this dissertation.

As we have seen, Foucault rejected the notion that power is strictly repressive even more forcefully than CCCS scholars. Yet at the same he was reluctant to speak of media and technology – a hesitancy for which he has been thoroughly critiqued (Lyon, 1994; Mathieson, 1997). It has been left, then, to those writing in Foucault's tradition to excavate the productive consequences of technological developments. In one sense, media has been regarded as an object in itself that affects daily behaviours and relations. Foucault's (1977) book Discipline and Punish highlighted the meticulous ways that surveillance could engender desirable behaviour, as opposed to simply dissuading the manifestation of deviance. The 'panoptic' method of monitoring prisoners was aimed at engendering their own self-surveillance and self-discipline. While problematizing the panoptic model in some ways (as discussed in Chapter Four), scholars writing more recently suggest that information and communication technologies can have similar effects. Closed-circuit television is perhaps the best example of this. The ostensible goal with CCTV is for members of the public to internalize a surveillant gaze, and, as in the prison model, police themselves (see Greenberg & Hier, 2009; Lyon, 1994). Others have shown how domestic technologies now engender intimate forms of surveillance as well.

For example, Mark Poster (2006) contends that computerization has effectively produced a form of hyper-surveillance (or a ‘superpanopticon’) where behaviours like consumption choices are constantly under scrutiny. Indeed, Poster asserts that, generally speaking, media like television and the Internet have become disciplinary institutions in themselves. These technologies have their differences, but are similar to prisons “in that they construct subjects, define identities, position individuals, and configure cultural objects” (p. 62). In other words, they produce desired subjects, rather than simply repressing them.

More commonly, those influenced by Foucault have charted how cultural *texts* strive to catalyze productive behaviours from their audiences/consumers. This includes instructive work on the discourses circulating through television and film, in print, and online. For instance, Margaret Carlisle Duncan (1994) found that texts in *Shape* magazine strive to instil stereotypical bodily ideals in their readership. Female consumers in particular “are encouraged via the pages of *Shape* to become both spectator and spectacle in comparing their bodies to public ideals through self-disciplining practices such as eating low caloric diets and engaging in rigorous exercise routines” (McDonald, 2006, p. 513). In this regard, the disciplinary apparatuses of modern institutions like prisons, clinics, and school physical education find their way into popular culture. Other research references Foucault’s conceptions of biopower and/or governmentality to show how media texts circulate notions of self-care and ‘personal responsibility’ at present. In her influential study of corporate philanthropy, Samantha King (2006) reveals how advertising messages within the breast cancer movement in one sense reinscribe the authority of autonomous and ‘personally responsible’ subject archetypes, and, in another sense, cast alternative (i.e., non-corporate) forms of public activism “as naive, ridiculous,

shallow, and juvenile” (p. 40; also see Jette, 2006). As described in detail in Chapter Four, there is also growing interest in the dissemination of ‘bio-pedagogies’ – that is, instructive messages on how to excise the markers of ill-health like ‘fat’ – via interactive Internet sites (Murray, 2009; Wright, 2009).

### **Research Gaps**

The technologies studied in this dissertation are thus situated within unique circumstances: on the one hand, they are located within a social, economic, and political context that, while historically contingent, is in many ways novel; on the other hand, they can be positioned alongside different, and in some ways competing, scholarly traditions on the impacts of media production and consumption. Studies of new media are presently expanding outwards in many directions; researchers, as we have seen, continue to re-consider the arguments and findings of their forebears. Yet when it comes to new technologies there nonetheless remain clear and certainly significant research areas in need of attention. The first such ‘gap’ is substantive in nature. That is to say, as the processes of media production grow ever more sophisticated, so too do commodity lifecycles shorten. Before household Internet use was fully conceptualized by scholars, for example, mobile computing arrived. Accordingly, in the broadest of senses, there are a number of new technology-forms in need of scholarly attention – ‘active’ video games, brain games, and smartphone apps are only three among them. More specifically, there is a need to unearth the precise ways in which these technologies operate. Since Interactive Health Commodities are ostensibly made to have extra-diegetic effects – for instance, in re-shaping the user’s body – it is necessary to scrutinize the procedures they rely upon to

do so. As Postman (1985) observes, the form of new technologies also affects their content, and as such research should investigate the meanings technology producers and marketers attribute to notions like health, fitness, and embodiment as well.

A second gap involves the use of theory in understanding new technologies. The many commentaries on products like the Nintendo *Wii* in popular media are, not surprisingly, bereft of theoretical underpinnings. There is a need generally for theoretically-informed research on Interactive Health Commodities, and, more precisely, for research that continues the cultural studies tradition of excavating the articulations between new cultural objects and their social, political, and economic conditions. The literature reviewed above suggests the importance of weighing the extent to which these products might reinforce the conditions of neoliberalism in particular, and how they might enhance and/or stultify ‘authentic’ experience. Third, there is room for expansion in the methodological techniques used to study new technologies. In the Methods section that follows I propose that online marketing texts are viable materials for studying new media, for they lend unique insights into (for example) the processes and scientific evidence undergirding technology production. Finally, since there is such little academic writing on Interactive Health Commodities, there is concomitantly a need to consider what practical steps can and/or should be taken in light of their arrival. In the concluding chapter of this dissertation I thus consider, in broad terms, issues of democracy, education, and citizenship as they pertain to the key findings of this research.

The study of Interactive Health Commodities will surely never be complete. But it is hoped that this research takes initial steps towards revealing both their *modus operandi*

and their participation in relations of power. Indeed, the method guiding this dissertation was specifically crafted to address the above-described gaps in the literature.

## **Method**

### **Methodological Framework**

Having established its theoretical foundations – in particular, its indebtedness to the articulation concept – I proceed now to outline the methodological prescriptions of contextual cultural studies. Scholars writing in this tradition have specifically called for a two-fold method of enquiry. The researcher is initially tasked with delineating the precise conjuncture in which the study takes place, meaning she or he is to highlight the discourses that converge to form arbitrary moments of ‘closure’. The literature reviewed above reveals that discourses and material practices related to neoliberalism, health promotion (or healthism), and the political economy of new media are relevant to this dissertation. Yet the case studies found below are also appropriately nuanced: case study one considers themes around youth, risk, and physical education; case study two examines articulations of neoliberalism and ageing; and case study three focuses on discourses of surveillance and the politics of mobile consumerism. Following King (2005), then, context in this research is far from the backdrop for analysis, but is in fact the point from which formal investigations begin. It is important to emphasize that this does not imply an understanding of context as something ‘out there’ for the researcher to know in objective ways. Contexts are on the contrary mutable, and can be viewed differently from independent perspectives. This raises questions regarding how best to evaluate cultural studies research – a point to which I return below.

The second step in contextual cultural studies is to use ‘secondary’ research techniques to scrutinize how certain objects and practices fortify, reconfigure, and/or contest the extant conditions in which they are ‘born’ (Andrews, 2002). King (2005) argues in favour of ‘methodological contingency’ at this time, where methods are reflexively selected for their ability to address key research questions. In much the same way that theory is regarded in cultural studies as a dynamic heuristic device, methods too are deemed flexible instruments, valued primarily for their ability to advance the researcher’s agenda. Here Grossberg’s well-cited comments are instructive:

I believe that one can and should use any and every kind of empirical method, whatever seems useful to the particular project. Use them as rigorously and as suspiciously as you can ... I do not think that ethnography, or any other methodology has a greater claim to being somehow more empirical than another. Use anything, including surveys and statistics, if it seems useful, but consider how they are themselves rearticulated (and their practice changed) by the theoretical and political commitments of cultural studies and of one’s own project. I am in favor of anything that helps you gather more and better information, descriptions, resources, and interpretations (as quoted in Andrews & Giardina, 2008, p. 407; cf., Wright, 2001, p. 145).

While guided by Grossberg’s epistemological spirit, cultural studies researchers have tended to make use of ethnography, historical analysis, interviewing, personal narratives, and media/textual analysis in this second stage of investigation in particular (King, 2005).

Over time the contextual cultural studies approach has proven particularly amenable to case study analyses. Ann Gray (2003) documents several benefits of case studies, including their sensitivity to relations between media and the public, their ability to demonstrate the effects of social structures on individual and group practices, and the potential that they might reveal how meanings are constructed, questioned, and/or layered upon each other. In total, “[a] well chosen case study can produce ‘intensity’ and an example of condensed layers of meaning which, through careful analysis, can produce

insights into cultural processes” (p. 68). Despite these advantages, the precise meaning of ‘case study’ is rarely made clear, and as such remains contestable. Following their astute reflections on case study projects, Rob Van Wynsberghe and Samia Khan (2007) conclude that, rather than a method, methodology, or research design (as they are commonly defined), case studies are best seen as *heuristics*. That is to say, and in close alignment with cultural studies’ methodological contingency, case studies employ different methods of inquiry to illuminate the existence and vicissitudes of particular problematics. They are furthermore ‘transdisciplinary’ in that their relevance transcends academic boundaries (i.e., they are used in sociology, educational studies, cultural studies, and so forth), and ‘transparadigmatic’ in that they appeal to researchers with varied ontological perspectives (e.g., critical realist, poststructuralist, positivist; also see Stake, 2007).

It is notable that one of the most acclaimed case studies in the cultural studies field focused on an entertainment technology. Du Gay et al. (1997) offer an in-depth analysis of the ‘circuits of culture’ surrounding the Sony Walkman, a portable, personal audio system. Instead of attributing the Walkman’s construction and rise to prominence to either individual or collective ingenuity (as popular media accounts would have it), du Gay et al. argue for an understanding of this device as indebted to its broader conditions of possibility. These include the gendered and globally integrated system of production of the late 1970s, governmental policies in favour of transnational business, the intensifying of consumerist sensibilities in the postwar era, and the sophisticated state of technological innovation at the moment the Walkman was conceived. Using textual analysis, they also found the Walkman to be loaded with variable meanings once it reached the marketplace.

The “representational repertoire” of Sony’s advertising emphasized the quality and technological sophistication of the Walkman, they say, and also was “relentlessly and overwhelmingly clustered around [the] meanings of mobility, sport, activity, leisure, and youth, youth, youth” (p. 39). This a fitting example of how specific discursive statements and industrial practices are reflective and constitutive of the circumstances in which they are located. Kellner (1995) is rightfully regarded as a luminary of media- and technology-focused contextual cultural studies as well. His critical contextual analyses of 1980s war films, for example, highlight how their symbolism and narrative structures operate in congruence (as in the case of *Rambo*) or in opposition to (as in *Platoon*) American militarism. Meanwhile, films like *Basic Instinct* and *The Hand That Rocks the Cradle* are seen by Kellner to articulate the antifeminist backlash discourses of the 1990s. He too takes interest in advertorial media – for instance, the marketing practices of both Nike and McDonald’s – and calls for research that scrutinizes both their linguistic/imagistic signifiers and their connection to economic and political structures (Kellner, 2003). Finally, as Howell, Andrews, and Jackson (2002) observe, case studies are of value in the study of sport, physical activity, and health promotion. In reviewing a case of local resistance to Nike’s globally-disseminated advertising, these authors highlight Graham Murdoch’s (1997) approbation of case study approaches in particular:

unpicking the shifting relations between the global, the state and the market, citizen and consumer, is one of the central tasks for cultural studies ... Case studies are essential, as a basis for puzzling out the complexities and nuances of current collisions and encounters as an anecdote to facile generalizations and comparisons (p. 66; as quoted in Howell et al., 2002, p. 167).

Even more specifically, Howell et al. are concerned with how the theoretical and methodological conventions of cultural studies can be mobilized to intervene in particular social conditions in the interest in redressing inequalities. The pertinence of this concern

to the studies reported on in this dissertation is something I take up in the document's conclusion.

### **Marketing and/through New Media**

As described above, and as the general designation Interactive Health Commodities suggests, the objects studied in this dissertation share many characteristics. One common feature of active video games, brain games, and smartphone apps only briefly noted, however, is that they are all marketed through detailed and rather innovative promotional websites. The case studies below use these marketing documents as entry points for examining and weighing the impacts of new consumer products. As such, this research contributes not just to a lengthy history of contextual cultural studies, but to the related tradition of critical marketing research. Marketing may well be, as Baudrillard puts it, "the most remarkable mass medium of our age" (as quoted in Kline et al., 2003, p. 71), but its history is evidently beset by incremental steps in the development of both sophisticated means for selling commodities/services and novel techniques for constructing consumer archetypes. So too has marketing been subjected to manifold academic criticisms over time.

The interwar years were a key period in the marketing industry's history, as it grew substantially and in accordance with the consumer cultures of the West. Generally speaking, the public at this time was amenable to advertising, for as Tadajewski (2010) remarks, prosperity and happiness were increasingly believed to be consequent upon the conspicuous consumption of goods and services (also see Leiss, Kline, Jhally & Botterill, 2005). At a practical level, the profusion of domestic, communication, entertainment,

cosmetic, and transportation commodities initiated a need for pedagogies on how these products should be used. Indeed, the rigidity of production in the interwar years, as well as capitalism's geographical restrictions, created an excess of consumer goods and a concomitant need to stimulate demand (Kline et al., 2003). Marketing as a result was formally incorporated into business strategies. *Marketers*, meanwhile, embarked on a mission to better understand consumer preferences, while at the same time broadcasting the value of consumerism through new media channels. Radio was especially vital in this latter task. As Leiss et al. (2005) write, "The media offered the means of bringing a disparate mass of people together, albeit perhaps in superficial ways, and brands became a symbol of unusual constancy within a modern landscape of constant change" (p. 69). Though strong in the 1920s, public support of advertising waned in the years of the Depression, as people recognized in growing numbers that industrialization could have negative economic impacts (Smulyan, 2003). Supporting this populist shift was an already-established academic tradition of advertising critique. James Rorty (1934) was an especially prominent figure. Drawing from Marx and Veblen, he claimed that advertising engenders a 'pseudoculture' that circumscribes the social, economic, and cultural potentialities of the population. Paul Lazarsfeld (1941), though not writing in the Marxist tradition, nonetheless levied the criticism that 'promotional culture' jeopardizes rather than bolsters basic human values (cf., Tadajewski, 2010; Hammer & Kellner, 2009).

Despite these criticisms, marketing practices continued to evolve in the postwar years. This was once again in keeping with the development of capitalism – particularly the growing sophistication of Fordism and mass production. It was also especially true in North America, where assembly lines and communication infrastructure were almost

completely untouched by warfare. A growing trend at this time saw commodities portrayed not simply as having particular uses from which consumers could extract value, but also as tied to *ersatz* meanings like pleasure, self-fulfillment, excitement, or love. Raymond Williams (1962) suggests that products at this time were increasingly valued for what they symbolize, as opposed to what they ‘do’, while Baudrillard (1981) famously supplemented Marx’s formulations with the neologism ‘sign value’ to account for more or less the same phenomenon (Leiss et al., 2005, p. 82). Unsurprisingly, the Frankfurt School was sceptical of such developments:

If mass communication blend together harmoniously, and often unnoticeably, art, politics, religion, and philosophy with commercials, they bring these realms of culture to their common denominator – the commodity form. The music of the soul is also the music of salesmanship. Exchange value, not truth value, counts (Marcuse, 1991, p. 57).

Just as radio had once been influential, the advent of television was a key enabler in these changing systems of meaning. Yet as Miller and Rose (2008) recount, at this point the apparatus of postwar capitalism also appropriated the methodological and theoretical conventions of the social sciences – psychology in particular – to satiate their desire to ‘know’ the consuming public. Formal methods of investigation like surveys and interviews were used to amass extensive databases on consumer tastes. This both drove and was driven by a renewed perception of citizenship: not only was identity rapidly becoming dis-articulated from one’s role in production, but as Miller and Rose (2008) write, “the ‘consumer’ came to be viewed as differentiated by age, by gender, by class and by psychological type” (p. 125). The notable point here is that at the very moment mass consumerism was flourishing, marketers were also laying the groundwork for a subsequent era of personalized or niche marketing.

As the post-Fordist era outsources labour to the Global South, it is ever more reliant on creating new markets – and thus, new advertising conventions – across the globe (Deleuze, 1995). The abbreviated commodity lifecycles of interactive technologies only exacerbates this imperative. As Kline et al. (2003) write, ads are especially lavish in computing, video gaming, and other new media industries where new iterations of hardware and software quickly replace older ones. The marketing trends initiated in the immediate postwar years thus intensified leading into the twenty first century. Companies appealed to individual consumer tastes, gleaned this information from more mature forms of market research (Andrejevic, 2007a). While a common defence of these attempts to ‘know’ the public is they are necessary steps in satiating consumer desires, Jackson, Andrews, and Scherer (2005) make the important (counter-)point that marketing practices are *constitutive* of market demographics as much as they are attendant to them. On this matter scholars have drawn connections to neoliberalism, suggesting marketing now helps construct the figure of the autonomous and responsible subject who placates her needs and wants through consumer-citizenship. As Odih (2010) observes, advertising for health products in particular incorporates the clarion call that individuals should care for themselves. Knights and Sturdy (1997) call such practices ‘marketing the soul’, meaning industry goes beyond simply deploying *ersatz* meanings by appealing to the most intimate details of one’s very existence (also see Cronin, 2004). To put this in Foucauldian terms, marketing now takes on a biopolitical function, informing people on how they can maximize their vital existence. Deleuze (1995) succinctly writes that marketing in this way has become *the* instrument of social control.

This brief overview of marketing and its discontents reveals a similar debate to that outlined in the review of literature above. In the Frankfurt School tradition, some regard marketing as repressive of true experience. Others, however, focus on how it is productive of new subjectivities. Leiss et al. (2005) summarize the latter point of view:

The power of advertising is ‘productive’ not simply because it encourages consumption, or that as a social discourse it creates cultural bias. Rather, as an institution advertising creates classifications that frame what can be legitimately be thought about goods (p. 289).

From either perspective, the need to scrutinize marketing texts and evaluate them vis-à-vis their contextual conditions persists. Not only is there is a growing body of literature on marketing related to sport, fitness, and the body, but an increasing number of studies that “are providing critical contextual analyses that locate their readings and interpretations within wider socio-historical and political economic conditions” (Jackson, Andrews & Scherer, 2005, p. 3). The compilation of advertising studies assembled by Steven Jackson and David Andrews (2005) work from the fundamental premise that such (con)textual readings are worthwhile. For example, in keeping with the basic ethos of contextual cultural studies, Andrew Grainger and Jackson (2005) show how political manoeuvring to deregulate television broadcasting in New Zealand catalyzed the proliferation of violent media imagery originating from the United States. The promotion of violent masculinities is a key subject in Jay Scherer and Steven Jackson’s (2008) research on rugby adverting, also set in New Zealand. Not only are the commercialized representations in the Adidas company’s *Black* ad campaign (promoting the nation’s men’s rugby team, known as the ‘All Blacks’) reliant on brash stereotypes of Māori culture, so too do they ignore New Zealand’s colonial legacies generally and its historical mistreatment of Māori rugby players specifically. The latter includes what the authors

describe a racist legacy of not selecting Māori athletes for international competitions. Scherer and Jackson are, in this sense, as concerned with the presence of marketing texts amid wider events and relations as they are with texts themselves. King's (2006) aforementioned research on 'pink ribbon' campaigns is an instructive contextual study as well, as it demonstrates how marketing can reaffirm the salience of consumer-based citizenship.

But where scholarship has acknowledged marketing's articulation with its broader conditions of existence, it has at the same time been less apt to consider the new media forms through which marketing takes place. Here I refer specifically to the arrival of corporate websites. At this point there is certainly widespread interest in the Internet in general. Scholars have most readily considered its dialogic capacities, as evidenced by the wealth of informative ethnographies on online communication. These include studies on the construction of identities in cyberspace (e.g., Hine, 2000; Nakamura, 2002), the negotiation of 'online' and 'offline' relationships (Miller & Slater, 2000; Wilson, 2006), and, of particular relevance to Case Study Three, the 'virtual' production and procuring of health information (Hardey, 2001; Miah & Rich, 2008). But the Internet can also be regarded as a collection of textual objects or artifacts. As Bryman (2004) writes, "[w]ebsites and webpages are potential sources of data in their own right and can be regarded as potential fodder for both quantitative and qualitative content analysis" (p. 467). To this point, we can add Brian Wilson's (2007) assertion that the methods traditionally used for studying media documents – he names content and textual analysis in particular – are still valuable in the study of new(er) online contexts. This is an important insight for those interested in marketing texts as sources of information.

Indeed, Jay Scherer (2007) suggests that corporate websites are now vital instruments for both inflecting consumer tastes and reinforcing brand affiliations. Despite sustained interest in the politics of corporate advertising, however, he notes there is still “a dearth of academic investigation pertaining to the production of electronic promotional campaigns and corporate websites” (p. 477).

What makes this elision especially problematic is that corporate websites are evidently becoming more complicated, but no less enticing, in how they portray (interactive) commodities. In fact, a central argument made in this dissertation is that, compared to previous advertorial media, the Internet offers unique opportunities to marketers, consumers, and researchers alike. Though Hwang, McMillan, and Lee (2003) write for a corporate audience, the conclusions from their research on Internet marketing are informative for critical scholars too. At a most basic level, they note that the Internet is free of constraints on the volume of information, meaning online marketing can be succinct or remarkably prolonged. Nintendo’s online Iwata Asks interview series, the main focus of Chapter Two, spans across dozens of webpages, and as such is far more exhaustive than any television or magazine advertisement could be. According to Hwang et al. (2003), a key consequence of these space accommodations is that marketers can appeal to a range of consumer audiences under a single umbrella site. The brain game websites studied in Chapter Three, for instance, are generally suggestive that brain training technologies are viable for all consumers, but are also occasionally specific in interpellating older adults. Furthermore, compared to television or print, online marketing employs a range of tactics to attract consumer attention (and money). The consolidation of media forms is a defining feature of contemporary consumer culture (Lamberti, 2004;

also see Spigel, 2004). Older audio and visual technologies are not so much expunged but rather embedded in newer ones – consider, for instance, the Apple company’s adoption of television. The corporate websites promoting Interactive Health Commodities contain myriad features, including, but not limited to: video clips of commodities ‘in use’ (e.g., video game simulations); textual summaries of the empirical evidence supporting the development of health promotion procedures; ‘confessionals’ from what appear to be real (and satisfied) technology consumers; and weblinks to news media reports on the value of different products. They sometimes contain testimonials from health and fitness experts as well, who can further corroborate the merits of interactive technologies and their relevance to broader social events or conditions (e.g., pressing health ‘crises’).

Thus, online marketing documents go far beyond basic product descriptions. From a researcher’s vantage point, they are appropriate for assessing: a) how new technologies ‘work’ (or, at least, how they are meant to do so); b) the meanings associated with these products, for example in relation to the body, gender, or fitness; and c) the subjectivities and (health) outcomes they are designed to produce. Marketing texts are thus viable study materials for this research in particular, given that they suitably address the research questions outlined earlier.

### **Complexities and Limitations**

At a time when many have rightfully raised suspicion about truth claims in general, the question of how to evaluate cultural studies research is made evermore complex. The notion of empirical validity – the traditional gauge of scholarly success – sits awkwardly alongside poststructuralist sensibilities. And yet, contextual cultural

studies offers tremendous leeway to the researcher, and it is thus still necessary to decide on whether assessments of articulation are indeed viable and instructive. Rather than jettison validity altogether, some scholars suggest it be reinterpreted for contemporary times (Lather, 1993; Richardson & Adams St. Pierre, 2008; Saukko, 2003). Patti Lather (1993) outlines four types of ‘transgressive’ validity where legitimation of research “depends on a researcher’s ability to explore the resources of different enquiry problematics” (p. 676), and, if possible, to unearth the ‘closed’ truths of the past. In ‘paralogic’ validity, for example, research is evaluated on the strength with which it highlights complexities, discontinuities, and moments of opposition. This requires more than a modicum of self-reflexivity, she suggests, especially in relation to the researcher’s complicity in fostering or sustaining power relations. Paula Saukko (2003) likewise identifies reflexivity as a key process in ‘valid’ research. For cultural studies research that employs Foucauldian analytics she suggests a form of ‘deconstructive’ validity: “research is evaluated in terms of how well it unravels the way in which certain taken-for-granted truths are not universal or timeless but products of specific historical and political agendas” (p. 21; also see Saukko, 2005). While these are laudable attempts to re-imagine a troubled scientific term, their perspectives on validity come strikingly close to simply re-stating the goals of contextual analyses. Perhaps, then, it is best to turn to Grossberg’s (1997; cf., Andrews, 2000) assessment of the criteria that form the foundations of cultural studies work. In his view, research in this tradition should strive to be:

- *Disciplined*, in that it lays intellectual claims, as opposed to accepting extreme relativism.
- *Self-reflexive* and aware of its situatedness within power dynamics.
- *Political*, in the sense that research is tied to problems like inequality.
- *Inter-disciplinary*, in that it uses materials from different scholarly traditions.
- *Theoretical*, or, more specifically, flexible in its use of theory.
- And, most of all, ‘*radically contextual*’.

These criteria allow us to depart from the fraught idea that research can be objectively measured, while also allowing a basic framework for evaluating and contrasting different studies.

The notion generalizability poses a problem as well. As typically conceived – that is, as the grafting of findings from one sample pool onto a broader population – it fails to resonate with a study of media texts, and some would argue qualitative research altogether (Becker, 1990; Stoddart, 2004). Like validity, however, scholars have made efforts to re-conceptualize this notion. Robert Prus (1996) argues that research can effectively uncover ‘generic social processes’, a concept that somewhat resembles generalizability. He attributes this concept to Simmel, though gives it texture by describing it as a term that refers to:

... the transsituational elements of interaction – to the abstracted, transcontextual formulations of human behavior. Denoting parallel sequences of activity across diverse contexts, generic social processes highlight the emergent, interpretive features of association. They focus our attention on the ‘doing’ or accomplishing of human group life (p. 142).

In this sense, the search for generic social processes is in fact the search for forces that shape and insert predictability into human experience. While in Prus’ formulation this term is grounded in an interpretivist framework, Stoddart (2004) suggests that it applies to other research paradigms as well. He specifically outlines the articulation of generic social processes and Foucault’s contention that technologies of power are replicable across institutional sites. For example, Foucault’s observation that panopticism was transported from the prison model to other modern institutions like schools, clinics, and barracks is one of his most prominent historical findings. Likewise, the Interactive Health Commodities described below show striking similarities (or generic processes) in their

methods of ‘treating’ the body and mind. This comes despite the fact that interactive media experiences are increasingly said to be customizable. Chapter Three, for instance, shows how a metaphor of bodywork is called upon in the promotion of brain training. The key point here is that while generalizing from the particular can be problematic, it is worth considering the generic techniques and procedures deployed in health and fitness interventions.

Regarding the limitations of this research, Laurel Richardson and Elizabeth Adams St. Pierre (2008) encourage an understanding of writing projects as necessarily partial, local, and situated. Judith Butler (1993) adds that there are power dimensions to claims of universality, arguing that “any analysis which pretends to be able to encompass every vector of power runs the risk of a certain epistemological imperialism” (p. 18; as cited in Brayton, 2007, p. 16). If a notable strength of this dissertation is that it scrutinizes how power is imbricated in both new technologies and the textual documents that promote them, a key limitation is that it leaves important components of media culture unexamined. Audience reception of ‘active’ video games, brain games, and smartphone apps is one such component. In 1995, Kellner highlighted a growing emphasis on ‘textualism’ in cultural studies; more than 15 years on this trend shows no sign of abating (also see Kellner, 2009). Indeed, more recently, I have argued that audience studies are lacking in cultural studies of sport and health (Millington & Wilson, 2010a). This is a conspicuous absence given the importance of ‘methodological contingency’ and ‘unity-in-difference’ in this field. It is also worth noting that it is a trend I have previously sought to address (Millington & Wilson 2010b; Millington, Vertinsky, Boyle & Wilson, 2008). Yet as Hine (2000) observes, and as argued above, there is value in using existing

methods in the study of *new* media. Though there is undoubtedly a wealth of (con)textual analyses in the cultural studies field, there is also an obvious dearth of research of any kind on the technologies studied here. As we have seen, key writing on contextual cultural studies implores researchers to use whatever methods they feel are best able to address their chosen research questions. Even if the studies found below draw from a familiar methodological toolkit, it is hoped that they indeed offer valuable, if partial, insights.

Given the calls for reflexivity in qualitative research from Lather (1993), Saukko (2003), and Grossberg (1997), it is necessary to recognize the imprint of my positioning on this research. There are longstanding debates over whether researchers can access ‘preferred readings’ of media texts that will be replicated by ‘the audience’ or whether their assessments are single points in a constellation of possible interpretations (see Alasuutari, 1999). The goal of this dissertation is not so much to predict consumer responses, but to investigate how technology producers and marketers strive to create particular incarnations of consumer-based citizenship, and thus circumscribe the range of possible experiences/interpretations that technology users will have. This is in keeping with Margaret Carlisle Duncan’s (1990) claim that ‘responsible’ textual studies are not dogmatic in their assumptions of how texts are read – or, in this case, how technologies are used (cf., Wilson, 2006). Nonetheless, the background experiences I have had as a self-identified white, male, middle class, heterosexual, Canadian, 30 year-old student-researcher surely have implications for how I see the research materials described below. As an example of how this might occur, in their formidable study of the ‘panic’ culture produced through fitness magazines, Dworkin and Wachs (2009) contend that marketers

sometimes seek to appeal surreptitiously to gay male audiences. Systems of meaning are circulated discretely, they say, so as not to ‘alienate’ heterosexual consumers that are presumed by marketers to want distance from that coded as ‘gay’. From this, it is apparent that marketers sometimes mobilize the axiom, long held in cultural studies, that meaning-making is inflected by personal histories and preferences. The key point for our purposes here is that certain meanings might appear in marketing documents for Interactive Health Commodities unbeknownst to me. It is notable, however, that the technologies studied in this dissertation strive to appeal to a broad swath of consumers; the *Wii* for example is said to be for ‘everyone’, and not just the typical video game audience of male youth. This presumably makes the meanings in recent marketing texts more accessible as well.

Finally, studying media in an era of hyper-globalization presents challenges. I am interested in the articulation of new technologies with conditions mostly relevant to the ‘West’, and more specifically England, the United States, and Canada. These countries feature similar though certainly not identical contextual circumstances, including the onset of neoliberalism and healthism, post-Fordist techniques of accumulation, and ‘crises’ of obesity and population ageing. Yet the technologies under study are also dispersed globally, and as such are sure to produce a broad range of effects. Key research in the sociology of sport has demonstrated that media messages and cultural objects, while geographically transcendent, are construed differently at the precise locales where they are consumed. The figure of American basketball player Michael Jordan, for instance, inspired both consumerism and anti-imperialist protectionism in New Zealand, fascination among youth in post-communist (and increasingly liberalized) Poland, and

stood as a signifier of assertiveness and masculinity for British youth locating him as part of the sporting Black Atlantic (Carrington, Andrews, Jackson & Mazur, 2001; Miller, Lawrence, McKay & Rowe, 1999). To some extent this returns us to questions of audience backgrounds/experiences, since these are inflected by geographic conditions. It is necessary to acknowledge, however, that factors like domestic policies and population trends will impact the distribution, marketing, and consumption of Interactive Health Commodities as well. In countries not experiencing population ageing, for example, advertising for brain games might not contain the same images of ‘greying’ consumer audiences.

### **A Note on Reading the Case Studies**

How does one read a book, Brian Massumi asks in his foreword to Deleuze and Guattari’s (1987) A Thousand Plateaus, that deploys a collection of theoretical terms, an obscure technical vocabulary, and whose chapters are said by the authors to be consumable in any order? His best response is to follow the authors’ suggestion to approach it as one would a record. Each chapter is a song: its author recognizable, but its themes mostly disarticulated. Just as Neil Young moves through commentaries on the racial politics of the American South (‘Alabama’), ageing and masculinity (‘Old Man’ and ‘A Man Needs a Maid’), and the miseries of addiction (‘The Needle and the Damage Done’) in his album *Harvest*, so too do Deleuze and Guattari offer relatively isolated meditations on bodies without organs, the spatial politics of the ‘war machine’, and the particularities of a rhizomatic ontology. As Massumi says:

When you buy a record there are always cuts that leave you cold. You skip them. You don’t approach a record as a closed book that you have to take or leave. Other cuts you may listen to over and over again. They follow you. You find

yourself humming them under your breath as you go about your daily business  
(p. xiv).

If the reader wishes, the case studies in this dissertation can be read independently and in unpredictable order as well. In many ways they stand alone. But I would suggest, on the contrary, that the structure I have laid out be followed fairly closely, not just because I hope the reader is disinclined to skip particular ‘cuts’ (I also hope she or he is not left ‘cold’ at any moment!). In searching for a metaphor to partner with this proposition, I would suggest this body of work is more a musical than a record; more *Les Misérables* than *Harvest* or *After the Goldrush*. This first chapter has introduced key concepts, just as *Les Misérables*’ overture contextualizes Jean Valjean’s plight. The subsequent case studies are unique, if slightly repetitive in their use of theoretical and methodological tools. Foucault and Deleuze make repeated appearances, as does the method of (con)textual analysis. Similarly, *Les Misérables* moves through different scenes: Jean Valjean eludes Javert; Cosette departs from her mother, Fantine; the revolutionaries plot their resistance. But while these moments are distinctive, linking them is a repetitive melody carved out in the very first scene, whence the prisoners sing, as they toil, “look down, look down, upon your fellow man.” Finally, unlike *A Thousand Plateaus*, this research builds towards a concluding essay that explicitly ties together the case studies’ overlapping themes. It also accounts for future directions by suggesting avenues for complimentary research. In somewhat similar fashion, *Les Misérables*’ finale resolves the stories of Valjean and Javert. For the revolutionaries, though, as for the general project of studying Interactive Health Commodities, life is only about to start.

## **2. *Wii* has Never Been Modern: ‘Active’ Video Games and the ‘Conduct of Conduct’<sup>1</sup>**

The study of video games has recently become a burgeoning field of inquiry. This is encapsulated in Wolf and Perron’s (2003) claim that gaming research is “the hottest and most volatile field of study within new media theory” (Wolf & Perron, 2003, p. 1). Among the many topics of interest to video game scholars, embodiment is now a central focus for theorists and empirical researchers alike (e.g., Gee, 2008a; Baerg, 2007; Behrenshausen, 2007). This no doubt stems from the emergence of the body as a principal concern across a range of scholarly disciplines (Shilling, 2007), and from the fact that bodily experiences are central to the consumption of new digital devices (Lahti, 2003). Indeed, in blurring distinctions between people and machines, new media have demanded reconsideration of the ontological status afforded to humans, as well as that which we accredit to non-human technologies. Lahti (2003) contends that video games in particular have challenged the hegemony of audio-visual understandings of new media. Gaming technologies, in Lahti’s view, are the paradigmatic site for human/non-human transgression and hybridity, for both body and technology are absorbed in a ‘cybernetic continuum’ with the consumption of these devices.

In this paper I explore the politics of hybridity and embodiment as they relate to video games, with a focus on the ways new video game systems potentially foster variegated forms of control. Despite a prevailing interest in the transgression of boundaries that separate people and machines, video game scholars have yet to

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<sup>1</sup> The final, definitive version of this paper has been published in *New Media & Society*, 11/4, June/2009 by SAGE Publications Ltd, All rights reserved. © [Brad Millington]. Website: <http://online.sagepub.com>.

investigate the ways human/non-human hybridity might permit control over corporeality. I take up this issue with an examination of Nintendo's new 'Wii' gaming console and *Wii Fit* video game. Though my interest lies with these technologies in particular, I suggest they might signal a general trend toward the use of 'active' video games – a term bestowed upon games that rely on human movement, often in the form of physical exercise – for 'watching over' and managing consumer bodies. The analysis of the *Wii* and *Wii Fit* draws primarily from an interview series entitled 'Iwata Asks' where Nintendo labourers reflect on the development and possible uses of these products. Theoretically, it is predicated on Latour's (1993; 1999; 2005) foundational works on hybridity and Foucault's (1994; 1997) influential notion of 'governmentality'. It also borrows from theorists who have provided important 'updates' to Foucault's oeuvre based on the contemporary salience of risk politics and the prominence of sophisticated information and communication technologies (Rabinow, 1996; Deleuze, 1995). I assemble these works to contend that the *Wii*, by way of its intimate connections with the body, is a device that potentially serves to 'conduct the conduct' of individuals and groups. Specifically, it invokes and reinscribes the particularities of both 'governmental' and 'post-disciplinary' control (Rabinow, 1996). Influenced by Latour's exhortations towards recognizing the agency of non-humans, I argue the *Wii* might be a particularly influential innovation in risk-based post-disciplinary contexts: rather than merely connecting 'at risk' subjects with human experts, the *Wii* behaves as an autonomous '*quasi-object*' risk expert, able to diagnose risk tendencies and prescribe basic behavioural remedies. In this regard, the term 'active' video game takes on new meaning, signalling not only the activity of human users but also the agency of the *Wii* itself. I

conclude by reflecting on the components of the *Wii*'s development left unattended in the Iwata Asks series.

### **The Nintendo *Wii* and *Wii Fit***

The *Wii* can be categorized in the family of 'exergames' or 'active' technologies that induce dynamic physical movements from their users (Economist.com, 2007). The innovativeness of the *Wii* lies primarily with the landmark *Wii Remote* controller, a wireless device held by the player so as to translate somatic movements onto a video screen. Upon its release, Nintendo heralded the *Wii* as a technology that could transcend the traditional video gaming preserve of males aged 18 to 24 (Nintendo E3, 2007; also see Ms.Nintendo-Europe.com, 2007). This redressing of gender and age disparities in consumption was to be realized in part through a focus on health and the body, as health promotion was viewed by Nintendo as a theme around which families might convene (Nintendo E3, 2007; Us.Wii.com, 2008, Volume 4, Part 5). It is perhaps not surprising, then, that sport-based games were among the first made available to *Wii* consumers. Though some in the media observed that games like *Wii Tennis* might serve as exercise tools (e.g., Pogue, 2006), Nintendo's adoption (or commodification) of health promotion was not fully realized until the release of '*Wii Fit*'. Like *Wii* games, fitness-oriented *Wii Fit* activities such as yoga and dance operate by developing a cybernetic continuum that synchronizes 'real' and 'virtual' bodies. *Wii Fit* supplements the original *Wii* console with the *Wii Fit Balance Board* – a wireless platform that is sensitive to the slightest of movements, such as the shifting of one's weight while standing upright on the board. It

also features software that enables users to record and track bodily measurements such as Body Mass Index (BMI), a weight-to-height statistic (see Nintendo.com, 2008b).

Following the release of the *Wii*, and again with the unveiling of *Wii Fit*, Nintendo made available lengthy interviews with company labourers who were integral to the development of these technologies. These discussions were led by company President Satoru Iwata – hence the series title, ‘Iwata Asks’ – and were posted online (Nintendo.com, 2008a; Us.Wii.com, 2008). My analysis in this paper draws primarily from this series. Specifically, following researchers who argue that Internet materials can be studied with the use of conventional qualitative methods (Bryman, 2004; Gillett, 2003; Hine, 2000; Wilson, 2006), the Iwata Asks documents were treated as textual artefacts, and were subjected to multiple critical readings. Initial readings were made with the goal of developing general knowledge about the *Wii* and *Wii Fit*. Subsequent readings involved coding for themes related to hybridity and governmentality – for example, how ideologies of health and the body seemed to inform labour practices, or how Nintendo imagined the *Wii* would merge with the consumer body. I also searched for news sources (e.g., BBC News, 2008) and English-language websites that provide additional information on the *Wii* (e.g., Nintendo.com, 2008b, 2008c; Nintendo E3, 2007; Getupandplay, 2008). These sites were also treated as texts and were coded for the aforementioned themes.

It is difficult to judge with certainty the influence of Iwata Asks amongst various audiences. Nintendo ostensibly sought a diversity of gamers with this series, since many of the themes emphasized by company labourers – healthy living, exercise, and familial relationships – are themes that the company deems vital to expanding gaming markets.

Moreover, while video game companies have long attracted gamers by publishing esoteric game information through media outlets like niche magazines (Kline et al., 2003), *Wii*-related websites generally, and the Iwata Asks documents specifically, provide basic ‘how to’ information that would likely appeal to novices as well. It is notable, however, that Iwata Asks received little attention in the mainstream press (despite countless reports on the *Wii* itself), while gaming sites that are geared to dedicated video game audiences covered and provided links to these documents (e.g., Gamespy.com, 2008). Despite Nintendo’s best efforts, then, it is likely that existing video game users were exposed in greater numbers to Iwata Asks than were new consumer demographics. That being said, the public visibility of Iwata Asks bears little impact on this particular study, which was designed to explore how the ideologies and practices of Nintendo influenced the development of the *Wii*, and how this impacts and possibly delimits the ways in which this commodity will be interpreted and ‘used’.

### **Latour and the Active ‘Quasi-Object’**

A theme that connects Latour’s numerous meditations on hybridity (1993; 1999; 2005) is that humans and non-humans are necessarily brought together through what he calls ‘translation’. Technologies emerge to a great extent through the machinations of human producers, and as such the agency of people is translated, absorbed, or ‘folded in’ to non-humans. Translation also involves processes whereby technologies are reintegrated into the body (often during consumption), leading to corporeal and physical changes and fostering new iterations of subjectivity. Like Haraway (1991), then, Latour portrays the boundaries of humanity and technology as permeable: humans are

continuously ‘nested’ or translated into non-humans; non-humans, in return, permeate the body politic and the individual body. Recognizing this enables Latour to bypass the binary logic of objectivity/subjectivity debates. ‘Pure’ subjects and objects are replaced in his schema by hybrid bodies and quasi-objects, respectively. Moreover, it buttresses Latour’s contention that *both* humans and non-humans serve as ‘mediators’ endowed with agency. It is commonplace to recognize agency in human behaviour, yet it is rather unconventional to do the same for non-human technologies. Through their convergence with people, however, technologies transcend mere passive transmission of information, and (like people) serve to actively transform the connotations that are relevant to any given context (Latour, 2005, p. 39). These transformations in meaning (or ‘mediations’) can manifest in myriad ways. ‘Interference’, for instance, occurs when a human or non-human mediator intervenes in a context to cause a shift in the existing ‘program of action’. ‘Composition’ involves articulations of numerous mediators en route to a final goal (Latour, 1999).

No doubt owing to the rarity with which non-humans are seen to have agency, Latour supports these conjectures with practical applications. The speed bump is an instructive case. The non-human speed bump emerges through the associations of people and various technologies (i.e., through ‘composition’). The ultimate goal or ‘program of action’ of these collaborations is to slow traffic to safeguard surrounding pedestrians. The speed bump thus appeals in theory to drivers’ “morality, enlightened disinterest, and reflection” (Latour, 1999, p. 186). Once implemented, this goal is likely realized (i.e., traffic is slowed), but, given the shape of the speed bump, drivers may in fact decelerate only to preserve the underside of their vehicles. The speed bump thus successfully

‘interferes’ in the context of the roadway, but in doing so transforms the meanings surrounding drivers’ behaviour. An original *moral* injunction is replaced by rather *selfish* motives. In this sense, for Latour, the speed bump actively mediates meaning. Another example sees the hotel owner, frustrated that room keys are being lost or kept by customers, taking various steps to alleviate this. Whence a courteous sign by the check-out desk fails (“please return your keys”) an oversized stick is affixed to each key. Now the hotel owner may arrive at her desired outcome, but customers oblige because the keys have become altogether unwieldy, not because they feel morally compelled. The stick is an active agent.

Mediation, then, can be defined as an expression of agency from humans or non-humans that transforms meaning (Latour, 1999). Translation is a relation that brings mediators into co-existence (Latour, 2005). In We Have Never Been Modern (Latour, 1993), translation and mediation are seen as central practices upon which Western modernity is predicated. Though translation is ubiquitous, the ‘modernizers’ – a group that includes a litany of canonized philosophers and scientists – have sought to deny translation by disentangling and partitioning ‘nature’ and ‘culture’. This is evident, Latour argues, in the work of researchers who have aimed to divide ‘the symbolic’ domain of meaning from the natural world of ‘things’ (Latour, 2005, p. 83). It is also apparent in mundane and trivial events as well, such as the dividing of science, politics, culture, and so on, in the daily newspaper (Latour, 1993). Latour deems this modern, taxonomic desire to be both tyrannical, in that it has been propagated dogmatically, and disingenuous, in that it belies the ubiquity of translation. Yet it is also ironic: the efforts of modernizers to separate people from technologies has paradoxically enabled

human/non-human imbrolios to flourish, largely in that people have *employed* technologies so as to *separate* them from the ‘pure’ human body. With this claim, Latour’s history of modernity approximates a ‘repression hypothesis’ of people and machines (Foucault, 1978). By denying translation, the modernizers inadvertently triggered a discursive and material explosion of hybrids. This brings clarity to the title of Latour’s (1993) foundational text. If modernity is based on the separation of people and technologies, then we in fact have never been modern.

In what follows I will argue that the *Wii* and *Wii Fit* exemplify this confluence of people and machines. Specifically, they undergo and initiate various forms of translation (both ‘interference’ and ‘composition’) in their encounters with human labourers and consumers. This ultimately renders these devices, much like the speed bump, quasi-objects that transform meaning – in their case, the meanings associated with video game use.

### **Wii has Never Been Modern**

In the first instance, Iwata Asks suggests that the *Wii* emerged through amalgamations of human and non-human ‘mediators’. Indeed, the *Wii*’s existence stems from the machinations of human producers – as Latour (1999) says, technologies are ‘congealed’ labour (p. 189) – and from an array of smaller, constituent technologies. Nintendo General Manager Genyo Takeda succinctly describes this relationship between people and technologies as a “human-machine interface” (Nintendo.com, 2008a, Volume 1, Part 1). It is one that is perhaps best exemplified in the development of the venerated *Wii* Remote controller. Nintendo worker Akio Ikeda describes how the Remote

manifested through the attempts of (active) labourers to harness the powers of (equally active) technologies:

In the early stages of development we ran into a number of problems that we hadn't anticipated, like the fact that the controller would react to fluorescent light, for example. Creating a mechanism that prevents the controller from responding to fluorescent light and sunlight may sound like low-profile activities, but it still gave us a lot to work on (Nintendo.com, 2008a, Volume 2, Part 3).

Ikeda essentially describes a partnership or 'interface' between people and technologies where humans who 'create' and non-humans that 'react' or 'prevent' are folded together. This, in Latour's (1999) vernacular, is mediation by 'composition', as it involves the assembling of numerous active mediators to achieve a specific outcome.

These labour processes are significant in that their products (the Remote, the *Wii Fit* Balance Board) facilitate what Nintendo describes as precise virtual representations of human movement: "The *Wii* Balance Board is more than just a scale – it can read your real-life movements and bring them to life on screen, just like the *Wii* Remote controller" (Nintendo.com, 2008b, 'What is *Wii Fit*'). Such virtual simulacra are only realized, however, when translation occurs yet again. In this instance, the *Wii* 'interferes' in human activity by transgressing the imaginary boundaries that divide people and technologies. When designing the *Wii*, Nintendo imagined the game's Remote might intervene by surreptitiously 'folding in' to the body: "... when playing a game, the nearest thing to the player is the controller. The controller should therefore be regarded as an extension of the player rather than as part of the console" (Nintendo.com, 2008a, Volume 2, Part 1). The *Wii Fit*'s Balance Board makes similar somatic linkages. Software Developer Takao Sawano labels this innovation a "controller used with the feet" (Us.Wii.com, 2008, Volume 2, Part 4). Product Developer Takeshi Nagareda, meanwhile, expounds on how

sensitive it is to fluctuations in body weight and human movement. Nintendo workers, he says, were provided two demands:

The first was that the Wii Board had to be able to measure the daily changes in a person's weight. If a person drank some juice and gained 200g, the Wii Board needed to be accurate enough to be able to detect that change. The other demand was that it had to be able to detect the shift in a person's balance ... the Wii Board needed to be able to send 60 signals a second to report the shifting balance of the user (Us.Wii.com, 2008, Volume 2, Part 3).

In turn, this sophisticated sensory capacity contributes to the simulation of 'real' sporting movements. In *Iwata Asks*, Software Developer Katsuya Eguchi expresses pride over the verisimilitude rendered with Nintendo's product: "... these games have been designed so that when a person who has actually played the sport picks up the controller, they can tell how similar the game is to the actual sport" (Nintendo.com, 2008a, Volume 4, Part 3). *Wii* games seek to bolster this blurring of 'real' and 'virtual' spaces with authentic visual and auditory signals. Players can construct personalized avatars (called 'Miis') that represent their movements on-screen. Though the Miis have a cartoonish aesthetic, and thus deviate from recent trends in video games towards authentic identity representations, they at once evoke realism in that they can be tailored to mirror the player's 'actual' (or perceived) appearance (Nintendo.com, 2008c, 'Mii Channel'). The acoustics of *Wii* games evoke realism as well: "If you're shaking during the Half Moon pose ..." in *Wii Fit Yoga* for instance, a virtual trainer "... might respond with helpful tips on how to calm down with deep breathing" (Nintendo.com, 2008b, 'Training').

Another way of merging with the consumer is through statistical representation of the body. It is in such cases that Nintendo's focus on health and fitness is perhaps most apparent. "We thought that the *Wii* would be a device that would be placed in the living room ..." notes a company spokesperson in a video posted online, "... And the one

subject we felt we had to have in order to achieve this was health” (Nintendo E3, 2007; also see Ms.Nintendo-Europe.com, 2007). A number of software tools thus enable players to gauge their physical fitness. *Wii Fit* impels gamers to take an initial ‘Body Test’ comprising a series of supposedly objective calculations (BMI, center of balance). These dovetail together so as to determine the user’s overall ‘Wii Fit Age’ (Nintendo.com, 2008b, ‘Body Test’), a measure whose very existence implies that it improves upon, if not fully supplants, chronological age as a determinant of one’s health. The *Wii* thus intervenes at the site of the body with the apparent aim of providing a more accurate corporeal diagnosis than even the most established and seemingly incontrovertible ‘real life’ statistics. Indeed, ‘Wii Fit Age’, unlike chronological age, can *decrease* over time, and individuals are thus encouraged to track their progress with the help of health measures and graphing technologies (e.g., BMI graphs – Nintendo.com, 2008). These codified representations of corporeality work in concert with visual depictions of the body: changes in a player’s weight (and thus BMI), for example, engender corresponding vacillations in the size of her virtual avatar (Us.Wii.com, 2008, Volume 4, Part 5).

The *Wii* is thus initially imbued with both human agency and constituent technologies during production, and ultimately reintegrates with the consumer body in various ways. The eventual ties that develop between player and machine surely elicit a range of emotional and experiential consequences (e.g., pleasure, pain), not least because active humans can engage with the *Wii* in diverse ways. Importantly, one potential consequence is that the *Wii* creates new articulations of technology-mediated control.

## **Video Games and the Conduct of Conduct**

Foucault's (1994; 1997) concept of 'governmentality' is useful in conceptualizing how the *Wii* might contribute to the administration of consumer bodies. Rather than a centrifugal state apparatus, 'government' in Foucault's scholarship encompasses all practices involved in the 'conduct of conduct'. Under conditions of sovereignty, state repression served as the *modus operandi* for control of the populace. This was best evidenced, as Foucault says, in the monarch's right to *take* life or *let* live. With governmentality, control is dispersed throughout the body politic. The subject is governed through a constellation of techniques that emanate both from remote loci of power and from individual subjects themselves. Repression is thus complemented by other rationalities – for example, disciplinary interventions aimed at reshaping corporeality, or calls for personal responsibility over matters such as health and fitness (see Foucault, 1977, 1986). The broad goal of these articulations is to connect a politics of the singular body (i.e., 'anatomo-politics') to a 'bio-politics' that aims to police and sustain life for the broader population. As Foucault (1978) writes, with the advent of governmentality, "the ancient right to *take* life or *let* live was replaced by a power to *foster* life or *disallow* it to the point of death" (p. 138).

In an instructive passage, Foucault (1978) describes anatomo-politics and bio-politics as "two poles of development" that are "linked together by a whole intermediary cluster of relations" (p. 139). Technologies fitted with measuring and statistical capabilities have long been important components in this. As Nikolas Rose (2000) writes, "[t]hought becomes governmental when [it's linked to a technology]" (p. 145). This is most evident with statistics that are administered to identify, measure, and control the

nation-state – census measures, for example. Indeed, in Foucault’s schema, ‘population’ refers primarily to state-level social bodies. A common product of these interventions is the transformation of subjects into ‘calculable people’ – that is, individuals who employ statistics to understand subjectivity and to bolster practices of reflexive self-monitoring (Rose, 1999). Yet while these are foundational ideas, Foucault’s focus on historical antecedents left him conspicuously silent on the social impacts of postwar information technologies (Haggerty, 2006). His analytics have certainly influenced important works on the technologies of government (Burchell, Gordon & Miller, 1991; Rabinow, 1996; Rose, 2001), however a notable gap lies in the role of video games in shaping people’s behaviours.

Through myriad features that both discipline the body and encourage responsabilization, the *Wii* evidently connects anatomo-political concerns (specifically over individual fitness) with bio-political anxieties over the wellness of the population as a whole. The body-machine continuum that is constructed in one’s engagement with the *Wii* can first be seen as enabling a disciplinary force to be exerted over the body. Certainly not all *Wii* games function in this manner, yet Iwata Asks suggests that the disciplining of corporeality was important to Nintendo producers, and that disciplinary control was incorporated in numerous gaming features. *Wii Sports* games appropriate movements from the repertoire of ‘real’ athletics, a domain certainly associated with disciplinary power and highly specified and efficient bodily activities (Markula & Pringle, 2006). As noted, Nintendo producers take pride in their rendering of a sporting simulacrum where players experiment with kinaesthetic movements that replicate those of ‘real’ athletics (Nintendo.com, 2008a, Volume 4, Part 3). They also note how *Wii*

activities potentially contribute to the construction of compliant, or docile, subjectivities. For example, worker Toru Minegishi used the *Wii Fit* to rectify faults with his own center of balance: “[A]s I continued to play *Wii Fit* on a daily basis,” he says, “I managed to bring my center of balance to the center of my body” (Us.Wii.com, 2008, Volume 4, Part 5). The *Wii Fit* features other disciplinary tools of this sort. The game’s virtual trainers, for instance, reproach participants failing to maintain consistent levels of activity. “[T]he trainers will keep an eye on your movements,” says Yohei Miyagawa, “so if you get off the *Wii* Board in the middle of an exercise and slack off, the trainer will notice and tell you off or ask you to come back” (Us.Wii.com, 2008, Volume 4, Part 5). Discipline in this instance takes on a distinctively surveillant character. Specifically, docility is achieved in processes that resemble what Smith (SportsBabel, 2007) labels ‘panhaptic’ control. He specifically describes how the electronic chips affixed to the shoes of marathon runners allow their movements – especially those that deviate from the prescribed path – to be monitored from a distance (also see Rich & Miah, 2009). In the case of the *Wii*, the (hybrid) subject is ‘seen’ by the virtual trainer through the tactile conjoining of flesh and technology at the site of the balance board. This ‘vision’ permits not only control over activity, but also an awareness and control over patterns of *inactivity*. The ‘gaze’ of the *Wii* identifies disruptions in the body-machine continuum and perceives these as (unwarranted) rest.

These features that work towards the creation of disciplined corporeality are complemented by the promotion of already-disciplined bodies in *Wii* software. This implies that ascetic devotion to a *Wii* regimen will lead to ‘ideal’ corporeality for video game consumers. The uses of media to champion lean, muscled, and gender appropriate

bodies are well-documented (Markula & Pringle, 2006; MacNeill, 1998). *Wii Fit* in particular ascribes cultural currency to such imagery. ‘Virtual trainers’, for example, are lean and well-muscled, and approximate a ‘real’ human figure in their depiction (Nintendo.com, 2008b, ‘Training’). This verisimilitude is significant: it draws stark contrasts with alternate representations of subjectivity in *Wii* games (namely the cartoonish Miis), thus emphasizing the trainers’ role as luminaries of physical culture.

What can be referred to as ‘responsibilization’ techniques are also used to activate the sporting body. The measuring technologies embedded in the *Wii* represent the material body in a variety of ways, and are ostensibly deployed to promote reflexive monitoring of the self. The fluctuations in shape and size of the player’s virtual reflection (i.e., Mii) provide immediate and constant updates on her ‘real’ bodily appearance. Distortions in the Mii’s aesthetic are based primarily on the user’s weight, as we learn from Designer Yoshiyuki Oyama: “I’ve designed the Mii’s figure to change depending on the changes in your own weight. As you continue recording your weight, you’ll be able to watch the changes in your Mii’s figure at a sped-up rate ...” (Us.Wii.com, 2008, Volume 4, Part 5). This kind of interaction constructs a feedback loop that allocates ‘rewards’ based on devoted self-monitoring. Oyama continues:

... I hope you’ll weigh yourself every day so you can experience this feature for yourself. I believe this is the kind of game where you’ll keep making new discoveries as you continue playing. Your reward for your dedication, of course, is watching your Mii lose weight (Us.Wii.com, 2008, Volume 4, Part 5).

By generating corporeal ‘discoveries’ of this sort, the *Wii* is portrayed as indispensable in the process of (literally) weighing one’s bodily successes. BMI graphs as well are ostensibly made to create ‘calculable people’ (Rose, 1999) who take responsibility for health and corporeality, as these diagrammatic representations reflect the user’s

adherence to an exercise regimen. In *Iwata Asks* we learn that some measuring technologies emerged from the personal experiences of Nintendo labourers, such as the graphing tools born out of General Manager Shigeru Miyamoto's own successes with recording and monitoring his personal weight changes (Us.Wii.com, 2008, Volume 1, Part 1).

Though initially directed at the singular body, the above described disciplinary and responsabilization technologies also evoke, and apparently seek to redress, concerns over population health as well. The *Wii*'s measuring features perhaps best exemplify such biopolitical motivations. The weight-to-height measure BMI, for example, is an individual statistic that exists only in relation to a population norm, as one's BMI score is categorized based on its proximity to what is deemed 'normal' for the masses. The scores that define a person as 'underweight', 'normal', 'overweight', or 'obese', however, have changed over time, showing BMI to be based on a mutable and reflexive understanding of what a healthy individual *and* healthy population looks like. These categorizations vary between some countries as well (Gard & Wright, 2005). BMI thus subjects the individual to a sweeping and homogenizing force – bodies are treated *en masse* – so as to render a population filled with subjects that are objectively 'healthy' and 'normal'. A commodified bio-politics also materializes in Nintendo's promotion of the *Wii*. According to Nintendo, the *Wii* was constructed in part to satiate the company's desire to see widespread improvements in health and physical fitness. This is illustrated in the *Iwata Asks* section heading 'A Wish for *Everyone* to Become Healthy' (Us.Wii.com, 2008, Volume 4, Part 5, emphasis added). At the very least, Nintendo's offering of health-promotion tools and health-based rhetoric can be viewed as an attempt to

capitalize on the currency of health issues (e.g., obesity) among many state-level governing bodies. The myriad country-specific webpages that have been developed for both the *Wii* and *Wii Fit* further indicate that these technologies are thought to be appropriate for health interventions in numerous states. The website [Getupandplay.ca](http://Getupandplay.ca) (2008) encourages Canadian families in particular to take the ‘Wii Challenge’, which involves regular participation in kinetic gaming activities.

As studies charting the global circuits of cultural commodities suggest (e.g., Andrews et al., 1996; Carrington & Wilson, 2002), the *Wii* is likely to articulate in unique ways with the politics of health and fitness in different countries. Given that it encourages a form of market-based self-care, however, it neatly complements neoliberal strategies for motivating ‘unhealthy’ populations in particular. For example, and as Bercovitz (2000) contends, health promotion programs in Canada – even public ones – increasingly place the onus for maintaining health and physical activity on the individual consumer-citizen. She demonstrates how Canada’s ‘Active Living’ campaign especially emphasizes personal responsibility over one’s livelihood without accounting for the structural determinants of health. A leading concern for scholars researching and writing about these forms of neoliberal health promotion is that consumer-based self-vigilance is far easier to enact for the materially privileged. As Nintendo strives to include new consumer demographics – adults, women, families as a whole, and not just young males – into their market share, there remain class-based barriers to engaging with their products. From this perspective, while the company on the one hand deploys biopolitical messages that urge adherence to population norms, and that express how personal ‘empowerment’ and ‘improvement’ can be won through consumerism, on the other hand the prohibitive cost

of Nintendo's fitness hardware and software can be seen as antithetical to their expressed wish for 'everyone' to be healthy. Much as Foucault (1978) described the deployment of discourses on Victorian sexuality as self-affirmation techniques for the population's 'elite', so too would I argue that the *Wii*'s deployment in some ways reaffirms and naturalizes class-based differences.

### **Risk Politics, Post-Discipline, and the Quasi-Object Expert**

While Foucault's analytics provide insights into the politicized conditions in which the *Wii* operates, they do not account for new rationalities that have emerged alongside more traditional forms of governmentality. Rabinow (1996) builds from Foucault to illustrate how "the two poles of the body and the population are being rearticulated into what could be called a post-disciplinary rationality" (p. 91; cf., Castel, 1981). His work is particularly informative for showing how risk politics have engendered novel social arrangements and forms of control. Direct therapeutic intervention, he argues, has to a great extent been supplanted by "a preventive administrative management of populations at risk" (p. 100). That is to say, expertise is increasingly deployed to attend pre-emptively to those pre-disposed to 'problematic' conditions or behaviours. This complies with Rose's basic definition of risk as "... a family of ways of thinking and acting, involving calculations about probable futures in the present followed by interventions into the present in order to control that potential future" (2001, p. 7). Furthermore, according to Rabinow (1996) health interventions increasingly address the discrete elements of the body – a fragmentary anatomo-politics – rendering the subject not a homogenous entity but a "sum of diverse factors amenable to

analysis by specialists” (p. 100). These somewhat new articulations of anatamo-politics are complemented by a shifting bio-political terrain. Risk *communities* function to a growing extent as the loci of government, thus shifting the focus of bio-politics away from the state population as a whole and onto smaller, more localized groups (Rose, 1996).

Though not focused to the same extent on risk, Deleuze (1995) similarly documents the shifting governmental landscape. He is more concerned with its new forms of technological interpellation. Information and communication technologies, Deleuze points out, are what are most important in scrutinizing specific elements of the body or isolated social behaviours. Doing so enables subjectivity to be re-imagined through codes or ‘passwords’ – that is, through weighted alpha-numerical values that define *aspects* of the individual. “We’re no longer dealing with a duality of mass and individual,” he says, highlighting, like Rabinow, how the twin poles of anatamo- and bio-politics have changed, “Individuals become ‘*dividuals*,’ and masses become samples, data, markets, or ‘*banks*’” (p. 180). In effect, contemporary subjects and communities are imagined and called upon through strategies that reproduce corporeality in codified language. Passwords become mechanisms for ‘unlocking’ knowledge of the self.

While serving to ‘conduct the conduct’ of individuals and groups in ways defined by Foucault, the *Wii* also functions as a ‘post-disciplinary’ technology in different ways. This is first apparent in the *Wii*’s deployment in risk communities such as young people’s physical education classes. The notion that youth are susceptible to morbidity is prevalent in most Western states, having invaded institutional programs and everyday parlance (McDermott, 2007). Entertainment technologies, including video games, are often

considered among the chief culprits contributing to the ubiquity of ‘deviant’ youth bodies, as noted at the very outset of this dissertation (Gard & Wright, 2005). Physical education (PE) is perhaps the paradigmatic site for interventions that mobilize obesity epidemic discourses. Schools in Worcestershire, England recently encouraged health promotion amongst youth with a program that promotes physical activity through ‘virtual’ *Wii* exercises. Despite protests from health advocacy groups, this initiative was supported by government officials – who gave it a national sport development award – and was deemed a success by policy makers (BBC News, 2008; Cooper, 2008). This latter group rationalized that the *Wii* would reach those lacking physical education, and thus, by implication, those most ‘at risk’: “The program specifically targeted children who missed out on physical education, as well as those who opted out of participating in after-school clubs” (CAHPERD, 2008). Though this type of intervention has yet to be fully integrated in PE, elsewhere educators are experimenting with the *Wii*, *Wii Fit*, and other ‘active’ video games like *Dance Dance Revolution* (BBC News, 2006). Whether successful or not, these programs are significant in that they contribute to a growing discourse that assumes both the ‘at risk’ status of youth communities and the ability of ‘active’ technologies to administer health and physical activity at a community level. There is a lengthy tradition of using physical education as a site for deconstructing the body in the interest of promoting fitness and normalcy (Gard & Wright, 2001; Kirk, 2004; Vertinsky, 2002). With the *Wii*, however, we find the very novel use of the gaming technologies once thought antithetical to health promotion in such initiatives. This invokes an interesting irony: the *Wii* stands as a technological solution to problems

purportedly ushered in (at least in part) with a ‘Western’ lifestyle that is reliant on technologies for entertainment and convenience (Giddens, 1990).

Furthermore, the *Wii* evidently enables a fragmentary anatomo-politics in that it screens not just the body as a whole but also its constituent parts. Nintendo’s Senior Managing Director Shigeru Miyamoto, in a section of *Iwata Asks* tellingly labelled ‘The Importance of Being Aware of One’s Body’, surprisingly contends that *Wii Fit* is not a health promotion tool *per se*. Rather, *Wii Fit* is a game that facilitates corporeal discoveries: “I don’t think *Wii Fit*’s purpose is to make you fit ...” he says, perhaps creating confusion around the game’s title, “... what it’s actually aiming to do is make you aware of your body” (Us.Wii.com, 2008, Volume 1, Part 5). In a video promoting the *Wii Fit*, a Nintendo spokesperson undergoes a progression of corporeal measurements that demonstrates this device’s capacity to construct and relay corporeal information that is otherwise hidden from the subject. This process begins with the conjoining of flesh and technology, and is propelled by the *Wii*’s ability to scrutinize isolated elements of the body. The text produced by the *Wii* that appears on the Nintendo worker’s video screen reads as follows:

Now please stand on me in a natural way.  
Next, relax and release the tension in your shoulders.  
And if you put down the Wii Remote, you’ll be even lighter!  
(Measuring ... Finished!) ...  
This is how your center of gravity looks when the shifts are shown on a graph.  
And when the shift data is averaged, the graph then looks like this.  
Your center of gravity leaned too far right. Do you maintain good daily posture?  
(Nintendo E3, 2007; also see Ms.Nintendo-Europe.com, 2007 for video).

As Miyamoto had imagined, this interaction elicits corporeal discoveries. Specifically, it involves the codification and analysis of isolated and ‘at risk’ corporeal *elements*, rendering the Nintendo spokesperson what Deleuze (1995) calls a fragmented ‘dividual’.

As noted, the device begins with surveillance through a tactile connection: the Balance Board ‘watches’ for minute fluctuations in movements of the foot. Data gleaned from the surface of the body is quickly translated into a series of ‘passwords’ (i.e., graphical data) that ‘unlocks’ knowledge of other somatic components hidden from plain view (i.e., centre of gravity and weight distribution). Next, this bodily knowledge is politicized, becoming *risk* knowledge when contrasted with a pre-established ‘norm’ (“Your center of gravity leaned *too far* right” – emphasis added). Finally, and perhaps most importantly, the *Wii* transcends a mere statistical diagnosis. Measures of the body are linked to a specific embodied *behaviour*: the user’s flawed daily posture, he discovers, is the underlying conduct rendering him ‘at risk’.

This final step is indeed most significant. By encouraging the user to correct his posture, the *Wii* transitions from a diagnostic analysis (based on measures such as BMI) to a basic prescription for ameliorating health and eradicating risk tendencies. Technologies have long been central to ‘the conduct of conduct’ in that they link knowledge of the subject to remotely located human experts. With the *Wii*, expert health knowledge is *folded in* to the device, allowing for the *Wii* to express some degree of autonomy in providing immediate (if rather basic) health recommendations. In essence, experts remain central to governmental control, yet expertise becomes automated, having been embedded in the *Wii* during production. As described above, Latour professes the importance of recognizing the agency of non-humans. With consumption of the *Wii*, non-human agency manifests through a novel articulation: the *Wii* functions actively and autonomously as a *quasi-object risk expert*.

## **Conclusion: Ghosts in the Machine**

‘Active’ video games are commonly referred to as such for their ability to activate the human body. This research reveals that this is a most fitting designation, albeit for slightly different reasons. The *Wii* is active in that it is endowed with the ability to shift the meanings associated with video game consumption, invoking and fortifying governmental and post-disciplinary forms of control. In addition, the *Wii* apparently operates as an autonomous quasi-object expert at times, one that can ‘unlock’ knowledge of the body to assess and alleviate personal risks. Of course, while the *Wii* may be independent in the sense that it does not confer with human experts before addressing those ‘at risk’, its deployment of expertise nonetheless requires the attention and concern of engaged human consumers. As Latour insists, the agency of technologies is realized only through their symbiotic relationship with people. Iwata Asks suggests that Nintendo’s new technologies were developed with the goal of encouraging consumer activity specifically in the form of ongoing self-care. The ‘ideal’ subjects imagined by Nintendo labourers are those who reflexively scrutinize their own corporeality, often in the name of identifying bodily risks, and at all times with the help of commercial goods. As Rose and Novas (2004) say, this is the making of bio-citizens. It is furthermore an approach to health promotion that is well-suited for neoliberal times, for it relies in equal parts on industry-defined messages of personal ‘empowerment’ and the procuring of health services through the market. It is true that the *Wii*’s use in settings like physical education means that people might not in all cases buy this product themselves, but such incidents nonetheless represent the further intrusion of corporate influence into a key part of the public sector (see Stack & Kelly, 2006).

Yet Nintendo can only *strive* to inflect consumer behaviour; there is certainly a range of possible experiences that can accompany the use of this company's new products. The possibility that people will engage in *Wii* activities for purposes like escapism or play should not be dismissed. Kline et al. (2003) remind us that play is a cultural form valued over time "... as an energy release and a way of teaching skills, and for its role in physical, cognitive, emotional, and social development" (p. 243). Alternatively, *Wii* users may call upon consumption strategies designed to resist the *Wii*'s disciplinary and responsabilization features, or might actively strive to ignore these features altogether. There is also the possibility that some *Wii* consumers will develop 'real' (e.g., familial) or 'virtual' (e.g., online) communities through this product. These are appropriate topics for future research.

In closing, I wish to reflect on the significance of the Iwata Asks series itself. In Latour's attempt to develop a theoretical and methodological foundation for understanding human/non-human mediations he advances the compelling notion of 'blackboxing'. This is a process, he says, "that makes the joint production of actors and artifacts entirely opaque" (Latour, 1999, p. 183). Once again, his exemplars are of heuristic value. The breakdown of an overhead projector – a quasi-object easily taken for granted – causes a crisis in that few know the intimate details of its operation. The repairperson's remedial efforts in fact unveil an articulated chain of non-human actants, each imbued in their own right with human gestures and intentions. "Whereas a moment before the projector scarcely existed, now even its parts have an individual existence, each its own 'black box' ... How many actants are really there?" (p. 183). Blackboxing in

this sense speaks to a process of mystification, whereby the necessary steps in the formation of a technology are obscured from plain view.

Iwata Asks evidently goes some way in unravelling the mysterious yarn of the *Wii* and *Wii Fit*. As described above it is directed not just at outlining the purported merits of active video gaming, but also at unveiling to some extent how these machines were pieced together. We have seen this in the case of the *Wii* controller, an intuitive device that needed a mechanism for deflecting fluorescent light in order to function properly. The *Wii Fit* Balance Board likewise underwent a slow development process. To measure the user's weight, for example, developers first tried to integrate the same technology found in bathroom scales. When this was deemed too costly, an alternative path was carved out: "An optical rotary encoder had been built into the 3D stick of the Nintendo 64 Controller, and we decided we could use this encoder in our hardware as well" (Us.Wii.com, 2008, Volume 2, Part 1). The Nintendo 64 is a previous-generation video game console; its controller was novel in that it allowed gamers to direct characters in 3D space. The optical rotary encoder of this technology has apparently been re-contextualized as a solution to the Nintendo labourers' current troubles, creating a device that can measure weight within a 100 g margin of error. While an old black box has thus been disassembled and re-constituted as a new one, Iwata Asks goes some way towards introducing transparency into this process.

'Blackboxing', however, calls to mind a more famous conception from the annals of scholarly criticism. Marx's notion of 'commodity fetishism' similarly draws attention to the opaqueness of cultural objects. In Marx's case, though, he was more concerned with how commodities, in their fantastical appearance at the marketplace, specifically

hide the *relations* of production necessary for their emergence. As David Harvey (2004) writes, “The conditions of labour and life, the sense of joy, anger, or frustration that lie behind the production of commodities, the states of mind of the producers, are all hidden to us as we exchange one object (money) for another (the commodity)” (p. 101). In Capital, Marx (2007 [1867]) specifically gives the example of the table: whence appearing to consumers, this object transcends its own ontology (as wood) and conditions of production so as to magically stand “on its head” (p. 82). Marx’s formulation thus begets questions regarding the manual labour underlying the *Wii*’s development. Though Iwata Asks tells us of labour processes, it focuses on the intellectual labour so dear to post-Fordist production. It is vital not to assume, of course, that such knowledge work is at all times harmonious. Dyer-Witheford and Sharman (2005) have demonstrated that knowledge labourers in the video game industry often work tirelessly and without remuneration that matches their toiling. Yet it is the conditions of manual production that have been deemed especially problematic in the making of high tech commodities generally, and video games specifically. As Kline et al. (2003) write, it is a predominantly female workforce in Mexican *maquiladoras* and East Asian enterprise zones that have been responsible for making the digital economy’s microchips and semi-conductors. The gaming industry’s use of such low-wage labour dates back at least to the mid-1980s. Nintendo has not opted out of this trend; in the early-1990s, for example, it shifted production of its hand-held *GameBoy* console to a *maquiladora* zone in Mexico, at times paying teenage girls to work long stretches in poorly ventilated conditions (Kline et al., 2003, p. 207).

We should not assume either that the *Wii*'s manufacturing is problematic in exactly the same way. But the journalist Gordon Laird (2009) has found that conditions at the Foxconn company factories where the *Wii* is pieced together have ignited worker protests. As he writes of the conditions therein:

The reality is that China's one-party state allows for large, radical reconfigurations of work and society in the service of cheap that have yet to be reproduced anywhere else. Teeming with migrant labourers, for example, Foxconn's city-within-a-city serves 150,000 lunches daily, the production lines operate around the clock, and the starting wage is 60 cents an hour (p. 107).

This situation motivates Laird to describe Shenzhen, the city where Foxconn is located, "more like a scene out of Karl Marx's nineteenth-century England than a high tech centre of growing importance" (p. 108). More recently, a series of worker suicides at Foxconn has raised concerns over the company's work environment, described in one report as involving "pseudo military' discipline" (Lewis, 2010). In fairness, the same report also notes that Nintendo has labour guidelines for their manufacturers, and has responded to the recent suicides with an investigation at Foxconn. The point remains, however, that despite its seemingly sincere attempt to demystify the *Wii*'s development, in *Iwata Asks* this product ultimately remains a fetishized, unknown commodity in some ways.

Taking account of these labour issues shines an even more intense light on questions of 'health' and 'empowerment' through video gaming. What Laird's reporting suggests is that we should be concerned not just with how Nintendo's equation of empowerment and consumption undercuts their supposed desire for universal health (since it favours the already-privileged), but also with how the very notion of empowerment-via-consumption might *already* be undercut by inequalities in production. This is an issue familiar to those studying the Nike company's marketing of fitness products to women – a campaign that began in earnest in the 1980s. The idea that

exercising while clad in Nike apparel was empowering for female consumers certainly ran counter to the historical view that fitness is inappropriate or even dangerous for women. Yet it also obscured the gendered labour conditions under which said apparel was made in the first place – conditions that, upon inspection, were found to be reliant upon young, female labourers working under what Sage (2005) describes as “appalling” conditions (p. 368; also see Lucas, 2000). In similar fashion, even if we accept the contentious claim that health is achievable through the purchase of ‘exergames’, this is far from a palatable health ‘solution’ if it contributes to a form of marginalization elsewhere. In other words, though industry has moved on to newer, more sophisticated ways of promoting fitness, many concerns of yesteryear evidently remain in place.

### 3. Use It or Lose It: Ageing and the Politics of Brain Training<sup>2</sup>

‘Use it or lose it’.

Such is the adage commonly employed in commentary on an emergent trend in health promotion: brain training. Otherwise referred to as cognitive exercise or ‘neurobics’ (cf., Katz & Rubin, 1999), brain training generally involves participation in challenging arithmetical, language, or memory quizzes in the interest of sustaining or improving one’s cognitive functioning. The market for ‘brain games’ – that is, software that houses training activities, information, and metrics – has expanded rapidly in recent years, thanks in large part to scientific findings surrounding ‘neuroplasticity’. This is the notion that with proper stimulation “the brain can be changed and improved rather than steadily declining from a fixed state” (Proudfoot, n.d.). For proponents of cognitive exercise, regular training is thought to fortify neural connections, and, in the most optimistic assessment, delay the onset of afflictions like Alzheimer’s disease. Indeed, brain training is often portrayed as important for older adults in particular, given the common belief that later life is a time for cognitive decline.

This chapter reports results from a qualitative analysis of promotional websites for three prominent brain games: *Brain Age*<sup>2</sup><sup>TM</sup>, *Fit Brains*, and *HAPPYneuron*<sup>TM</sup>. It is aimed at better understanding: 1) how training the brain is promoted as a viable and healthy endeavour; 2) for whom brain training is said to be most valuable; 3) the ways that training technologies intervene in cognitive functioning; and 4) how the emergence of brain training operates in support of and/or in opposition to contemporary and

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<sup>2</sup> A version of this chapter has been accepted for publication as: Millington, B. (Forthcoming). Use it or lose it: Ageing and the politics of brain training. *Leisure Studies*.

historical trends in the treatment of health and ageing. While brain training has risen in popularity, academic interest in this activity has thus far focused on its effectiveness in re-shaping cognition (e.g., Katsnelson, 2010). This is a worthwhile endeavour, yet it is equally important to study the meanings that circulate in promotional contexts and the precise ways that producers strive to appeal to brain game consumers (cf. Vincent, Tulle & Bond, 2008). This study was designed to make an initial contribution towards a sociological understanding of brain training – one that will hopefully motivate further research on this topic.

The central argument made herein is that brain games, once considered vis-à-vis historical and contemporary discourses related to ageing and the brain, can be regarded as simultaneously enabling and constraining. On the one hand, they imagine older, ‘at risk’ (consumer-)citizens as empowered and capable of sustaining their identity work into later life. On the other hand they trade on ageing-related anxieties and exacerbate the pressures on older persons to demonstrate an obvious ‘will to health’ through ongoing consumerism. I arrive at this argument through the following interrelated steps. First, I review key literature on ageing and cognitive health. While aged bodies and ‘impaired’ minds have in past eras been imagined as biopolitical threats, under neoliberal governance the logic of *maximizing* the ‘third age’ of life and *optimizing* cognitive health has materialized. Second, I outline my methodological approach in studying *Brain Age<sup>2</sup>*, *Fit Brains*, and *HAPPYneuron*, which draws from recent writing on contextual cultural studies of sport and leisure. Third, I describe the key findings of this research, reporting specifically on the following overlapping themes: 1) the deployment of expertise in marketing texts to make brain training intelligible; 2) the deployment of measuring

techniques in brain game software to ‘screen and intervene’ in cognitive health; and 3) the deployment of ‘third party’ advocates to corroborate brain training’s value. I close by considering these findings in relation to broader trends in health promotion, highlighting the complexities associated with commercialized health in(ter)ventions.

## **Literature Review**

### **The Will to Health**

Higgs et al. (2009) describe the ‘third age’ as “a life phase in which older people are able to seek self-fulfillment beyond the constraints of work and/or child rearing” (p. 689; cf., Laslett, 1989). Emergent in the postwar era, and tied closely to the life-course of the privileged classes of the Baby Boomer generation, third age discourses signal a profound shift from earlier ways of conceptualizing later life. Furthermore, they have been characterized by those who study ageing as having both positive and problematic consequences. In the nineteenth century, scientific thought in Europe and America imagined ageing primarily as a pathology. Aged bodies purportedly lacked reserves of ‘vital energy’ to contribute to an increasingly industrialized economy (Katz & Peters, 2008). As Vertinsky (1991) recounts, these medicalized prescriptions affected conceptions of ageing in other realms, as “institutions and programs were increasingly designed to separate the old from the work, wealth and play of the younger generation” (p. 76). This social and material exclusion continued into the early twentieth century, and was ultimately accompanied by the symbolic exclusion of older persons from the burgeoning popular culture industry. Gilieard (2005) describes these processes as the

‘ghettoization’ of age, making specific note of their tendency to dispossess older persons of their cultural agency.

Yet the arrival of third age discourses in the postwar period articulated a contrasting vision of older persons – one of active, engaged, and empowered citizenship. Gilleard and Higgs (2005) contend that this renewed understanding of agency in later life must be seen in relation to broader structures and historical processes. In the postwar years, middle class workers increasingly became ‘bourgeoisied’ retirees, thanks in large part to the institution of welfare policies and the strong standing of labour following the Depression. Retirement lengthened as life expectancies improved, and the sheer number of retirees also rose as Baby Boomers aged out (and continue to age out) of the workforce. Together these trends meant older persons could participate in greater numbers and for a greater length of time in consumer culture. Indeed, as Western states shifted from production- to consumption-based economies, older populations became a vaunted consumer demographic. The most celebrated consequences of this are that ‘third agers’ are more likely to remain visible and active in public life and that, in turn, ageing is less stigmatized than before. Later life, in other words, is increasingly regarded as a time for continued pleasure, productivity, and identity work, as opposed to one of isolation and decline. It is notable that such beliefs are now popular among seniors themselves, and that sporting and leisure pursuits in particular are deemed suitable avenues for resisting the facile notion that ageing is strictly a biomedical problem (Dionigi, 2006; Grant, 2001; Paulson, 2005; Pike, 2011; Vertinsky, 2000).

Before celebrating these developments *tout court*, however, it is important to recognize that older persons’ experiences remain stratified by (for example) class, race,

and gender (Gilleard & Higgs, 2000; Nazroo, 2006; Vertinsky, 2000). Furthermore, third age discourses have been regarded as simultaneously *constraining* in that the emphasis on continued social engagement for retirees – more specifically, continued participation in consumer culture – has transformed into the assumption that this is *the* way to demonstrate one’s ‘successful’ ageing. Higgs et al. (2009) contend that, in the first instance, there is now a social obligation for third agers to demonstrate an obvious ‘will to health’. This means not simply complying with standards of beauty, health, youthfulness, and so forth, but doing so in a way that is obvious to others. Important in such processes is the use of new technologies. In one sense, commercial technologies enable aesthetic ‘anti-ageing’ practices such as surgical and non-surgical cosmetic procedures. Hurd Clarke and Griffin’s (2008) research with older women reveals that it is precisely these activities that are used to make chronological age imperceptible so as to mitigate material and cultural forms of age-related discrimination. The value of ongoing beautywork is fortified in news media accounts that extol the virtues of ‘delaying’ ageing. For example, Coupland (2007) demonstrates how magazine texts persuade consumers “that it is undesirable to *appear to be ageing*, and that individuals must *assume responsibility to stay young-looking*” (p. 39, emphasis in original). In another sense, technological interventions are now made to address the bodily *risks* that affect ageing populations. As Ziguras (2004) points out, the use of expertise is especially vital in the project of convincing (ageing) consumers that commercial products can address and relieve risk tendencies (cf., Higgs et al., 2009).

It is important to recognize the affinity between these specific methods of enacting a ‘will to health’ and the broader politico-economic context in which they are

situated. Though welfarism was the leading political rationality in the West in the immediate postwar years, over the past four decades its collectivist principles and social support systems have been problematized (Harvey, 2005). Neoliberalism is the ascendant form of governance – one that advocates market-based solutions to social ‘problems’ (e.g., the health-based consequences of population ageing). Under these conditions, personal responsibility is not merely a shibboleth of the anti-ageing industry, but is also a strategy for moulding citizens into *consumer*-citizens who can adequately care for themselves (Rose, 1999). For retirees, neoliberalism ushers in mechanisms for reducing their supposed dependency on the state (Kemp & Denton, 2003; Rudman, 2006). This marks a profound shift from the ‘three-legged stool’ approach to retirement where responsibility for later life was believed to be shared by governments (e.g., the making of social security systems), capital (e.g., defined-benefit pension plans), and retirees themselves. As Kemp and Denton (2003) write, under neoliberalism “Individuals are encouraged at every turn to take responsibility for all facets of their later lives, as they are, for instance, confronted with the images of decreasing public pension funds and reduced social and health care expenditures ...” (p. 741). Once again, news media commonly validate this arrangement by advocating for ‘responsibilized’ later life as well (Rudman, 2006).

### **Optimizing Cognitive Health**

These changing perceptions and experiences of ageing can also be mapped against the history of science-based interventions into the human psyche. Drawing from Foucault, Nadesan (2008) describes how the onset of modernity wrought a desire not just

to identify, but to segregate and discipline those deemed mentally 'impaired'. Beginning in the seventeenth century, 'madness' was considered a biopolitical threat, which is to say it was imagined to hinder not merely the afflicted individual subject but also the prospects for survival of the population or 'race'. In Europe and North America the mentally ill were believed to be unsuited in particular for the demands of industrialization, much like how ageing bodies purportedly lacked vitality for the rigours of manual labour. In fact, more than simply sharing a likeness in their treatment, ageing and 'madness' were commonly conflated. As Chase (2009) recounts, for Victorians old age was seen as a time of mental perturbations, with dying or insanity "the twin possibilities consequent upon retirement" (p. 95; see Katz & Peters, 2008).

As modernity progressed through the nineteenth century, medico-scientific truths about cognition became ever more important in inflecting public perceptions of normalcy and deviance. It was not just biological accounts of mental illness that were important at this time, but also emerging bodies of social scientific knowledge. To quote Nadesan (2008):

Anthropological and sociological interest in representing and tabulating distinct human 'races' in the first half of the nineteenth century created the conditions of possibility for comparing and evaluating the relative health, intellect, evolution, and degeneracy of 'races' within an evolutionary framework during the second half of the century (p. 145).

By the early 1900s the most famous means for reifying intellectual capacity was brought to bear on the public: the Intelligence Quotient, or IQ. Gould (1996) explains that despite the more or less virtuous intentions of IQ creator Alfred Binet, in America IQ scores were taken as "measures of a single, innate entity" and were used to "recognize limits, segregate, and curtail breeding to prevent further deterioration of an endangered American stock" (p. 189). The Intelligence Quotient, in other words, became a signifier

of mental worth. Its attendant notion that cognition could be abstracted from the self and compared across the population articulated perfectly with the eugenics movement of the day (cf., Rabinow & Rose, 2006).

Yet like the politics of ageing, so too have the conditions of possibility surrounding cognitive health undergone significant transformations. The reasons for this are many, and are inclusive of both historical events (e.g., recognition of the atrocities wrought by Nazi eugenics) and changing conceptualizations of how best to govern populations (Nadesan, 2008). With respect to the latter, Rabinow and Rose (2006) extend Foucault's famous arguments on biopower by documenting how the logic of 'optimizing' subjectivity has come to replace the desire to punish or segregate 'deviant' populations. In the postwar years humanistic psychologists popularized the belief that self-work can be mobilized to enhance cognition. Nadesan (2008) contends that humanistic authorities "promulgated ideas about self-directed personal change and actualization that impacted nearly every sector of American life" (p. 159). Soon after, cognitive psychology advanced a powerful brain-as-computer metaphor, fortifying the belief that cognition could be 'programmed'. Meanwhile, cognitive neuropsychology and neuroscience developed new ways of imag(in)ing the brain, such as positron emission tomography scans (Dumit, 2004). The broad impact of these successive developments has been the formation of what Rose (2007) calls 'neurochemical citizenship': "Individuals themselves and their authorities – general practitioners, nurses, teachers, parents – are beginning to recode variations in moods, emotions, desires, and thoughts in terms of the functioning of their brain chemicals, and to act upon themselves in the light of this belief" (p. 223). The making of neurochemical citizens, like the formation of third age

discourses, complies with neoliberalism's emphasis on personal responsibility. Just as we have seen a proliferation of aesthetic and risk-reduction anti-ageing products, so too has the market for cognitive technologies burgeoned in recent years. The most visible manifestation of this is the pharmaceutical industry (Katz & Peters, 2008; Singh & Rose, 2006). The production, marketing, and consumption of psychotropic drugs have extended far beyond the boundaries of illness as traditionally conceived and into areas of lifestyle adjustment (Katz & Marshall, 2003). Importantly, optimization discourses exhort both 'at risk' and 'normal' subjects (i.e., patients and 'pre-patients') to better themselves through the market. The former group is encouraged to strive towards standardized measures of population health; the latter is implored to guard against potential cognitive decline (Rose, 2007).

### **Training the Brain**

What makes brain training unique as a health intervention is its replacement of chemical inducement (as in the pharmaceutical industry) with cognitive *exercise*. As noted, this is a direct manifestation of findings related to neuroplasticity, a term about which there is now a vast and still growing body of scientific literature. SharpBrains, a research firm devoted to the brain fitness market, describes this concept as "the brain's ability to CHANGE throughout life" by "forming new connections between brain cells (neurons)" (Sharpbrains.com, 2009, emphasis in original). Unlike in times past, the brain is now believed to be adaptable and pliable; its natural course of decline can be slowed or reversed with proper care. Products that stimulate neural connections are in turn accessible in numerous formats, including websites, PC programs, mobile phone

applications, and video games. The successes of these products are such that, according to the Canadian brain research centre Baycrest, brain training is presently a \$1 billion market (Baycrest.org, 2010).

Yet while neuroplasticity promises to be an important medico-scientific concept, the notion that regular training can ameliorate brain functioning is at this point relatively novel. Media reports are often mobilized in support of brain training (as shown below), though they have also highlighted scientific evidence that questions the viability of specific training products (e.g., Katsnelson, 2010; Pearce, 2009). This raises questions as to how exactly brain training's benefits are 'sold' to the public by those who benefit from the industry's success. Indeed, as Katz and Peters (2008) observe, there remains a shortage of critical insight into the anti-ageing movement's messages about cognitive health. Vincent, Tulle, and Bond (2008) add that it is vital to examine how different groups, including those who are commercially motivated, strive to inflect our comprehension of the vicissitudes of ageing. Accordingly, the present study was built around the following research questions: How are brain games marketed as viable health promotion devices? How do they target specific demographics (especially older persons)? How do these technologies intervene in cognitive health? How do such interventions articulate with contemporary strategies for health promotion?

### **Sample and Method**

As said at the outset, the analysis presented herein is drawn from a detailed investigation of promotional websites for three prominent brain training products. The first of these is *Brain Age<sup>2</sup>*, a video game sold by Nintendo for roughly \$20 (USD) and

often marketed alongside the company's hand-held 'DS' gaming console. As shown at Brainage.com, *Brain Age<sup>2</sup>* implores users to partake in a variety of challenging activities, including arithmetical and recognition/memory exercises. The game 'Serial Subtraction', for example, asks users to repeatedly subtract the number nine from an initial total of 100 as quickly as possible. 'High Number' has gamers touch the highest of several numerical options appearing on-screen, a task complicated by the numbers' different physical sizes (Brainage.com, 2007, 'How to Play'). Second, *Fit Brains* is a website produced by Vivity Labs Inc. where users can play a small sample of brain games for free or can sign up for a Club Membership (\$14.95/month) so as to access a full complement of training software and expertise. The games here are given more elaborate titles, such as the vocabulary/comprehension game 'Paradise Island 2' (Fitbrains.com, 2010, 'Games'). Third and finally, *HAPPYneuron* distributes brain fitness software on CD-ROM, with separate programs for adults (\$69.95) and youth (\$59.99). Its vast collection of brain games includes products that target memory, attention, language, executive tasks, and visual-spatial functions (Happy-neuron.com, 2010, 'Games'). Though *Brain Age<sup>2</sup>* is perhaps the most successful and recognizable brain game to date, the other products studied here boast of either their health and fitness awards or their positive reviews from mainstream press. Ultimately, the choice to examine three technologies was based in the desire to excavate some of the most prominent ways in which brain games operate, and to account for three of the primary formats in which these products reach the public (i.e., as a video game, a website, and computer software).

Scherer (2007) observes that despite their growing importance promotional websites have yet to receive sufficient scholarly attention. In recent years, these avenues

for communication have grown increasingly sophisticated in their methods of reaching the consuming public (also see Scherer & Jackson, 2008). As shown below, Brainage.com, Fitbrains.com, and Happy-neuron.com are indicative of this trend. In one sense, these websites incorporate different media forms to go beyond the basic capabilities of print and even television advertising. For example, Brainage.com features an interactive sidebar showing the brain's typical response to different levels of stimulation. In a second, related sense, examining promotional sites is appropriate for answering *this study's* research questions, for they provide novel insights into the procedures made possible through brain game software and the purported reasons these procedures are worthwhile. This includes, among other features, *de facto* tutorials on the merits of brain training and video demonstrations of brain game software 'in use'.

The methodological approach underlying this research draws from key writing on contextual cultural studies of sport and leisure. This is a research tradition that has emphasized the importance of uncovering how new technologies articulate with broader social, political, and economic conditions (du Gay et al., 1997). As said in Chapter One, those writing on the method of contextual cultural studies advocate research that: a) identifies the historical conjuncture relevant to the study (e.g., discourses of neoliberalism and the 'third age'); and b) uses 'secondary' research techniques to scrutinize how cultural objects reinscribe and/or contest the extant conditions in which they are located (Andrews, 2002; Andrews & Giardina, 2008; King, 2005). The websites in this research were treated as 'cultural artefacts' (Hine, 2000) and were examined through a method of textual analysis. This was deemed appropriate given the ability of textual analyses to identify and critically assess what is signified through marketing language and images

(Leiss et al., 2005). This method furthermore offers the opportunity to examine how discourses emerge across a number of texts, which in this case meant scrutinizing how different brain games – while unique in some ways – also share certain features as part of a broad technological genre. Initial readings of the websites were designed to engender familiarity with *Brain Age<sup>2</sup>*, *Fit Brains*, and *HAPPYneuron*. Subsequent readings involved collecting, coding, and analyzing information on: 1) the nature of brain training procedures; 2) the language and images used to portray such procedures as worthwhile; 3) the figures (e.g., health experts) mobilized in support brain training products; 4) the consumers that are targeted in online promotion; and finally, 5) discourses and practices that signal broader trends in the treatment of health, ageing, and consumerism.

As a final step, the information gathered from these separate brain game sites was compared and organized into three key themes – each of which I report on in detail below. These themes are as follows: the deployment of expertise to make brain training intelligible; the deployment of risk metrics to ‘screen and intervene’ in cognitive health; and the deployment of ‘third party’ sources to corroborate brain training’s value.

## **Findings**

### **‘Use It or Lose It’: Deploying Expertise**

The portrayal of brain games as valuable technologies is first aided by the online presence of cognitive experts. In the case of *Brain Age<sup>2</sup>*, visitors are introduced at Brainage.com to Dr. Ryuta Kawashima, a neuroscientist whose research inspired the training activities included in Nintendo’s product (Brainage.com, 2007, ‘Home’, ‘F.A.Q’). Similarly, a prominent scientific expert is used to extol the virtues of *Fit*

*Brains*. In this case, it is Dr. Paul Nussbaum, described as a “national leader in Brain Health with over 20 years experience in the field of aging” (Fitbrains.com, 2010, ‘Home’, ‘F.A.Q.’). While Dr. Kawashima stands as a lone specialist at Brainage.com, Dr. Nussbaum’s expositions on brain science are supported by a Board of Advisors accredited in psychiatry, neurology, and related disciplines. *HAPPYneuron*, meanwhile, features brain games “specifically designed by a team of Neurologists and Neuroscientists”, each of whom is introduced online with accompanying credentials (Happy-neuron.com, 2010, ‘Home’).

As Rose (1999) documents, experts have long been central to the dissemination of information about healthy lifestyles and health-related risks. In the eighteenth century medical encounters described by Foucault (1978), expertise was primarily didactic in its deployment. Foucault famously called this ‘pastoral’ power. Medical authorities (or ‘pastors’) were unmatched in their knowledge of the human body and were thus charged with directing acquiescent patients (the ‘flock’) towards ways of alleviating risk tendencies. Yet in the context of neoliberalism, where subjects/patients are asked to be vigilant and responsible in managing their own health, the role of medical authorities is newly configured. Specifically, ‘pastors of the soma’ now “espouse the ethical principles of informed consent, autonomy, voluntary action, and choice and non-directiveness” (Rose, 2007, p. 74). That is to say, they recognize the counter-authority of the flock, and the tendency for subjects to seek and share information. These changes are intimately tied to the growing commodification of health, for producers of health products and information are now confronted with the reality that health consumers – at least the materially privileged among them – can increasingly choose otherwise.

In the first instance, expertise at brain game websites conveys salient and intricate details related to cognitive functioning. Each of the websites serves first as a *de facto* tutorial, explaining the various elements of the brain's 'hardware' or of its 'software' operations. Brainage.com contains an informational page with sub-headings 'The Human Brain' and 'A Brief Explanation of the Brain'. The former heading is accompanied by a diagrammatic representation of the brain that highlights its constituent parts; the latter is followed by text that emphasizes the importance of the brain's prefrontal region and its unique association with functions like memory and communication (Brainage.com, 2007, 'Brain Training'). Similarly, *Fit Brains* provides 'An Introduction to Brain Health'. Contained in this is a description of each of the brain's key operations: memory, concentration/attention, language skills, visual/spatial, and executive operations like logic and reasoning (Fitbrains.com, 2010, 'Science'). If one follows the underlying weblinks related to (for example) memory, she is provided further explanation on brain structures related to memory, a summary of the effects of stress and Alzheimer's disease on the brain's hippocampus, and ultimately a description of *Fit Brains* products created for memory work. While *HAPPYneuron* also notes the brain's constitutive functions (memory, visual/spatial, attention, etc.), the product's website idiosyncratically recounts a timeline of 'Brain Science History' (Happy-neuron.com, 2010, 'Science', 'Brain Research'). This begins in 1885 with findings related to 'forgetfulness', proceeds through the recognition of Alzheimer's disease near the turn of the century and findings related to memory in the 1950s, and finally highlights the 'birth' of cognitive training in recent years.

This scholarly information on the brain's composition is important in that it serves as a platform upon which to build a case for the value of brain *training*. Evidently, a second function of expertise is to make the otherwise peculiar act of cognitive exercise intelligible to consumers. Next to Brainage.com's 'Brief Explanation of the Brain' is the aforementioned interactive tool where users can scroll through images of the brain at work during different tasks. These visual representations resemble positron emission tomography scans of the brain. Their purpose is to show "that performing simple calculations quickly and reading aloud are effective ways to train your brain" (Brainage.com, 2007, 'Brain Training'). Not surprisingly, these are precisely the type of activities included in *Brain Age*<sup>2</sup>. *HAPPYneuron* and *Fit Brains* highlight the brain's pliability as well. Fitbrains.com speaks of 'Brain Reserve', a concept linked to neuroplasticity:

Mental activity is an important way to develop a stronger, healthier brain through the building of Brain Reserve. Brain Reserve relates to the brain's ability to physically reorganize itself in response to the demands placed upon it. A brain with a strong Reserve is one that has formed many cellular connections and is rich in brain cell density. A strong reserve is generally believed to have the ability to delay the onset of mental deterioration, such as Alzheimer's Disease (AD) (Fitbrains.com, 2010, 'Science').

Meanwhile, *HAPPYneuron* cites numerous studies corroborating the validity of what it calls 'cognitive reserve'. Here the concept is likened to a 'savings accounts' of neural connections "to be drawn upon in time of need" (Happy-neuron.com, 2010, 'Science'). As with *Brain Age*<sup>2</sup>, Happy-neuron.com advocates regular engagement with a diversity of brain games to fortify one's neural structure.

While citing biomedical concepts may be effective in swaying consumers, embedded in expert language is another means by which brain training is made familiar: a metaphor of *bodily* discipline. The language of 'training', 'workouts' and 'exercise'

circulates liberally online to describe the experience of brain game consumption. *HAPPYneuron* notes that their CD-ROM contains “fun and innovative exercises and tools that will provide your brain with a full mental workout” (Happy-neuron.com, 2010, ‘Store’). An equally evocative comparison places the brain alongside the muscles typically targeted in fitness regimens. Brainage.com points out that “Everyone knows you can prevent muscle loss with exercise, and use such activities to improve your body over time. And the same could be said for your brain” (Brainage.com, 2007, ‘Brain Training’). Fitbrains.com tells that the brain starts ‘slowing down’ in one’s mid-twenties: “Fortunately, you can keep it running at peak performance and even make improvements at any age. Just like your body, you can ‘use it or lose it’” (Fitbrains.com, 2010, ‘Science’). Happyneuron.com likewise invokes the rhetoric of ‘use it or lose it’ to extol the importance of brain training. While past research has shown that language of this kind can be a motivator of (bodily) exercise – older persons have associated ‘use it or lose it’ with the experience of ‘active ageing’ – Dionigi (2006) points out that it implicitly contains a negative perspective on the ‘natural’ ageing process as well (also see Pike, 2011). This is a point I reflect on further in this chapter’s conclusion. What is important for the time being is that the systems of meaning typically associated with the body are now grafted onto matters of the mind. Brain gaming is positioned as important by depicting the brain as an ongoing project.

Thus, to contrast brain game expertise with past manifestations of expert authority, it can be said that brain game marketing trades didacticism for polemicism. In the context of online promotion, expertise is deployed to make a case for the value of cognitive exercise, first by outlining the exigencies of a healthy brain, second by

explaining how brain training is a means towards this end, and third by making this activity familiar through metaphor. While the insights of neuro experts are not reserved exclusively for third agers, references to afflictions like Alzheimer's disease are seemingly gestured towards this older population.

### **'Screen and Intervene': Deploying Risk Metrics**

If the first goal of promotional websites is to make brain training intelligible, apparently the second is to describe in detail the (risk) metrics contained in training commodities. *Brain Age<sup>2</sup>*, *HAPPYneuron*, and *Fit Brains* each include mechanisms for gauging and tracking brain functioning. For *Brain Age<sup>2</sup>*, one's performance in brain training activities induces a specific 'Brain Age' score. The lowest and best measure achievable is a Brain Age of 20. Scoring under one's chronological age is depicted as a success (Sinfield, 2006). With *HAPPYneuron*, users construct a 'Cognitive Profile' that is fabricated from their brain game results. In this case, however, gamers are given an average score that corresponds with a striking 25 brain sub-functions, including semantic memory, visual working memory, and hypothetic-deductive reasoning (Happyneuron.com, 2010, 'Coach', 'How HAPPYneuron Works'). *Fit Brains* offers a 'Fit Brain Index', or FBI, a measure that "ranges from 60-200 – with 100 being 'Average', 120 or higher considered to be 'Healthy', eventually going to a maximum of 200, which is considered 'Exceptional'" (Fitbrains.com, 2010, 'Home', 'F.A.Q.').

Like expertise, so too are numbers central to our understanding of 'healthy' and 'at risk' subjectivities (Hacking, 2002). The 'social history of numbers' (Rose, 1999, p. 200) – that is, their use in governing individuals and populations – is of course varied and

protracted. The health concerns of the nineteenth century engendered new techniques for measuring the mind and body, most notably IQ (Gould, 1996; Vertinsky, 2003). Yet following the contemporary logic of ‘optimizing’ health (as described above), the use of measurement to demonize or segregate ‘abnormal’ populations is replaced by a desire to prevent deviations to begin with, and to encourage remedial treatment for statistical outliers. Rose (2008) calls this the logic of ‘screen and intervene’. Statistical assessments, he says, are among the tools used to screen for risks “before they become apparent in frank illness.” The ensuing goal is to “intervene early and preventively by a combination of therapeutic measures and lifestyle changes” (p. 432). To say this another way, the boundaries of statistical normalcy continue to be made, but are increasingly imagined as permeable for those falling outside of them. ‘Normalcy’ can be attained with an adequate dose of self-care.

While not identical, Brain Age, Cognitive Profile, and FBi can be seen as screening mechanisms that reify brain functioning. This concomitantly announces the presence of either ‘normal’ cognition or what amounts to cognitive risks. “The first time you play Brain Age”, users are told at Brainage.com, “you’ll take a series of tests and get a score that determines your DS brain age.” Thenceforth, “Brain Age tracks your progression with easy-to-read line charts so you always know how well you’re doing” (Brainage.com, 2007, ‘What is Brain Age?’). Risk is not explicitly mentioned here, but the easy juxtaposition of Brain Age and chronological age gives consumers an assessment of whether their brain functioning can be further optimized. *HAPPYneuron* and *Fit Brains* advertise that, with their software, personal performance is weighed against demographic data. The former product boasts that it holds the training industry’s

most extensive database of user results. This provides the unique chance “to compare your own performance on specific skills to the performance of others of your age, gender and education level to give you a sense of where you need to work harder and where you can just glide through” (Happy-neuron.com, 2010, ‘Coach’). Furthermore, like Brainage.com, the promotional sites for *HAPPYneuron* and *Fit Brains* highlight that brain training scores can be monitored over time through graphing tools like performance charts. The point here appears to be for users to continually scrutinize their cognition, earnestly assessing their own statistics vis-à-vis population standards.

Importantly, whether one is interpellated through brain games as ‘healthy’ (i.e., normal) or ‘below average’ (i.e., at risk), the prescribed intervention that follows is more or less the same: continued cognitive training, and by extension continued consumerism. The only differences individual users might face involve the types of games to be played and/or the components of the brain worth targeting. *HAPPYneuron* advocates multiple training sessions per week lasting 30 minutes to an hour. Brain expertise and the brain-body comparison reappear in this product’s software in that a ‘coach’ guides activity selection, “Just like a personal trainer at the gym designs your workout to factor your physical strengths and weaknesses” (Happy-neuron.com, 2010, ‘Home’, ‘HAPPYneuron Advantage’). *Brain Age*<sup>2</sup> recommends daily training activities following one’s initial ‘screening’, whether for the purpose of cognitive improvement or upkeep (Sinfield, 2006). Notably, it is an avatar of Dr. Kawashima that appears on-screen in *Brain Age*<sup>2</sup>’s software to inform gamers of their Brain Age score. His presence can be regarded as a metonym for the science undergirding the Brain Age measure, and as a reminder that specific Brain Age scores are indeed valid. *Fit Brains* suggests that *even more* brain

training is required to sustain the most revered Fit Brain Index score, “much like how a high-performance athlete requires more effort to sustain their peak level of fitness” (Fitbrains.com, 2010, ‘Home’, ‘F.A.Q.’). Those purchasing a *Fit Brains* Club Membership have privy to a tailored fitness regimen, including suggestions on how to reach areas of weakness.

Following Rose’s (2008) observations on contemporary health strategies, then, brain games deliver an initial screening of cognitive health followed by a lifestyle intervention. Whether one achieves a desirable or disconcerting diagnosis in the first instance, the recommended change to her daily practices involves sustained (albeit personally tailored) consumption of exercise products. This is a practical example of how consumer-citizenship is brought to life: whatever one’s specific characteristics, her path to better health travels through consumption. Furthermore, since an undisciplined brain inexorably ‘regresses’ in later life, brain training is especially important for older adults. As Neilson (2006) writes, this market-based approach to bettering one’s self is characteristic of the present moment, where ‘healthy’ ageing is entwined with “new consumer options for health maintenance, body modification and the enhancement of capacities” (p. 159). What is implied in such an approach, as in neoliberal strategies for health promotion in general, is that avoiding infirmity is a matter of personal, rather than collective, vigilance.

### **‘Service’ Journalism: Deploying Third Party Advocates**

A final feature of brain game websites – one that further substantiates the link between brain training and the third age – is the appearance online of ‘third party’

advocates. By third party advocates I refer to those included on websites who, aside from their use of brain game commodities, are ostensibly independent of the game's producer. Happy-neuron.com and Brainage.com each highlight consumer experiences. In the case of the former, a page titled 'Testimonials' features reviews from consumers aged 52-78. In this space, satisfied *HAPPYneuron* users expound on the product's particularities and supposed benefits. Echoing the website's neuro experts, for example, the wife of a 52 year-old user emphasizes the need for adherence:

Within six months of using HAPPYneuron's programs, my husband's peripheral vision had improved. He is more alert and relaxed. But these welcome changes didn't occur right away. He works out on the games every morning. It's something that you really have to be disciplined about (Happy-neuron.com, 2010, 'Home', 'Testimonials').

In this passage, we find reaffirmation that cognitive exercise is a matter of discipline, since changes only arise with dedicated use. 'Changes' specifically involve physical improvements (in vision) and an improved psychological state (marked by 'alertness' and 'relaxedness'). Other consumers likewise reflect on the benefits of a *HAPPYneuron* regimen, noting, for example, improved driving, enhanced memory, and better attention spans. The point here is not to question whether these are indeed honest reflections on brain training's merits, but to highlight the market demographics that brain game makers strive to entice. The inclusion of third agers alone in this space is telling, as it fortifies the notion that brain training is imperative especially in later life.

Meanwhile, at Brainage.com we are able to follow the trials of 'Ken', a 44 year-old school psychologist whose Brain Age shrinks from 58 to 31 with dedicated use. Ken annotates this exercise regimen through videos of his successes and failures 'in training' (Brainage.com, 2007, 'Brain Training'). A separate list of 'Brain Training Videos' at this same website shows six other gamers – all of whom are adults, and three of whom might

be described as ‘third agers’ – using and seemingly benefiting from *Brain Age*<sup>2</sup> (Brainage.com, 2007, ‘Brain Training’). Once again, these promotional features may be more advertorial than authentic, but this bears no impact on their apparent purpose: to deem older adults in particular as inclined towards ongoing cognitive training. It is furthermore notable that these representations of (supposed) consumer experiences tend to depict female and male consumers in equal proportion; Nintendo’s ‘Brain Training Videos’ show three women and three men, for example. Though there is certainly a tradition of steering marketing messages towards women – especially the marketing of domestic commodities (see Walker, Hathock, & Bellamy, 2009) – video gaming has long been associated with male audiences in particular (Kline et al., 2003). Indeed, what we know from Ann Gray’s (1992) compelling ethnography on the gendering of leisure time is that high tech commodities in general are commonly perceived as ‘masculine’ devices. Yet the ageing population is disproportionately female, at least in the West, and is likely to remain as such given men’s shorter life expectancies (in general). If the third age is valued by industry, then, it makes sense that female third agers will be targeted at least on par with men. Brain training, after all, trades on risk politics, and the notion that *all* consumers are potentially in jeopardy.

Towards a similar end, websites examined in this research invoke what can be described as ‘service journalists’ as third party advocates. As Eide and Knight (1999) explain, this term applies to instances where journalists broadcast information on the problems of daily living. Service journalism tends to be preoccupied in particular with risk tendencies and lifestyle changes that can help in alleviating them. It has accordingly blossomed in a neoliberal era where individual/consumer solutions are valorized above

others. ‘Service’ articles and editorials begin from the premise “that people are initially unaware of potential problems that confront them as a result of their current way of life – an unhealthy diet, poor money management, etc.” From there, the task is informational: “to enlighten the reader or viewer about behaviour that may be risky in terms of its future implications, and provide guidance about what steps to take to reduce or control this risk” (p. 531). Above all else, Eide and Knight say, this type of risk-thinking tends to be health-oriented, as health and illness in particular tend to stoke uncertainties and anxieties amongst the public. The goal in service interventions is thus as much to produce vigilant, forward-looking subjectivities as it is to mediate within problematic circumstances. “The self and its life become a project that is fraught with risk but also open to opportunities for enhancement and fulfillment, and the function of advice is to inform the individual of both” (p. 531).

While Happy-neuron.com uses weblinks to highlight external commentaries on brain health (e.g., links to articles from *New Scientist*, and the AARP), and while the *Fit Brains* site contains short reviews from prominent media outlets (e.g., Women’s Health), it is Brainage.com that includes the most robust collection of media accounts on brain training. At the website’s ‘Related Articles’ page one finds links to commentaries on brain health from a variety of well-known sources, including the technology website Wired.com, the seniors’ organization AARP, and the news organizations NPR, CNN, and USA Today. The NPR review of Nintendo’s product reflects the consumer testimonials described above. That is to say, the reporter describes feeling ‘sharper’ after brain training and notes improvements in his Brain Age score (NPR.org, 2006). The article

from USA Today, meanwhile, elaborates more fully on the importance of exercising the mind:

Growing evidence now suggests that lifestyle factors, like diet, exercise and even challenging activities, might help ward off or delay the onset of neurodegenerative diseases, possibly by building connections between brain cells or even spurring the production of new brain cells. People who power up the brain in this way may have a better shot at reaching old age with a brain that still performs at top speed, says Elizabeth Edgerly, a brain expert at the Alzheimer's Association (USAtoday.com, 2008).

This passage deploys expertise yet again, and also reaffirms the viability of neuroplasticity. Furthermore, the reference to 'powering' the brain in later life is imploratory for older adults in particular. CNN offers similar directives, in its case by relaying advice on keeping the mind 'sharp' from the esteemed health authority the Mayo Clinic. "Just as physical activity keeps your body strong," the consumer is told, "mental activity keeps your mind sharp and agile" (CNN.com, 2005). This assertion mobilizes the brain-body comparison yet again. It is followed by a list of activities for challenging one's mind, which, though not inclusive of brain game use specifically, speaks of the *types* of activities included in these technologies. At Brainage.com, then, the consumer can evidently sort through the advice not only of 'in house' experts (like Dr. Kawashima), but apparently of independent ones like the Mayo Clinic as well. This supports Eide and Knight's (1999) observation that service journalism regularly conflates the positions of journalist and (health) expert, often by having the latter directly take on the duties of the former.

To describe this another way, by elaborating on the potent but sometimes unrecognized risks related to ageing, service journalism gives corporate messages a form of intertextual support. The consequences of this, however, are arguably as relevant to the general practice of marketing online as they are to the specific initiative of selling brain

games. In their study of news media coverage of the Canadian athlete Simon Whitfield, Darnell and Sparks (2005) highlight the points of convergence between marketing and news:

... news coverage itself at some level emulates advertising and vice versa as both genres use topics, personalities and storylines that are (thought to be) valued by audiences, and as they cross-feed from each other borrowing images and information, even reportorial styles (i.e. 'advertorials') (p. 131; cf. Wernick, 1991).

In 'older' media like television or newspapers, this type of promotion might intertwine textual and visual signifiers; the narrative construction of Whitfield as a Canadian athlete *par excellence* fortified and was fortified by commercials that celebrated his 'heroic' gold medal performance in the Olympic triathlon. But by marketing through corporate websites, companies can evidently be strategic in selling products and services in new ways. Marketers do not so much substantiate the messages of news media, but rather selectively mobilize news accounts that substantiate their own medico-scientific claims. Moreover, a *literal* articulation connects advertising and news, as the click of a weblink takes the consumer from the former to the latter. If, as argued above, the knowledge of experts like Dr. Kawashima serves to make a case for brain training, ultimately the work of service journalists stands as additional, easily accessible evidence for the discerning consumer-subject.

### **Discussion and Conclusion**

Given these findings, the question remains as to how brain games relate to the historical and present-day discourses surrounding ageing and cognition that were described earlier. We have seen how IQ stands as the most famous attempt to quantify brain functioning in the interest of developing standards of normalcy and deviance. As

Gould (1996) documents, IQ was originally mobilized in accordance with the logic of eugenics. To this day it remains the measure that best reflects “the argument that intelligence can be meaningfully abstracted as a single number capable of ranking all people on a linear scale of intrinsic and unalterable mental worth” (p. 20). There are certainly similarities between IQ and the procedures associated with brain training. IQ was originally thought of as a ‘mental age’, to be determined through succinct tasks resembling those found in brain games (e.g., counting coins). Following Gould’s description, both IQ and brain games abstract cognition as a series of numerical values, then track these measures along linear scales. Yet contrary to IQ’s assumption that these measures are intrinsic and static, in the case of brain games ‘mental worth’ is uncompromisingly imagined as *alterable*. In fact, the brain’s transformational potential is the prevailing rationale for brain game consumption. This is in keeping with the logic of optimizing health, and the departure in contemporary biopolitics from the desire to repress the ‘unhealthy’ (Rabinow & Rose, 2006). Re-shaping the brain is said to be especially important for older consumers who must simultaneously reckon with the medico-scientific reality that they will experience cognitive decline and the politico-economic reality that well-being is increasingly a matter of personal, consumer-based vigilance.

With this in mind, I suggest that brain games can be understood as both enabling and constraining. Whether or not they ‘work’ – which, again, has not been the concern of this study – brain games imagine older persons as active and empowered to modify their own well-being. This research has shown that such conceptions of later life circulate first through brain game marketing. This is thanks to the deployment of cognitive experts,

consumer confessionals, ‘service’ journalists, and evocative mind-body comparisons. Evidently, an optimistic perspective on ageing is also embedded in brain training software made to ‘screen and intervene’ so that subjects will alter their lifestyles in the interest of ameliorating ‘impairment’ or guarding against ‘decline’. These manners of positively portraying later life and ‘at risk’ cognition are significant, given the historical (mis)treatment of older adults and those deemed cognitively ‘deficient’.

Yet as third age consumers face exhortations to delay the onset of ageing, brain training becomes less a matter of selective identity work and more a pressing health-based responsibility. More specifically, it is a market-based responsibility, and as such raises two overlapping concerns. The first of these follows Vincent, Tulle, and Bond’s (2008) call for consideration of the ethical questions that arise in anti-ageing endeavours. It is necessary to ask whether it is in fact ethical for an industry that benefits financially from the pursuit of anti-ageing to simultaneously be at the forefront of developing both standards for and representations of what successful ageing comprises. The logic of neoliberalism suggests that it is up to the rational consumer-subject to decide whether brain training is a worthwhile pursuit. Yet such a perspective fails to acknowledge the extent to which industry’s emphasis on the value of brain training implicitly invokes – and might thus stimulate consumerism through – ageing-related *anxieties*. The language of ‘use it or lose it’ is especially significant in this regard, as it signals the image of a mind that is incorrigibly ‘lost’. Indeed, while the deployment of the brain-body metaphor on the surface conjures notions of vitality and strength, it simultaneously smuggles in a vision of the brain as lethargic, atrophied, and weak. This is the far less glamorous, if equally important, side of third age discourses that researchers have previously

highlighted. As Dionigi (2006) observes, to disavow the stereotypes associated with ageing through the logic of ‘use it or lose it’ is to simultaneously perpetuate the assumption that ageing is naturally both unbecoming and undesirable.

A second, related point is that attending to cognitive ‘weakness’ through consumer technologies fosters concerns over social inequality. A prevailing criticism of neoliberalism’s desire to solve health problems through the market is that it fails to account for: a) the unequal distribution of wealth across the population; and b) the impacts of structural/environmental conditions on healthy living (Crawford, 2006; Kemp & Denton, 2003). Nonetheless, there is evidence at present that the neuroplasticity concept is influencing public policy, as both governments and formal health organizations are taking interest in the development of brain training services. As one case in point, and as noted in the Introduction to this dissertation, the provincial government in Ontario, Canada recently partnered with private donors in funding the Baycrest Centre for Brain Fitness. Baycrest’s CEO in turn noted that, “A big part of our mandate is to share our discoveries through the commercialization of our evidence-based cognitive interventions” (Baycrest.org, 2010). The concern here is that such health ‘solutions’ will be far more palatable and feasible to the materially privileged, especially if new brain training products – like those studied in this research – call not just for initial purchase but for ongoing consumerism. In this sense, brain training appears to be initiating allegiances between policy makers and industry that are not dissimilar to those formed with respect to matters of health and the body. Indeed, despite criticism of the science underlying ‘obesity epidemic’ discourses (Gard & Wright, 2005), state policies, institutional policies (e.g., in education), and popular media have offered complementary

pedagogies on how to attain the slender ‘ideal’ (also see Evans, Rich, Davies, and Allwood, 2008). Of course, there remains scepticism over the validity of brain training science, and thus scepticism that exclusion from ‘neurobic’ activity is in fact personally damaging. Even if brain games fail to work precisely as advertised, however, as shown above they powerfully reinforce neoliberal rhetoric – specifically the notion that matters of health are best addressed through spending-power and personal vigilance (Higgs et al., 2009).

In his influential book on ageing and popular culture, Blaikie (1999) nicely captures how conceptions of ageing have transformed over time:

... popular perceptions of ageing have shifted, from the dark days when the ‘aged poor’ sat in motionless rows in the workhouse, to a modernizing interwar phase when ‘the elderly’ were expected to don the retirement uniform, to postmodern times when older citizens are encouraged not just to dress ‘young’ and look youthful, but to exercise, have sex, diet, take holidays, socialize in ways indistinguishable from those of their children’s generation. There are no rules now, only choices (p. 104).

This chapter has provided an initial examination of what appears to be the latest ‘choice’ for seniors: the option to assiduously train one’s brain to ward off the assumed effects of chronological ageing. Against Blaikie, however, the argument presented herein suggests there is one guiding rule underlying this newfound trend: that when it comes to questions of cognitive health, growing older is a matter of personal risks, to be addressed via choices made in the marketplace. The brain, like the body, has become a site for consternation, care, and commercialized interventions. Brain training might indeed have arisen from the neuroplasticity concept, but it is evidently guided by – and thus serves to reinforce – neoliberal logic as well. Of course, there remains a need for further research into the field of cognitive exercise. I would recommend in particular studies on how brain games are used in social settings, and into consumer responses to industry messages

about health and ageing. Such research might continue the tradition of exploring the gendered nature of audience experiences (e.g., Gray, 1992), given that the vaunted third age demographic contains a majority of female consumers. Whether these individuals embrace or rebuff 'active ageing' discourses and the logic of 'use it or lose it' remains to be seen.

## **4. Smartphone Apps and the Mobilizing of Health Consumption**

In their writing on new media, Dan Schiller (2007) and Nigel Thrift (2003) highlight the proliferating state of mobile technologies. Products like laptops, ‘supertoys’, and, more recently, smartphones reflect the observation that “computing is now moving out to inhabit all parts of the environment” (Thrift, 2003, p. 391). At the same time, consumer technologies are playing a growing role in the management of health and corporeality. This is in keeping with neoliberalism’s desire to find market-based means for dealing with issues like illness and obesity (Crawford, 2006; Dworkin & Wachs, 2009). This chapter reports key findings from a study of new technologies that operate at the intersection of these trends: health and fitness ‘apps’ (i.e., software applications) for the highly successful Apple iPhone. It draws from and aims to contribute to the fields of media studies, surveillance studies, and the sociology of the body.

The iPhone has been lauded to the point that religious metaphors frequently surface in its description (Campbell & La Pastina, 2010). Like other smartphones, a central appeal of this device is its sophisticated multi-functionality. In addition to telecommunication features, the latest generation iPhone is fitted with web browsing, photographic, video watching, mp3-listening, and motion tracking capacities, among others. Of all smartphone components, however, apps are perhaps the most celebrated. These are software products that allow users to take up an assortment of new and familiar activities on their smartphone handset – everything from banking to game-playing to searching for health information. When it comes to the iPhone, apps of both free and paid varieties can be perused and chosen for download at Apple’s ‘App Store’. This online site

contains a vast array of app sub-categories from which to begin one's selection, including finance, news, weather, sports, travel, books, business, and healthcare and fitness. In turn, these sub-categories contain their own listing of specific software products, of which there are often thousands to choose from. With revenue incurred through sales (in the case of paid apps) and/or through in-software advertising, the app business is currently thriving. Recent estimates have it as a \$7-billion industry, with expected growth to \$30-billion by 2013. It has been said that, at present, Apple "dominates" this market (Lorinc et al., 2010).

Despite their popularity, apps have yet to be subjected to any formal academic analysis. This is especially needed in the case of health and fitness apps, given the claims in app marketing that these technologies provide new avenues towards a better state of health (as described below). This too has been said in media commentaries, such as the assertion from the gaming website IGN that the best health and fitness apps "offer nothing but beneficial information and excellent inspiration for living healthier" (Buchanan, 2010). This study specifically used methods of content and textual analysis to examine online marketing for a selection of popular health and fitness apps (n=240). It was designed to explore both the functionalities of these products and the ways they give meaning to the concepts of health, fitness, and the body. As reported below, the analysis of marketing documents unearthed three overlapping app categories: those for consuming health/medical data ('informational apps'); those for receiving fitness, dietary, or 'lifestyle' instructions ('instructional apps'); and those that turn the iPhone into an interactive tool, whether for partaking in surveillance, logging data on the self, or engendering a particular affective state ('interactional apps'). Drawing from these

findings, I argue that health and fitness apps contribute to the re-configuring of biopower. They first strive to make virtually any health activity possible in transit, thus rendering self-care less a matter of institutional discipline (as Foucault described) and more one of instant communication and mobile control (as Deleuze would have it). Furthermore, they posit that virtually all components of the self – from exercise habits to physiological functions – can be ameliorated through ongoing app consumption. While apps may as a result be beneficial to some, I close by underscoring key problems associated with their approach to health and fitness. Most notably, their reliance on consumerism and self-vigilance ignores the structural determinants of health as well as the potential harms of labelling subjects as (for example) ‘obese’. Before outlining the findings of this research in full, I proceed by reviewing relevant academic literature and the study’s precise methodological approach.

## **Literature Review**

### **Towards a New Medical Assemblage**

Though Foucault is commonly regarded as a theorist of confinement, Deleuze (1995) observes that he was in fact one of the first to recognize the limits of institutional control. In his most influential works, Foucault (1977, 1978) meticulously describes how social institutions became key sites for governing corporeality. The operation of biopower – that is, the processes intended to foster life, as opposed to repress it, and to instil an ethic of self-care in the populace – required the careful circumscription of space, whether in prisons, schools, barracks, or clinics. This enabled close and continuous observation of inmates/students/soldiers/patients and the exertion of disciplinary forces

aimed at modifying their behaviour. Yet as Deleuze (1995) writes, “we’re moving away from disciplinary societies, we’ve already left them behind. We’re moving toward control societies that no longer operate by confining people but through continuous control and instant communication” (p. 174). Though the impacts of this are visible across a range of disciplines and institutions, ‘instant communication’ has both affected and been affected by health and medicine in particular. In Rose’s (2007) view, we have not witnessed the complete “death of the clinic” in recent years, but have seen the emergence of a dynamic “medical assemblage” with new communicative capacities (p. 10).

A first trend that is important in this regard is the proliferation of information on health and illness through new media outlets. The Internet is the most significant among these, for it holds the ability to pluralize medical knowledge by bringing new actors into the processes of data production and consumption (Hardey, 2001). As Miah and Rich (2008) argue, online health resources have become so pervasive that it is appropriate to speak of a rampant ‘medicalization of cyberspace’. This has certainly engendered concerns over the reliability of online medical data, yet it has also stimulated interest in the subjectivities produced through new forms of information sharing. Shilling (2002) suggests that conventional interpretations of Talcott Parsons’ ‘sick role’ model, where the patient is seen to be submissive, are challenged by the possibility for patients to ‘shop around’ online for medical opinions. From this perspective, “the internet provides individuals with numerous avenues through which information about a condition can be gathered, and with unprecedented opportunities for checking diagnoses and prescribed treatments” (Shilling, 2002, p. 630). In Foucauldian terms, the ‘pastoral’ power long held by health authorities – that is, the power to deliver infallible medical diagnoses and

prescriptions – is increasingly disrupted by the ability of the public (or ‘flock’) to procure health resources and information from other sources.

As scholars have shown, the information circulating through non-traditional medical sites at times takes the form of instructions on how to be ‘healthy’ and ‘fit’ as well. The concept of bio-pedagogies has recently proven popular in describing this trend (Wright, 2009). Through the prefix ‘bio’, this concept first references Foucault’s aforementioned notion of biopower, where normalizing forces implore subjects to meet established standards of health and fitness. For example, Body Mass Index (BMI) has become the bellwether tool for identifying ‘abnormal’ bodies. Those registering a weight/height score of more than 25 kg/m<sup>2</sup> are classified as ‘overweight’, while those above 30 kg/m<sup>2</sup> are interpellated as ‘obese’ (Gard & Wright, 2005). Through the root term ‘pedagogies’ this concept highlights how prescriptions on how to improve the self are flourishing: “[bio-pedagogical] sites are not necessarily (and indeed mostly) in schools, but are everywhere around us, on the web, on television, radio and film, billboards and posters, and pamphlets in doctors’ waiting rooms” (Wright, 2009, p. 7). As an example of this, Murray (2009) describes the rise of medical websites that take ‘confessions’ from users about their bodies (e.g., through BMI calculators), then offer ‘tips’ for finding a doctor, exercise and eating plans, and suggestions like logging a food diary to track daily consumption. In other words, the advice once confined to spaces like the clinic is digitized and disseminated online.

## **From Surveillance to the ‘Surveillant Assemblage’**

Of course, for Foucault, enclosure and confinement were nowhere more significant than in the process of surveillance. He famously described ‘panopticism’ as a model for monitoring subjectivities located first in prison designs and later in sites like the clinic (Foucault, 1973, 1977). By deploying surveillance as a potentiality whose presence could never be confirmed nor disproved (e.g., the unseen prison guard), the panoptic model aimed to foment self-surveillance and self-discipline from ‘watchees’. As Haggerty and Ericson (2000) write, its purpose was to have individuals “reflect upon the minutia of their own behavior in subtle and ongoing efforts to transform their selves” (p. 607). While Foucault’s formulations on this matter have helped shape surveillance studies, recent trends suggest panopticism’s lessening significance. For one, monitoring of the body is increasingly dispersed across public and private space, as with closed-circuit television cameras (Greenberg & Hier, 2009). Much like medical information and biopedagogies, in such cases surveillance is uprooted from its institutional confines. New technologies have also transformed the role of both ‘watchers’ and ‘watchees’ in relations of surveillance. In one sense, those in the latter group increasingly *embrace* their role as targets of data gathering. As Andrejevic (2004) writes in his analysis of reality television, perpetual surveillance is commonly “welcomed as a means of confronting and challenging one’s own beliefs and actions rather than feared as a form of social control” (p. 86). In another sense, with visual technologies ‘watchers’ need not be centrally located. Mathiesen (1997) writes of the emergence of ‘synopticism’, where the masses cast a discerning gaze on those appearing (for example) on television. This is a case of ‘the many’ watching ‘the few’, as opposed to the inverse relationship that characterized

the prison panopticon. Rich and Miah (2009) have even problematized the ocularcentrism of surveillance altogether. They describe the emergence of ‘prosthetic surveillance’ whereby a tactile connection between flesh and technology enables the body and/or its movements to be ‘seen’ and recorded.

It is with these limitations in mind that Haggerty and Ericson (2000) propose the concept of the ‘surveillant assemblage’ as an alternative to the panoptic model. Drawing from Deleuze and Guattari (1987), they explain that assemblages arise when a variety of heterogeneous objects or ‘flows’ – for instance, flows of information, commodities, people, technologies, or institutions – are fixed together, even if in fleeting ways. Indeed, what we increasingly see in the realm of surveillance is the suturing together of numerous monitoring techniques, as well as surveillance hardware/software and human and non-human observers. Rather than assuming panopticism has disappeared, then, from this perspective it can be regarded a potential surveillance mechanism – one that can be replaced by or assembled with others. Though assemblages are spatially and temporally contingent, what ties them together is desire: “The rationality, the efficiency of an assemblage does not exist without the passions the assemblage brings into play, without the desires that constitute it as much as it constitutes them” (Deleuze & Guattari, 1987, p. 399). Much like Foucault, Deleuze and Guattari stress that desire in this sense should not be seen as an inherently negative force, but rather one that is active and productive. In turn, Haggerty and Ericson (2000) contend that surveillant assemblages are not deployed strictly to identify or rectify deviant behaviour, but rather to fulfill a range of productive wants.

Among these is the desire to produce particular bodies and subjectivities. Indeed, the body remains a central target of surveillance, albeit in a slightly different way than Foucault imagined. Surveillant assemblages tend not to scrutinize the body in its entirety, but rather take concern with *isolated* bodily components and *specific* movements. An important concept in this is the notion of ‘striation’. This refers to the processes whereby breaks or divisions are introduced into ‘free-flowing’ phenomena, such as the free or even spontaneous movements of the body. The purpose of this is to create “fixed paths in well-defined directions, which restrict speed, regulate circulation, relativize movement, and measure in detail the relative movements of subjects and objects” (Deleuze & Guattari, 1987, p. 386, emphasis added). In other words, striation aims to create predictability and homogeneity in movement, and to capture information so that parts of the body can be known in new ways. Importantly, this no longer requires confinement, given that communication technologies can translate bodily movements into quantified, representational data – or what Deleuze (1995) calls ‘data doubles’.

### **Biopower and the Consumer-Citizen**

All told, then, a trend has emerged towards the decentralization of biopower: information is disseminated online; the body is monitored in pieces and across space. While technologies have evidently been central to these changes, *consumer* technologies are at this point especially important. Rose (2007) argues that citizens are now imagined primarily as citizen-consumers, meaning they are encouraged to use purchasable commodities to engage in activities like bodily surveillance and maintenance. From this perspective, life itself is deemed a sort of enterprise, as subjects are to make rational

investments in their bodies and selves so as to make the best of it. Biopower in this sense operates in accordance with neoliberalism, a model of governance where market interactions are called for in the purveyance of virtually all goods and services. Andrejevic (2007a) adds the important point that, in calling for the user's input, interactive and customizable technologies are especially effective in equating empowerment with consumerism. With interactive commodities, "[t]he promise is that the final product will be more satisfying the more effort one invests in preparing (oneself for) it" (Andrejevic, 2007a, p. 144). Yet despite recognition of the growing role played by consumer culture in the governance of corporeality, scholarly research has not always kept pace with the rapid speed of technological innovation. As said at the outset of this chapter, smartphone health and fitness apps in particular require academic scrutiny, given their popularity and the unique ways they transmit and record information about health and the body. Through an analysis of their online marketing, this research aims to make an initial contribution towards understanding these products and their relation to broader trends in the creation and sharing of health information. It was specifically designed to address the following research questions: 1) what functionalities or procedures do health and fitness apps enable?; 2) what meanings do these technologies associate with health, fitness, and the body?; and 3) to what extent might these procedures/meanings offer opportunities for empowering consumer-citizens?

## **Method**

The marketing texts under scrutiny in this research are from an Apple company website that provides descriptions of health and fitness apps resembling those found at

the App Store (Apple Inc., 2010). It also contains and regularly updates a list of the 240 most popular of these products. Examining these documents is appropriate for answering this study's research questions given both the depth and nature of information on offer. Indeed, the product synopses at this site generally contain some combination of the following: the product's name, which is often highly descriptive in itself; a detailed overview of the procedures made available to consumers; lengthy commentary on the app's merits; links to the app developer's website, which at times provides additional data; and 'screenshots' that show select interfaces from the app's software. With the last of these elements, consumers are given insight into the precise ways in which different apps transfer information. For instance, app descriptions might contain screenshots of fitness instructors modeling exercises, sample weight and exercise graphs, or listings of factual information on drug interactions, among many other possibilities.

This research follows Bryman (2004) and Hine (2000) in viewing online materials as textual artifacts that can be examined with traditional qualitative methods. Content and textual analyses were used to assess the product descriptions for 'popular' health and fitness apps (n=240), as listed on Apple's promotional site on a randomly chosen date in September, 2010. The benefit of content analysis is that it "enables the researcher to produce a comprehensive map of a given field of discourse, that is, to delineate trends, patterns, and absences over large aggregates of text" (Greenberg & Hier, 2009, p. 466; cf., Deacon, Pickering, Golding & Murdock, 1999). This is especially valuable for this research since 'trends' and 'patterns' in health and fitness apps have yet to be subjected to scholarly analysis. Textual analysis, meanwhile, is more useful for interrogating meaning within selected texts. It also has been successfully employed in studies that

connect the development and marketing of new technologies to broader societal trends (e.g., du Gay et al., 1997; Leiss et al., 2005). Deacon et al. (1999) note that selecting a sample size in this type of research requires balancing “what is desirable with what is feasible” (p. 120). Examining popular health and fitness apps certainly might exclude unique and important (if unpopular) products, yet it also allows a more thorough assessment of some of the most prominent technologies on offer.

The initial goal of the content analysis was to categorize apps according to their apparent primary functionality. As described below, apps were ultimately labelled as ‘informational’, ‘instructional’, or ‘interactional’. These classifications were determined by looking for repetitive terms in app names or product descriptions. For instance, interactional apps tend to contain words that intimate measurement of the body, such as ‘graphing’ or ‘tracking’, while instructional apps usually feature ‘step-by-step’ guides. It is important to note that there is significant overlap between these categories; the decision to give an app a particular label was based on its ostensible defining qualities. For example, instructional apps occasionally contain data on medicine or nutrition, but what separates them from more basic ‘informational apps’ is that they also disseminate bio-pedagogies. The next step was to organize apps within these broad categories. Table 1 in the following section shows the respective ‘target areas’ within informational, instructional, and interactional apps. In each step, categorization was an iterative process, meaning decisions on where products ‘fit’ could be changed based on re-readings of data (Rudman, 2006). The textual analysis that followed comprised detailed note-taking on product descriptions with the goal of uncovering the meanings attributed to the notions of

health, fitness, and the body. This stage of the research also led to some re-ordering of product categorizations.

## **Findings**

Table 1 summarizes the key features of ‘informational’, ‘instructional’, and ‘interactional’ apps. The apps in these categories are reviewed in full in the sections that follow.

**Table 1 – Summary of App Functions**

<b>Type</b>	<b>Informational (n=50 apps)</b>	<b>Instructional (n=50 apps)</b>	<b>Interactional (n=140 apps)</b>
<b>Primary Function</b>	Disseminate data	Disseminate bio-pedagogies	Surveillance, human - technology reciprocation
<b>Target Areas</b>	Illness/medicine; nutrition; 'lifestyle'	Exercise; nutrition; 'lifestyle'	Exercise/body; nutrition; mood; physiological functions
<b>Flow of Data</b>	Mainly one way: technology → user	Mainly one way: technology → user	Reciprocal: technology ↔ user
<b>User's Role</b>	Consumer	Consumer	Consumer, producer
<b>Key Words</b>	Information database; monograph; science/evidence	Exercise database; 'step-by-step' instructions; 'tips and tricks'; coach/trainer	Personal database; tracking; monitoring; watching; logging; graphing; massaging
<b>Desired Outcome(s)</b>	Mobile information consumption; medical literacy	Mobile physical activity; 'Ideal' bodies/behaviours	Mobile surveillance; 'ideal' bodies/behaviours
<b>Examples</b>	<i>Davis's Drug Guide; WebMD Mobile; GoodFoodNearYou</i>	<i>Get Running (Couch to 5K); Yoga Trainer Lite; Lose the Belly (Weight Loss for Men)</i>	<i>Virtual Trainer; Bmi+Bodyfat Calculator; iWatchr; iPregnancy (Pregnancy App)</i>

## **Informational Apps**

The apps coded as ‘informational’ in the analysis stage (n=50 apps) have the dissemination of knowledge about health and the body as their apparent primary function.

The majority of these contain factual medical data, including extensive databases on

diseases and their associated symptoms. *Medscape*, for instance, advertises a digital catalogue of over 3,500 diseases, conditions, and clinical procedures. *Taber's Medical Dictionary* is said to be equipped with 60,000 medical terms and, to help with their comprehension, 30,000 pronunciations. For its part, *Diagnosaurus DDX* features a searchable database with 1,000 diagnoses divided according to symptom, organ system, and other criteria. *WebMD Mobile* takes this browsing capacity a step further, encouraging users to input specific symptoms or 'problem' body parts to learn of health concerns that might be lurking. Though products of this kind are sometimes said to be popular among health professionals, they are evidently available to the public too. As such, they lend support to Miah and Rich's (2008) observation that there is now "a vast variety of health material and resources that exist outside of the communicative realm of official health care systems or medical institutions" (p. 40). Along with diagnostic information, knowledge of cures and remedies is accessible as well. For example, *Davis's Drug Guide* has synopses on thousands of generic and trade drugs, while *Drugs & Medications* has a pill identification tool covering a vast array of pharmaceuticals.

With the growing medicalization of the Internet, information on illnesses and remedies can certainly be found elsewhere. WebMD, for instance, has a popular medical website. Yet app marketing frequently highlights the novelty that lies in the mobile deployment of knowledge. This is reflected in app names like *MedScape*, *WebMD Mobile*, and *Aetna Mobile*. The last of these is built around tasks like searching for health providers or for information on medical claims while in transit. It specifically employs the iPhone's GPS to help users find a doctor's office based on their changing location. The evocatively named app *iTriage (Symptom Checker)* promotes similar functionalities.

As is said at the product developer's website, "With iTriage, you can look up symptoms, find possible causes for your symptoms, determine the appropriate treatment path, and locate the closest healthcare providers to your current location or any location you choose" (Healthagen, 2011). ZYRTEC® *AllergyCast* likewise appeals to the mobile consumer, in its case by transmitting allergy forecasts based on the subject's GPS-determined position. Mobility is also suggested in the moniker of product developer Unbound Medicine, Inc., makers of the aforementioned apps *Diagnosaurus DDX* and *Davis's Drug Guide*, among others. *WebMD for iPad* also makes clear that its information on medical symptoms can be consumed regardless of one's specific location.

In these ways, health and fitness apps initiate a form of interstitial knowledge transfer, ostensibly designed to enhance the public's medical literacy. Amid such assertions it is not uncommon for app marketing to simultaneously invoke traditional components of medical treatment, presumably to signal the reliability of a given product. As online medical data has become more prominent, governing organizations "have warned that much of the information available online may be misleading and potentially harmful" (Miah & Rich, 2008, p. 44). It is perhaps unsurprising, then, that app names sometimes invoke traditional medical tactics or purveyors of care, as in the case of *iTriage (Symptom Checker)* and *Nursing Central*, respectively. Other apps strive for reliability by announcing that their medical knowledge is 'trusted' or supported by 'science' and 'evidence'. While such assurances may be convincing, app marketing occasionally contains caveats that can be seen to *discredit* a product's authority and/or evidential basis as well. The description of *WebMD Mobile*, for example, acknowledges that medical advice is *not* on offer with this application, despite its detailed exegeses on

illnesses and remedies. Other apps feature legal disclaimers that their medical synopses should not supersede the diagnoses of traditional health authorities. *Mental Illness* and *Drug Addiction* – both from the same developer – are cases in point. Thus, while on the whole informational apps provide means for side-stepping typical medical hierarchies, at times they also reinscribe the authority of traditional health care providers.

Apart from medical data, informational apps include those with databases on food and nutrition and those that target users' lifestyle interests. The former sub-category includes apps like *Restaurant Nutrition*, which lets users search through menu options according to calorie and fat content, carbohydrate levels, and other measures. It also includes *Eat This, Not That! the Game*, featuring fast food comparisons where users are challenged to select the healthiest of two menu options. This function is further explained in 'screenshots' for this product that juxtapose food items like hamburger 'combo' meals from competing restaurant chains. Though *Eat This, Not That! the Game* does not give precise dietary plans, it does reflect contemporary anti-obesity discourses by asking users if they wish to wage a 'war' on fat. *GoodFoodNearYou* is another app with restaurant information. Like many of the medical apps described above it targets mobile consumers, in this case by telling them they can make quick and healthy eating decisions while at home or in transit. Lastly, apps focused on consumers' lifestyle interests include a small number of products with astrological predictions, sex facts that are ostensibly for entertainment (rather than for bolstering medical knowledge), baby names, and data on sports or hobbies.

## Instructional Apps

Informational apps thus contribute to the decentralization of health information, making knowledge of things like medicine, illness, and nutrition not only more prevalent but also available ‘on the go’. According to marketing texts, this caters to the supposed needs of a mobile ‘flock’ of health consumers. The apps categorized in this research as ‘instructional’ (n=50 apps) contain databases on health and the body too. In their case, however, they take the step of actually teaching users how to achieve ‘desirable’ bodily aesthetics or forms of comportment. In this regard, instructional apps are bio-pedagogical: they involve the moral regulation of “how to eat, how to move and how to live” (Rail & Lafrance, 2009, p. 76).

A small number of instructional apps feature directives for carrying out First Aid procedures. Otherwise, these products offer pedagogies around exercise, diet, and lifestyle changes. Exercise apps, which form the majority of the products labelled instructional, provide means for getting ‘in shape’. This usually involves targeting and working to improve precise components of the self, such as training to lose one’s ‘belly’ or to develop ‘six pack’ abdominal muscles. It also requires adherence to a workout regimen. The description for *Hundred PushUps*, for example, notes that while most consumers surely could not manage a mere 20 pushups, devotion to the provided exercise program is a means for rectifying this. *C25K (Couch to 5K)* and *Get Running (Couch to 5K)* each provide detailed plans for novice runners to become more skilled. Indeed, their names suggest they are apposite technologies for even the most sedentary consumers. Training programs are also on offer with apps called *NikeWomen Training Club* and *Men’s Health Magazine*. These advertise training drills and videos for achieving

desirable and, as we shall see, gender-appropriate fitness outcomes. The names of other apps are immediately suggestive of their purpose, such as *Two Hundred Situps* and *How to Build Six Pack Abs – wikiHow*. A series of yoga-based instructional apps are also available to consumers.

The purported merits of re-shaping the body were on display with previous generations of fitness technologies as well. For example, Camacho (2006) demonstrates how workout videos equate empowerment with ongoing bodywork. But the apparent novelty of instructional apps is that they enable customized workouts and/or the mobile deployment of pedagogies. *Runner's World SmartCoach Free*, for example, claims to combine scientific evidence, run-training experience, and information on the subject's background (culled through questionnaires) in the development of personally-tailored training regimens. The app *Yoga STRETCH Lite* likewise claims to provide personalized instruction, in its case via images and voiceovers. So too does *Get Running (Couch to 5K)* give studio-recorded instructions and encouragements. Splendid Things, the developer of this last product, portrays it as the equivalent of a human coach: "It alternates walking and running for the first six weeks, to **ease** you into running without leaving you exhausted. Get Running **figures everything out for you** – the best days to run, how long to run for, and when to take a day off!" (Get Running, n.d., emphasis in original). Indeed, it is not uncommon for app marketing to proclaim not only personalization but also anthropomorphism, as technologies are depicted as capable of mimicking or even fully replacing human experts. In terms of mobility, app marketing frequently highlights the merits of receiving one's fitness directives 'anytime', 'anywhere'. *Yoga Trainer Lite* implores consumers to practice yoga wherever they desire,

suggesting that with mobile technologies once-sedentary spaces can be re-configured. *Women's Health Lite* is similarly said to have workout tools for use inside and outside the gym.

While these products thus house a wealth of physical activity options, at the same time there is evidently a dearth of desirable bodily outcomes on display. Specifically, slender yet 'properly' muscled bodies are valued above all others. Health and fitness in this sense are commonly reduced to bodily aesthetics. Textual messages implore consumers to rid themselves of their 'gut' or to seek a 'sleek' and 'toned' frame. The app *Fitness Muscle* asks rhetorically if consumers wish to become a muscle building 'machine', while *Men's Health Workouts* has training programs with titles like 'Sculpt a V-Shaped Torso' and 'The Hard-Body Express Workout'. Unsurprisingly, screenshots for *Men's Health Workouts* feature images of men with v-shaped, 'hard' bodies themselves. Ideal bodies are also on display with *Womens Health Lite*, only this time textual exhortations to improve one's body are partnered with images of women who are toned and uncompromisingly thin. Even apps for yoga, an activity sometimes associated with health outcomes like relaxation, tend to rely on lean silhouettes or images of sculpted female figures, thus further corroborating the merits of only these body types. If it is somewhat surprising that such a vast collection of corporeal technologies promotes such narrow views of the body, ultimately this is in keeping with other workout commodities (e.g., videos and magazines) that trade on the merits of 'hard bodies' too (Camacho, 2006; Dworkin & Wachs, 2009).

Instructional apps based around nutrition also tend to reinforce the value of slenderness and weight loss. These products go beyond the informational apps described

above by partnering data about food properties with guidelines for changing eating habits. Some technologies deliver recipes through video instructions and/or expert commentary, as in the case of *Easy Recipes: See How to Cook Healthy Meals (Videos)*. Others are evidently meant for dieters, and reflect Murray's (2009) finding that bio-pedagogies include 'tips' on losing weight. For example, apps like *Lose the Belly (Weight Loss for Men)* and *Lose the Belly (Weight Loss for Women)* leave no doubt about their purpose; the goal of slimming the body is supported with nutritional and motivational videos, as well as images of the 'ideal' male and female bodies described above. *Diet2Go* once again demonstrates the personalization that apps make possible, offering weight loss estimates based on the user's habits and bodily traits. From there, those engaging with this product are guided through a weight loss regimen on a day-by-day or even meal-by-meal basis.

Finally, 'tips and tricks' are on offer with a series of instructional apps based around users' lifestyles. In most cases, these provide advice related to beauty (e.g., *Organic Beauty* and *MakeUp Free*), relaxation (e.g., *Relax with Andrew Johnson Lite*), and sex (e.g., *iKamaLite Sex Guide*). It is worth noting that products in the latter two sub-categories at times highlight messages that deviate from the common notion that health is strictly a matter of bodily aesthetics. For instance, marketing for the product *Relax with Andrew Johnson Lite* emphasizes that 'de-stressing' is central to one's health and wellbeing.

## Interactional Apps

As Wright (2009) suggests, it is not uncommon for bio-pedagogies to centre on weight loss and bodily aesthetics. In the case of instructional apps, however, it is notable that such procedures are said to be mobilized and customized. In their method of delivering pedagogies on fitness and health, instructional apps still tend to feature a one-way flow of health/fitness data. ‘Interactional’ apps – the final category in this research – are unique in the importance they devote to ongoing, reciprocal relations with their users. Indeed, marketing for these products (n=140) regularly invokes the lexicon of surveillance studies, prioritizing functions like ‘watching’, ‘tracking’, and ‘logging’.

The largest sub-category of interactional apps involves products for tracking fitness activities and/or bodily changes. With most of these products consumers can record their exercise habits, such as distance travelled when running or walking, fluctuations in exercise speed and intensity, or repetitions performed in the weight room. Though this information is sometimes inserted manually, many interactional technologies take bodily measures by their own accord. The built-in hardware of smartphones is invaluable in this regard. *Nike+ GPS* and *iMapMyRIDE*, among other apps, use the GPS technology included in the latest generation iPhone to record and map exercise routes. Accelerometers and pedometers are also used for tracking. For instance, *iTreadmill: Pedometer Ultra w/ PocketStep™* calculates your stride length then counts steps as you move about your daily activities. According to its developer, this product is superior to its original, less mobile namesake:

Think of it as a treadmill that you have with you everywhere you go, without all of the heavy equipment. Like a real treadmill, iTreadmill has been designed to keep you on pace and have instant view of important parametrics during your run. Yet iTreadmill even goes beyond what a real treadmill has to offer, such as the Customizable parametric views, the Run History table which allows you to

compare past runs at a glance, Cool Graphs which will motivate you, and Step Count and Strike Rate measurements, which many find useful in monitoring their activity and increasing speed (iTreadmill, n.d.).

The app *Virtual Trainer* offers a notable case of technology-user interactions as well. Not only does this product take measures of exercise, it also delivers fitness routines like the instructional apps described above. Most importantly, *Virtual Trainer* claims to shift the latter based on the former, which is to say that as users improve their fitness scores (or, presumably, as they regress in them) their workout regimens adapt automatically. Here the personalization of fitness technologies is taken even further, as consumer activities are responded to in real time. So too is anthropomorphism claimed once again, as this product is said to function as a real trainer would.

While activity tracking is prioritized in the first instance, interactional exercise products are also promoted as personal fitness archives. Many of these technologies keep meticulous records of physical activity, and plot changes through numerical logs, charts, and graphs. The app *Gym Buddy* goes as far as to say it will graph anything that can be expressed numerically. The body itself is also frequently quantified. Products with names like *Bmi+Bodyfat Calculator*, *Track Your Weight*, and *Weightbot – Track your Weight in Style* are made to highlight fluctuations in measures like BMI over time. As the developer of the last of these products says, after setting a weight goal, “Weightbot even estimates the actual day you will reach your goal with a trend line that’s generated based on your current weight change averages” (Tapbots, 2011). In a similar vein, *iStayFit* charts body fat percentage, while *Target WEIGHT for Adults (Personal Daily Weight Tracker & BMI)* creates a personal weight dashboard with current and targeted measures of the body. These recordings are of course first made for personal consumption, yet it is notable that they can oftentimes be shared with others through social networking sites. A

number of apps encourage the ‘confession’ of workout results through sites like Facebook and Twitter, and in some cases even make automatic postings on the user’s behalf.

To describe these interactional apps in surveillance terms, their apparent aim is to monitor the user so that the user can in turn monitor her/himself. This was of course the intention of the prison panopticon, but in this case we find an assemblage of surveillance techniques. As described above, interactional apps first take measures of the body’s movements or makeup, often simply by being worn during exercise. In such cases a form of ‘prosthetic surveillance’ emerges, as movement is ‘visualized’ through a flesh-technology connection (Rich & Miah, 2009). Subsequently, corporeality is quantified and inscribed through technologies like BMI graphs and exercise charts. Using Deleuze and Guattari’s (1987) lexicon, movement is *striated* so that the body’s ‘flows’ can be captured and turned into ‘data doubles’. This enables the body to be known in new ways, as graphs of exercise scores are returned to users so they can engage in self-surveillance. Furthermore, this encourages *self-discipline*, as consumers are implored to work earnestly towards both improving their scores and achieving an ‘ideal’ bodily aesthetic. Measures like BMI are central to this, as they announce the supposed presence or absence of (for example) obesity. But marketing for interactional apps also features pictures of the same slim and toned bodies that are found in instructional software. In a final and indeed highly novel step, consumers can participate as the objects of *synoptic* surveillance by posting bodily measures to social networking sites. Mathiesen’s (1997) description of synopticism has been applied mainly to the practice of television watching. But the phenomenon of ‘the many’ watching (and presumably judging) ‘the few’ evidently

intensifies with new media. Whence products like *RunKeeper Pro* encourage buyers to share their fitness results with the public, it in fact promotes a circumstance whereby the singular subject is (wilfully) under the gaze of a plurality of fellow consumers.

Another prominent sub-category of interactional apps involves devices for monitoring dietary habits. These products are primarily geared towards tracking food consumption, and in doing so tend to promote asceticism in the intake of proteins, fats, carbohydrates, and especially calories. *Weight Watchers Mobile*, for example, assigns a point value to different foods based on their nutritional content, then budgets and tracks how points are spent from meal to meal. The Orwellianly named *iWatchr* is made for a similar purpose. As its developer, DavoliApps, proclaims, “It will calculate point values for the foods you eat and keep track of your daily logs” (DavoliApps, 2011). In these ways, users are asked to closely monitor their food consumption twice: once as they eat, and again in the form of a numeric representation (e.g., statistics on calorie intake). Other apps track calories burned in addition to calories ingested to generate a statement on the consumer’s net caloric gain or deficit over a given period of time. In addition to these functions, a few nutritional apps offer novel means for consumers to act as ‘watchers’ of their surrounding environment. With apps like *Calorie Counter by MyNetDiary* and *Calorie Counter by FatSecret*, the iPhone can purportedly be used as a barcode scanner – that is, as a tool for translating a product’s barcode into a synopsis of its nutritional contents. Of course, while ‘empowering’ the consumer in this way, the names of these products suggest that monitoring the environment is simply one other mechanism en route to monitoring the self. As the developer DailyBurn says of their app *FoodScanner - Calorie, Diet, and Weight Loss*, “FoodScanner is the absolute quickest and easiest way to

find foods and track how many calories you eat throughout the day” (Daily Burn, Inc., 2011).

The final two sub-categories of interactional apps comprise products for altering the user’s mood or for specific consumer groups like pregnant women. The former generally involves products for ameliorating sleep patterns, engendering concentration or relaxation, or inducing other affective states. A number of these products make use of the iPhone’s ability to vibrate, such as *Vibrate Massager Free*. Others, like *iBrainWave SE - Binaural Beats and White Noise (Free)*, claim to stimulate desired brainwaves and thus a desired state of mind via binaural tones. In such cases, human-technology interactions are not only physical but also sub-conscious. Perhaps even more interesting are apps that create data doubles of the body-at-rest, such as *Sleep Cycle alarm clock*. As is said by this app’s developer, “The Sleep Cycle alarm clock is a bio-alarm that analyzes your sleep patterns and wakes you when you are in the lightest sleep phase” (Maciek Drejak Labs AB, 2009). Users of this product also have privy to sleep graphs apparently made for the purpose of sleep (self-)surveillance. Most of the apps in the latter category – that is, for specific consumer groups – are built around pregnancy and menstruation. The app *iPregnancy (Pregnancy App)*, for example, offers an ‘OB Visit Tracker’ for recording measures like weight, blood pressure, and mood during pregnancy. For their part, apps like *iPeriod Ultimate (Period/Menstrual Calendar)* and *Period Tracker Deluxe* are for those who wish to track ‘symptoms’ pertaining to their menstrual cycles. With these interactional products, it is not necessarily the fit and slender bodies described above that are promoted as ideal. Yet they are nonetheless biopolitical in their mode of operation, as they record and contrast personal measures in the interest of ensuring that the body is

functioning ‘normally’. The desire to govern bodily functions like menstruation and pregnancy invokes the historical tendency to exert control over the female body in particular (Foucault, 1978).

### **Discussion and Conclusion**

In response to the first research question outlined above, what this study initially reveals is the arrival of new procedures for creating a ‘healthy’ and ‘fit’ citizenry. As noted, smartphone apps are not the first health and fitness technologies. Evidently, though, they intensify the trend towards health consumerism by striving to make virtually any health-based activity portable. This is initially apparent with informational apps. Like medical websites before them, these products offer new avenues for health communication. Yet in purporting to make health knowledge unfailingly and immediately available – even in transit – informational apps advertise the merits of circumnavigating not just the clinic, but any confined locale whatsoever. Of course, it is left to consumers to decide whether this information is reliable – a matter on which app marketing sometimes provides contradictory assertions. Instructional apps operate in similar ways. Researchers have shown how (bio-)pedagogies on fitness, the body, and healthy living are now widely disseminated, appearing everywhere from television programs to posters and billboards. But instructional apps aim to make fitness and dietary directives accessible on demand, and to turn once-sedentary spaces into sites of activity. Fitness experts are supposedly made portable too, for apps are advertised as anthropomorphic trainers, coaches, or instructors.

Perhaps the most novel procedures of all, however, are contained in interactional apps. A key contribution of this research is its documenting of how these technologies initiate intimate forms of wilful surveillance. In his writing on panopticism, Foucault (1977) regards the recording and archiving of information as vital to the functioning of modernity's disciplinary sites. "The hospitals of the eighteenth century, in particular", he says, "were great laboratories for scriptuary and documentary methods" (Foucault, 1977, p. 190). The "power of writing" was that it captured the 'truth' of the patient, naming her and rendering comparisons over time and against the population a realizable end. Yet as described above, Foucault's commentaries on biopower are tied to an era of *interspersed* interpellation. In this arrangement, "[i]ndividuals are always going from one closed site to another" (Deleuze, 1995, p. 177), to be examined, treated, and named therein. On the contrary, through an assemblage of surveillance procedures, smartphone apps signal an age of constant scrutiny and mobile archiving. Interpellation is *interpolated*, as the spaces in between institutional sites are relevant to the task of recording bodily measures and, in turn, naming the subject as healthy or otherwise.

When it comes to the second research question – that of the meanings embedded in smartphone apps – 'health', 'fitness', and 'the body' are evidently imagined as malleable constructs, to be assiduously worked on and improved. This is not new to consumer culture either. As Shilling (2002) reminds us, such an 'instrumental' view of corporeality emerged alongside the leisure industry in the immediate postwar years. As described above, under neoliberalism it is marketable technologies that are increasingly sold as avenues towards 'self-improvement'. Yet what health and fitness apps suggest is not just that consumer goods can assist with self-care, but that *virtually every component*

of the self is open to scrutiny and treatment. This is especially true once again in the case of interactional apps, which target everything from the body's makeup to one's daily exercise/eating/sleeping habits to physiological functions like menstruation. Furthermore, users of these products are depicted not just as consumers, but as producers of health information. As McRobbie (1994) points out, media use has always been productive in the sense that it involves cultural expression and meaning-making. With interactional apps, though, the creation of 'hard' (i.e., quantified) statistics becomes a defining characteristic of media experience. Data production is intentionally structured-in to consumption as an avenue towards 'bettering' oneself.

In these ways, health and fitness apps contribute to the re-configuring of biopower. The subject is still encouraged to care for the self, but, as Deleuze (1995) argues, is implored to do so through instant and mobile communication and through scrutiny of the body's constituent parts. Yet whether such developments signal a form of consumer empowerment – the third question in this research – is a matter of debate. Apps may well engender a sense of pleasure and wellness for some. They may at times be catalysts for relaxation and, in the case of barcode scanners, vehicles for surveilling and demystifying the surrounding environment. But there are reasons to be sceptical of a health promotion model that requires, in turn, corporate influence and consumerism. The ease with which smartphone apps imagine health and fitness not just as malleable but as reducible to bodily aesthetics is problematic in myriad ways. Implicit in this is first that health 'problems' like 'bellies' and 'weakness' are indeed universal markers of ill-health, and, furthermore, that they are made strictly by one's own accord and can thus be overcome in much the same way. This follows Shilling's (2002) observation that the

‘hard body’, above all others, is a signifier of “control, power and moral renewal” (p. 627-628). Yet it also ignores the many structural determinants of health, such as social class and one’s neighbourhood environment (Crawford, 2006). So too does it relegate to the “realm of the unfathomable” (Dworkin & Wachs, 2009, p. 159) the less tangible components of health – a sense of security, for instance – as well as the health *problems* that can stem from ascetic dietary or exercise regimens (e.g., personal injury). Indeed, while app marketing focuses on the positive outcomes – the ‘ideal’ bodies – that can arise through consumption, less attention is given to the potential effects of labelling subjects as (for example) ‘obese’ through measures like BMI (Beausoleil, 2009). In this way, just as easily as industry might engender a sense of self-improvement among consumers, so too might it initiate a form of ‘body panic’ (Dworkin & Wachs, 2009; Wright, 2009).

The important conclusion that follows from this is that what parades on the surface as empowerment with smartphone apps stands in many ways as an illusion thereof, for it is app developers that determine in the last instance how ‘health’ and ‘fitness’ can be achieved (consumerism) and how these constructs should be defined. While the products studied in this chapter evidently represent the decentralizing of health services in some ways, their general approach to health promotion at the same time fortifies industry authority. It is true that the medical encounters described by Foucault contained their own power imbalances. Given his observations on how health knowledge has historically been consolidated in the hands of medical pastors, it is important not to be dismissive of the new circuits through which this information travels. But the need to sell health products in the ‘new medical assemblage’ is distressing in its own ways. There is a general unfairness in a health promotion model that positions consumerism –

something not possible for all – as a necessary avenue towards fitness, and a more specific concern that the pursuit of health aesthetics might stoke internal anxieties and a sense of personal inadequacy. Just because these concerns are omitted from app marketing does not mean they are non-existent.

Andrejevic (2007a, 2007b) raises one final issue related to interactive technologies: that they invite consumers to produce information not just for their own use, but for that of marketers, developers, and others who are financially motivated. Though he does not discuss this observation in relation to health commodities specifically, his general point is worth reflecting on in closing. Indeed, the very idea that consumers are encouraged to produce personal information when using apps demands consideration of whether consumerism might in fact be a form of *labour*. This is an argument familiar to readers of Dallas Smythe (1981), who famously argued that corporate media transform audiences into audience-commodities for sale to advertisers. Sut Jhally and Bill Livant (1986, 2006) add that what advertisers specifically buy with their purchasing-power is *watching-time*: “That advertising rates are determined by the size and demographics of the audience is ample confirmation of this” (2006, p. 30). Importantly, this watching-time is produced by both media outlets (e.g., TV producers) and consumers themselves – after all, if no one watched, there would be no product for advertisers to purchase. Yet it is captured and sold by industry alone. The public has thus helped construct a commodity that has surplus value, for it can be sold by media producers for a handsome profit.

This materialist understanding of media experience, while crafted by Smythe and others in research on television, to some extent retains value in the study of app

consumerism. Free apps in particular can be laden with advertising, and thus can mine the watching-time of their consumers in the way Jhally and Livant describe. This calls into question whether these products are in fact ‘free’, as commonly claimed. But where interactive media go beyond television, radio, or print in this regard is in their capacity to track consumption patterns by constructing statistical profiles of their consumers. Nielsen ratings, which use either viewer ‘diaries’ or ‘set meters’ in selected homes to monitor TV watching, seem rather elementary whence contrasted with media that record every click of a mouse or stroke of a touch-screen (see Abelman & Atkin, 2011). Indeed, with the iPhone, app purchases are made through one’s Apple iTunes account – specifically at the aforementioned ‘App Store’ – thus creating an archive of personal preferences for Apple and whomever they wish to share it with (see Andrejevic, 2007b). Since fitness results are commonly recorded through app software and uploaded to company websites, this potentially creates other centralized ‘hubs’ for storing hard data about the consumer-subject. We arrive, then, at a situation whereby consumerism is yet again a form of labour: ‘confessions’ about the self – whether of one’s body type, exercise preferences, purchasing habits, or other matters – are not simply relevant in the enactment of self-surveillance, they also produce data that has exchange value in the market. Thus, while apps entrench corporate authority in one sense by enabling industry to construct guidelines for healthy living, they can furthermore do so by extracting data from consumers that literally has value. Ubiquitous interactivity, as Andrejevic (2007b) says, “has the potential to facilitate unprecedented commodification of previously nonproprietary information” (p. 297).

## **5. Conclusion: Amusing Ourselves to Life**

A recent commercial for the Windows Phone 7, a smartphone operating system, both captures and reinforces the changing sentiment related to information and communication technologies that was described at the outset of this dissertation. The television advertisement opens by portraying a series of activities that, in their own right, are worthy of the attention of those involved. A man and his daughter share a teeter-totter. A woman gives another woman a therapeutic massage. A man lays in bed as his (presumed) partner stands nearby in lingerie. Another man uses a urinal. In each scene, however, the protagonist's attention is clearly diverted towards the smartphone she or he is holding, leading to various levels of frustration or amazement from those nearby. The man on the teeter-totter holds his end of the apparatus flush against the ground, his young daughter suspended in mid-air. The masseuse, enthralled with her phone, presses uncomfortably against her (visibly annoyed) patient. Meanwhile, the woman in lingerie is aghast at her partner's refusal to part from his phone, and ultimately launches a pillow in his direction to display her discontent. In perhaps the most outrageous moment, the smartphone handset is fumbled into the urinal – then promptly recovered and put back into use. A man standing adjacent the phone user is clearly appalled at this last act. One might presume that the overarching message here is that the use of new technologies is far too pervasive. If the commercial had ended whence the phone re-emerged from the toilet, it would be no surprise to find its source to be a critical media organization like Media Watch or Adbusters. But, as noted, the commercial is for Microsoft's latest system update. Having moved through these and other incidents of phone (over-)use, a company voiceover eventually informs us that it is time for a phone to 'save us' from our phones.

The Windows Phone 7 software, we are told, is made for one to get ‘in and out’ of consumption as quickly as possible. Indeed, the commercial concludes with another mixed-gender couple, this time sat in an elegant restaurant. The man in this case finishes with his phone and quickly hides it under the table, apparently just in time to begin eating. The statement here is that the phone, and presumably Windows 7, has served its purpose without any further consequences. This evidently pleases the man and his date.

*A phone to save us from our phones.* Though not focused explicitly on questions of health and fitness, Microsoft’s message that the problems caused by new technologies are solvable via ongoing innovation is nonetheless relevant to this research. A basic conclusion from the foregoing case studies is that active video games, brain training technologies, and smartphone health and fitness apps promise, in much the same way, that interactive products can come to our rescue. If technologies have in the past been deemed too seductive, too convenient, and too distracting from healthy living, they now strive to counter these criticisms, whether implicitly or explicitly. This is not to say that consumption is now devoid of entertainment. Video game producers seek to balance productivity and pleasure; app developers supposedly offer fitness and fun. Consider, for example, the cartoonish avatars (i.e., ‘Miis’) in the Nintendo *Wii*, or the idea that with brain games one is supposedly partaking in leisurely and disciplinary activities at the same time. Likewise, health and fitness apps like *Eat This, Not That! the Game* are said to be both informative and engaging. It is in this sense that I argue we have arrived at a point where consumer culture promises that we can amuse ourselves to life. The simple criticism that media suppress our livelihoods – that, as Debord (1994) put it, media experience involves the autonomous movement of ‘non-life’ – must be re-evaluated for

the present moment. Better: it must be re-evaluated *in conjunction* with the broader conditions of possibility in which Interactive Health Commodities have emerged. The fact that technologies like the *Wii Fit* might be enjoyable or even remedial does not go far enough in explaining their arrival. They are possible only under conditions of post-Fordism, where consumer goods are born through globally integrated systems of production and are made to be flexible, flashy, and interactive without fail. They are possible only whence neoliberalism has deregulated commodity and labour markets, and, of equal importance, has espoused in both rhetoric and policy the basic principle that people should care for themselves. And they are possible only whence neoliberalism has influenced the public's understanding of health in particular, and has driven the 'healthist' assumption that fitness is legible on the body and is achievable through 'rational' self-scrutiny. In short, Interactive Health Commodities are possible because of their articulated conjuncture, which they in turn reinforce.

Yet to say that media culture promises our 'salvation' via consumerism is far from an endorsement of Interactive Health Commodities. In fact, when considered from a critical and theoretically-informed position, it becomes apparent that active video games, brain games, and health and fitness apps are not *really* about health promotion. Rather, they are about conflating health and consumerism, for their manner of mobilizing health discourses and practices obstinately relies on purchasing-power as *the* instrument for partaking in 'healthy' pursuits and on the facile notion that 'health' and 'fitness' are individualistic, meritocratic, and aesthetic constructs. While some scholars might well continue to assess whether interactive technologies are adequate tools for health

promotion, in the meantime health promotion itself has unquestionably become a more-than-adequate tool for promoting consumerism.

In saying this, there is a need to recognize that products like the *Wii*, *Brain Age*<sup>2</sup>, and the *Virtual Trainer* app represent only one small component of what Nikolas Rose (2007) calls the ‘new medical assemblage’. Indeed, the use of consumer products for health purposes is a relatively newfound – albeit burgeoning – trend. Furthermore, it is almost certain that consumers will find some immediate benefits from the use of these technologies. These might be as ethereal and ephemeral as sensing pleasure or as material and socially-valued as losing weight. But to those who see health as a public and multi-faceted construct, rather than a private and aesthetic one, these ‘benefits’ amount to pyrrhic victories, if victories at all. If we recognize, as many epidemiologists now do, that ‘healthy living’ is inexorably inflected by social determinants – class-based differences, for example – and if we further recognize, as a much smaller number of critical health scholars do, that the social determinants of health are themselves exacerbated by the onset of neoliberal capitalism (Coburn, 2000; Coburn et al., 2003; Labonte, 1997; Wilkinson, 1996; Wilkinson & Pickett, 2010), then it is fair to say that Interactive Health Commodities are not only insufficient as health ‘solutions’, but in many ways *contribute* to the problem of social inequality that drives health discrepancies. As the above case studies show, these products disentangle health and fitness from questions of security, global and local equality, and shared responsibility, and knot them instead to the pursuit of ‘self-improvement’ at the marketplace. Perhaps in another socio-politico-economic context interactive health technologies could be of greater public value; as it stands, they animate neoliberalism’s fraught re-imagining of the social.

With these arguments in mind, in this concluding chapter I aim to stitch together the most prominent themes from the above case studies, outlining in greater detail the points of convergence between Interactive Health Commodities and between these technologies and their social, political, and economic antecedents. I also comment further on what I regard as the key consequences of the ‘birth’ of this technological genre, and how critical academics might address these consequences going forward.

### **Making up (Fit) People**

A first point that can be made in thinking across the above case studies involves the subjectivities that are constructed or ‘made up’ with new technologies. By ‘making up people’, Canadian sociologist Ian Hacking (2002) refers to the phenomenon whereby different social and historical circumstances feature different classifications of personhood, and, in turn, enable different behaviours and activities. The waiter in Alberta aiming to enact Sartre’s *garçon de café* would struggle to do so, for instance, since this personality type is unique to postwar France. As Hacking (2002) writes, “[w]hat is curious about human action is that by and large what I am deliberately doing depends on the possibilities of description.” He continues:

To repeat, this is a tautological inference from what is now a philosopher’s commonplace, that all intentional acts are under a description. Hence, if new modes of description come into being, new possibilities for action come into being in consequence (p. 108).

Though not using this precise language, Foucault (1978) in effect documented several cases whereby subjectivities – ‘hysterical’ women and ‘deviant’ youth, for example – were made up by scientific interventions and nomenclature.

To say that technologies like active video games construct an entire classification of subjects would be to stretch the findings of this dissertation too far. But, as alluded to throughout this work, Interactive Health Commodities do *contribute* in the first instance to the formation of what have been called ‘bio-citizens’. According to Rose and Novas (2004), biological citizenship has come about in step with scientific advances – developments in biomedicine, biotechnology, and genomics, for example. The influence of Foucauldian conceptions on the formation of this term is evidenced when they claim it encompasses “all those citizenship projects that have linked their conceptions of citizens to beliefs about the biological existence of human beings, as individuals, as families and lineages, as communities, as population and races, and as a species” (p. 440). More specifically, bio-citizenship involves evaluating citizenship based on people’s devotion to enhancing their own vital existence, whether this comprises learning about the intricate components of one’s self or actually confronting risk tendencies. The latter is deemed important in that it can concomitantly benefit a larger group or population, mainly in that it ensures their ongoing survival in both biological and economic ways. In this sense, citizenship is to some extent dis-articulated from questions of rights and freedoms and is tied instead to personal ‘self-improvement’. Though Rose and Novas are concerned primarily with how people come to know their genetic origins and predispositions, Christine Halse (2009) adds that bio-citizenship is increasingly associated with perceptions of fitness and health. Bodily aesthetics are certainly important in this regard, though ‘objective’ measures of the self are also means by which ‘good’ and ‘responsible’ citizenship can be weighed. Halse contends that BMI in particular has become a ‘virtue’ discourse in that it ushers in a physical diagnosis and an implicit moral commentary on

whether one is doing ‘her part’. This is not the lone measure of ‘healthy’ citizenship now in circulation, but it does fittingly capture the idea that selfhood is a quantifiable construct (Rose, 1999).

The above case studies demonstrate a number of mechanisms – or, one might say, generic processes – by which Interactive Health Commodities contribute to the ‘making-up’ of bio-citizens. Four of these stand out in particular:

1) *Risk metrics*. What first unites active video games, brain games, and smartphone apps is the idea that health and fitness can be objectively measured. *Wii Fit*, for example, was designed to take account of BMI and weight. As shown in Chapter Two, it was game designer Yoshiyuki Oyama’s desire that people weigh themselves daily so that their Miis undergo weight loss in parallel with their ‘real’ bodies. Health and fitness apps quite commonly reify health through measures of BMI and weight as well. In fact, they quantify even more aspects of the self, recording everything from fitness activities to dietary choices to bodily functions. Take, for example, the way *iWatchr* logs food ‘scores’ over time, or how *Sleep Cycle alarm clock* takes account of one’s sleeping patterns. In the case of brain games, metrics like Brain Age and FBi serve as indicators of whether the (ageing) user is doing enough to stay mentally ‘fit’.

What makes all of these basic mechanisms for measuring the subject into *risk* measures is the notion that one’s own score is located on a continuum of potential results, and can easily be juxtaposed against scores that are deemed ‘ideal’. These types of risk measures have been institutionalized at least since the eighteenth century (see Haggerty & Ericson, 1997). The changes that came with urbanization and industrialization in particular – the mass congregation of bodies, for instance – brought with them

epidemiological concerns. As Deborah Lupton (1999) writes, at this time, “[t]he science of probability and statistics was developed as a means of calculating the norm and identifying deviations from the norm, thus embodying the belief that rationalization would bring disorder under control” (p. 6). Interactive Health Commodities maintain the basic proposition that numbers can suitably indicate one’s level of health. But they more closely resemble what Haggerty and Ericson (1997) call ‘risk media’ in that their tactics for measuring and classifying subjects are technologically, rather than institutionally, bound. As said in Chapter Three, the risk metrics used in new technologies furthermore depart from health interventions of past eras in that they are used to cajole ‘risky’ subjects towards improving their livelihoods, rather than serving as a rationale for their isolation from the rest of society.

2) *Surveillance*. The above case studies reveal several ways in which the users of new technologies are invited to partake as both ‘watchers’ and ‘watchees’ in relations of surveillance. ‘Invited’ is a carefully chosen verb, for unlike past iterations of surveillance, Interactive Health Commodities require one’s wilful participation. People are ‘watchees’ first in the sense that they are examined by technologies. The *Wii* and interactional health and fitness apps monitor their subjects through ‘prosthetic’ or ‘panhaptic’ surveillance, as it has variously been labelled. In doing so, they ‘see’ the human body simply by coming into contact with it, whether at the interface of the *Wii Fit* platform and the foot or at the articulation of the smartphone and the user’s arm or leg. As Rich and Miah (2009) say, bodies and technologies, real and virtual spaces, are not so much independent in such arrangements but rather are bounded and blurred. The app user is also the focus of

surveillance whence she decides to post personal measures to social networking sites in the style of synopticism.

The idea that technology consumers can become ‘watchers’ is equally important. One way in which this arises is through the inclusion of barcode scanners in apps like *FoodScanner – Calorie, Diet, and Weight Loss*. According to marketing texts, products of this kind offer a direct route towards understanding nutrition; it does not seem far off for apps to be able to ‘scan’ other components of the environment as well. For the time being, it is far more common for Interactive Health Commodities to contain both exhortations towards and mechanisms for *self*-surveillance. This is aided in large part by the ability of technologies to translate personal metrics into longitudinal performance charts. So, the *Wii* turns BMI into BMI graphs, *HAPPYneuron*, *Fit Brains*, and *Brain Age*<sup>2</sup> translate brain game results into historical records, and interactional apps construct line graphs showing peaks and valleys in nutritional scores and bodily metrics, among other things. In Chapter Two, this monitoring of ‘data doubles’ was described as a form of ‘responsibilization’, in the sense that users are essentially checking whether they are progressing or regressing in relation to pre-established norms. Alan Hunt (2003) argues that responsibilization always brings with it moralization – indeed, with these new media there is an easy slippage from ‘progressing’ in health measures to ‘succeeding’, and from ‘regressing’ in them to ‘failing’.

3) *Discipline*. Where the subject is indeed ‘failing’, however, technologies promise that change can be had. The findings of Chapters Two, Three, and Four each demonstrate that Interactive Health Commodities are designed to *treat* their users as much as they are made to measure them. For example, *Virtual Trainer* is an interactional

app that both assesses the body and prescribes an exercise regimen. It thus links surveillance and discipline, in that the former suggests the extent to which the latter is needed. Brain games are similarly diagnostic and remedial: they deliver an initial ‘verdict’ on brain functioning (Brain Age, FBi, Cognitive Profile) and an accompanying brain training ‘sentence’. As described in Chapter Two, Nintendo’s in-game trainers can quite literally discipline those underperforming in games like *Wii Fit Yoga*. As game designer Yohei Miyagawa says, if you ‘slack off’, “the trainer will notice and tell you off or ask you to come back” (Us.Wii.com, 2008, Volume 4, Part 5). With Interactive Health Commodities, discipline thus first exists as a means for improving one’s health. It is notable, though, that these technologies also construe discipline as an *end*, primarily through representations of the already-disciplined self in marketing and software. *Brain Age*<sup>2</sup> does this in two ways. On the one hand, its corporate marketing site diagrams the properly-functioning brain, showing how a well-trained brain operates when digesting information. On the other hand, images of female and male older persons who are outwardly fit and happy reinforce that brain training is a worthwhile pursuit. Meanwhile, active video games and health and fitness apps draw from the same catalogue in representing fit and disciplined subjects. In promotional texts, the presence of lean, fit, but gender-appropriate bodies is as conspicuous as the absence of alternate bodily portrayals.

4) *Expertise*. Finally, expertise is deployed in and alongside Interactive Health Commodities to reinforce the value of risk metrics, surveillance, and discipline. This is perhaps unsurprising given Lupton’s (1999) assertion that, in contemporary Western societies, an entire ‘apparatus’ of “expert research, knowledge and advice” has developed

in relation to risk thinking (p. 9). Dr. Kawashima's involvement in the production of *Brain Age*<sup>2</sup> is said in online marketing texts to show just how viable this product is. The neuro experts at fitbrains.com and happyneuron.com likewise make a medico-scientific case for treating the mind like a muscle. The incorporation of expert opinions into marketing texts suitably demonstrates the arrival of what Knights and Sturdy (1997) label 'marketing the soul'. This is not just a matter of creating *ersatz* meanings – it is not just a matter, that is to say, of portraying consumerism as an avenue towards vague constructs like (for example) happiness or emotional fulfilment. Rather, in marketing texts, consumerism is literally made out to be a matter of life – of maximizing it by warding off cognitive and bodily decline. What is unique about the technologies studied in this research is that they also claim to anthropomorphize expertise. Instructional apps are said to be health and fitness experts in and of themselves, as evidenced in app names like *Yoga Trainer Lite* and *Runner's World SmartCoach Free*. Software features like voice-overs and videos purportedly enhance the sense that one is truly being trained. In Chapter Two, I argued that the *Wii* takes this even further, using the admittedly awkward nomenclature 'quasi-object risk expert' to explain how it diagnoses risks and prescribes basic forms of treatment without consulting a human expert in the flesh. On the whole, then, Interactive Health Commodities evidently reinscribe and re-organize the operation of expertise, whether by deploying human authorities or serving as experts themselves. These products are further supported by experts from outside industry, such as service journalists who report on the Damoclean risks that purportedly threaten our wellbeing.

Taking all these mechanisms into account sheds light on the politics of interactivity as they pertain to new media. As described in Chapter One, media

consumption has to some extent been an active process since its very origins. The circuits of culture, as Hall (1980) says, do not involve one group (producers and/or marketers) throwing a neatly woven ball of meaning to another (consumers), but rather comprise chains of constrained meaning-making. Even that which appears on the surface as a one-way medium like radio or television still requires people to make sense of what they are confronted with. But the users of active video games, brain games, and health and fitness apps are asked to do even more than this. Sometimes they are asked to physically come together with these technologies, in most cases so as to make themselves ‘fitter’ in socially obvious ways. At other times they are asked to produce and monitor (risk) data about themselves, and to ingest expert knowledge that explains precisely what this data means. This is not to say that meaning-making is nullified with new media. Rather, as Andrejevic (2007a) argues, it is to say that ‘active’ audiences are now imagined not just as consumers in the classical sense but as *interactive* audiences or ‘prosumers’ (producer-consumers) as well. In the cases outlined above, interactive experiences are specifically portrayed as avenues towards bio-citizenship, as media use is said to be a means for becoming ‘fit’ and ‘healthy’ in measurable ways.

### **From Bio-Citizens to Consumer-Citizens**

Yet to say these health interventions are simply devoted to making up bio-citizens is incomplete, for Interactive Health Commodities implicitly insist that ‘healthy’ living is a matter of consumer-citizenship also. Perhaps Nintendo, as quoted in Chapter Two, indeed has a wish for ‘everyone’ to become healthy. What is more likely, however, is that they have a desire for everyone to consume their products. “As politics begins to take on

more ‘vital’ qualities,” Rose and Novas (2004) say, “and as life itself becomes invested with both social meaning and capital, the vitality of each and all of us becomes a potential source of *biovalue*” (p. 454, emphasis in original). It is worth exploring the implications of this political economy for the public and for capital alike.

For the public, the key point is that the technologies studied in this dissertation inexorably require participation in consumer culture. If the subject is deemed unhealthy, if she or he is imagined as a *de facto* ‘patient’, then using health commodities is a means for rectifying this. The *Wii Fit*, after all, can purportedly take one’s faulty centre of balance and make it right. What is required is only an initial investment in the *Wii* console, then another in the *Wii Fit*’s supporting apparatus – not to mention a television set and sufficient leisure time and domestic space to perform exercise in-house. According to marketing materials, brain training can defy the perils of chronological ageing or a ‘poorly’ operating brain. There is first a financial premium that must be met, however, in that these technologies (and their subsequent updated versions) must be bought. For their part, health and fitness apps might have a nominal cost, or even no cost at all. But one must have already made a substantial smartphone investment, and in many cases must ‘pay’ even more by consuming in-software advertising or by confessing details about their consumption habits to marketers. Just as importantly, once a supposedly objective state of health has been met, the patient becomes what Rose (2007) calls a ‘pre-patient’ – that is, one who is perpetually at risk, whether of slowed brain functioning or an elevated BMI. At this point, consumerism becomes a means for maintaining a healthy state of being, as opposed to rectifying an unhealthy one. It furthermore is a viable option for us all, for in the end everyone is a pre-patient of some

kind. On these points, the general conclusion drawn in the above case studies was that Interactive Health Commodities reaffirm neoliberalism's mantra that people – all people – should 'invest' in themselves through private, market-based interactions. The idea that attaining or maintaining health might be beyond the individual's purview is erased from this equation *in toto*.

For capital, the idea of unending consumerism speaks to the growth imperative of both contemporary capitalism writ large and individual business enterprises writ small. To explain this, I turn to Harvey's (2010) instructive insights on the Enigma of Capital. What is central to capitalism's survival, Harvey contends, is re-investment. This is what underlies the sustenance of broad economic growth and small-scale financial profit. Specifically, it is said that the economy must grow at a rate of at least two percent so that profits can be re-invested to beget further economic expansion – that is, to ensure the next two percent growth. The slightest dip in this rate engenders panic and, if prolonged enough, a financial crisis, the likes of which we have recently seen. This imperative is downloaded to industries and then to businesses, each of which must grow or, as Schumpeter famously put it, face destruction. But the question of where to re-invest is a complicated one. Certainly investing in newer, cheaper forms of production is one common route. This is supported by neoliberalism's deregulation of labour markets, and goes far in explaining how a technology like the *Wii*, originally imagined in Japan, is physically pieced together in China, as discussed in Chapter Two. Harvey (2010) contends that the wave of privatization that washed across public services in the 1980s was likewise a consequence of the need to find new sites for re-investing yesterday's profits. He also describes in unflattering terms the 'financialization' of the economy since

the 1970s. The construction of a sub-prime derivatives market in which to invest, for instance, was a key precursor to the 2008 recession. The rub here is that in this economic model, growth is exponential, meaning that even if the two percent target stays steady, the absolute sum for re-investment grows *ad infinitum*.

From this perspective, the arrival of Interactive Health Commodities is spurred on at least in part by the technology sector's desire to find new sites for economic expansion. As Kline et al. (2003) remark, the video game industry is exceedingly competitive. To momentarily halt growth is to cede market share, perhaps irreparably. The same can be said of the smartphone business. Thus, with Interactive Health Commodities, we first find devoted attempts at appealing to new consumer demographics. The idea that the *Wii* was made for 'families' is reinforced in marketing texts that portray a diversity of satisfied users. If, in the past, video gaming was associated with young males, it is now said to be appropriate regardless of age, gender, or race. Brain game marketing takes this further by appealing to older adults above all others. What aids in selling a single commodity to an assortment of users in this way is the above-noted tendency to portray all consumers as potentially at risk. Marketing and software do not so much make consumerism a matter of expressing identity-related tastes, but rather one of *addressing* identity-related *risks*. In other words, the makers of health technologies invest in new demographics by reducing identity politics to the politics of risk – or at least by striving to do so. In brain games, for example, age, gender, and occupation are deemed relevant primarily in that they form demographic pools against which to compare one's results, and not in that they would make one more or less inclined to use a product like *Fit Brains* in the first place.

Second, with interactive products we find investments in novel sites *within* the body. Deleuze's (1995) contention that contemporary capitalism is interested as much in the parsed 'dividual' as the holistic individual is well-supported by this research. For example, brain training introduces consumer culture to a part of the human self it previously ignored. Health and fitness apps too are devoted to specific bodily elements and behaviours, including particular physiological functions, specific muscle groups, or the intake of certain nutrients throughout the day. Third and finally, industry evidently aims to expand by re-inventing the spaces in which (health) consumption can occur. Health and fitness apps offer the best cases in point. They purport to make consumption an interstitial activity, treating and tracking bodies regardless of their precise location. The *Wii* and *Wii Fit*, meanwhile, were designed to turn the living room into a space of discipline, surveillance, and consumerism, all at the same time. Ultimately, the idea that Interactive Health Commodities involve re-investment in each of these areas is further supported by the emergence of newer and generally more sophisticated product updates with each passing year: *Brain Age* is made into *Brain Age*<sup>2</sup>; *Wii Fit* has recently given way to *Wii Fit*<sup>2</sup>; and health and fitness apps are constantly revised and updated, then promoted to consumers as more beneficial than ever.

Bio-citizenship and consumer-citizenship: two sides of the same coin. Considering these twin subject-archetypes together allows a final overview of the significance of Interactive Health Commodities vis-à-vis historical and contemporary trends in 'treating' health and fitness. Foucault spent the bulk of his career documenting a very specific system of governmentality. The disciplinary society involved institutional forms of control, and featured live, human experts, whose mastery of the soma was

unmatched by laypeople. Space was carefully demarcated and delimited so that subjects could (literally) be seen in specific ways, and so that the ‘seer’ could be concealed in ways that were equally strategic. The ‘seen’ individual, in turn, was conceptualized predominantly as an holistic entity – one whose particular existence contributed to or detracted from the survival of a general mass. Indeed, Foucault observed that the ‘unhealthy’ in disciplinary societies were commonly deemed ungovernable, as they posed, *inter alia*, a biological threat to the population in general. Implicit in this arrangement was the notion that health is mainly a state concern, or at least that state authorities above all others should implore subjects to take on the patriotic duty of self-care. The clinic, the prison, the physical education class, the barracks: these were overseen by the state in the project of maximizing public wellbeing.

Yet bio-citizens and consumer-citizens are the inhabitants of societies characterized by neoliberal governmentality. This new arrangement does not nullify what preceded it entirely. Expertise remains, though experts now speak to the ‘flock’ in respectful and polemical tones, for the onset of health consumerism means that the ‘patient’s’ spending dollars must be fought over in a competitive marketplace. Expert opinions are also embedded in and disseminated through technologies, effectively anthropomorphizing objects. Risk metrics remain, though subjects are implored to record ‘data doubles’ that correspond to the divided components of the self, and of course to use commercial technologies to accomplish this. Surveillance remains, though we are as apt to see technology-bound surveillant assemblages as we are human ‘watchers’, and to see wilful ‘watchees’ as much as we are reluctant ones. Discipline remains as well, though the value of self-discipline is prioritized more so than ever. For their part, while the

‘unhealthy’ continue to be subjected to various forms of stigma, they are also believed to be candidates for self-care at present. After all, ‘personal responsibility’ can help wean anyone off their ‘dependency’ on the state. Implicit in this new arrangement is that capital should be thoroughly involved in the conduct of conduct, not to mention in creating standards of what ‘proper’ behaviour comprises. The state takes a managerial role that involves creating the basic conditions for consumer-industry relations to thrive. The clinic, the prison, the physical education class, the barracks: the state has not abandoned these, but has allowed industry’s incremental encroachment.

At the outset of this dissertation I cited Deleuze’s astute comments on the apparent harmony between the history of technological innovation and the shifting governmental landscape. If simple mechanical machines corresponded to sovereign authority, he says, and if thermodynamic machines did so for disciplinary societies, then cybernetic machines and computers reflect and support our current conjuncture. Indeed, I argue that Interactive Health Commodities contribute to the making of bio- and consumer-citizens, and in general to the means by which subjects are treated in neoliberal times.

### **Neoliberalism and Discontent**

If these arguments on bio-citizenship and consumer-citizenship are granted, let us return to the matter of whether Interactive Health Commodities should be perceived as positive or problematic innovations. These technologies are often exalted in news accounts, or at least are accepted as entertaining and constructive without consideration of their various implications. But the above case studies reveal many reasons to be

critical of the growing presence of products like the *Wii* in our daily lives. As noted above, the neoliberal system they contribute to is inherently flawed and profoundly inequitable. Wendy Brown (2005) describes neoliberalism as a form of governance that reaches “from the soul of the citizen-subject to education policy to practices of empire” (p. 39). In other words, it has small-scale and large-scale impacts, each of which I consider in relation to Interactive Health Commodities below.

In terms of their large scale implications, a first and most pressing concern involves the relations under which the technologies studied in this dissertation are made. Though the methods used here prohibit a detailed investigation into conditions of material production, in Chapter Two I highlighted Laird’s (2009) problematic findings on how the *Wii* and similar products physically come into existence (Laird reports that the Apple iPhone is built in Foxconn factories in the Chinese city of Shenzhen as well). Even if labour conditions are better than Laird’s description, or even if corrective measures are taken once inequalities come to light, the key point in this regard is that minimizing the financial costs of production is a *structural* component of capitalism (Harvey, 2010). Low wages and poor working conditions do not arise by chance. And neoliberalism, with its drive towards deregulation, only exacerbates such problems. On the one hand, under neoliberalism, labour demands are difficult to surmount in the first place since trans-national businesses are by definition dis-articulated from the state, and in turn from a democratic voting bloc. On the other hand, a ‘borderless’ world opens a seemingly unlimited range of labour markets, meaning even if labour concerns arise, capital can respond by shifting, rather than re-organizing, production (Marchak, 1991). For these reasons, labour issues persist in the electronic sector, and show no signs of abating.

The consuming public is impacted by neoliberalism's politics of exclusion as well. As each of the above case studies suggests in their own right, the ongoing purchase of health services is quite obviously more palatable to those who can afford to do so. The messages that Nintendo's products are open to 'everyone' and that health and fitness apps are immanently customizable are undermined by the prohibitive costs of utilizing these technologies. There has for some time been concern over 'digital divides' of this kind. Barney (2005), for example, notes that Internet use continues to be stratified according to differences in class, as well as factors like age and geography. But the key point here is not so much that people will simply be 'left out' of popular new trends. Rather, it is that Interactive Health Commodities are problematic in that they reinforce a politico-economic system that is increasingly reliant on market-based interactions in the project of improving or maintaining the self. While it is worth considering the impacts of medical technologies on their purchasers, as Arthur Frank (2002) writes, "the effects of medical consumerism may ultimately be as great, and possibly greater, on those who do *not* themselves receive these services but who live in a society of which these services are a part" (p. 16, emphasis in original). In other words, neoliberalism's advocacy of personal responsibility has a compounding effect. It not only rewards the financial 'haves' over the 'have nots' in that the former can procure the services and goods they desire, but also creates a reality whereby 'having' is *the* mechanism for enacting citizenship in the first place. This, I believe, is what Thomas Lemke (2001) means when he says that neoliberalism is a "political project that endeavours to create a social reality that it suggests already exists" (p. 203). David Coburn's (2000) writing on neoliberalism lends further support to this critique. He cites evidence suggesting that contemporary

capitalism's method of professing personal 'investments' is ultimately detrimental to relations of trust and social cohesion. This only intensifies existing inequalities, and makes people less healthy in an holistic sense (cf., Wilkinson, 1996).

In response to this criticism, one might point to the use of active video games in public settings like school physical education. This does go a small way towards broadening access to Interactive Health Commodities. Yet, as noted, these technologies have smaller-scale – and I argue still negative – implications as well, and it is not clear that these would recede simply by making new devices more easily accessible. As Darin Barney puts it (2005), “[w]hile a lack of access to [information and communication technologies] is certainly a source and marker of significant inequality, it does not necessarily follow that simply being connected constitutes empowerment in relation to these technologies” (p. 155).

In Chapter Three I argued that brain games, in their insinuation that the mind can be ‘lost’ beyond repair, might concomitantly instil a sense of panic over health and wellness. A similar point can be made in relation to active video games and smartphone apps, since marketing and software for these technologies represent the body in exceedingly narrow ways. As Shari Dworkin and Faye Linda Wachs (2009) explain in their book Body Panic, representations of ‘fit’ and lean bodies go far in inciting feelings of inadequacy and concern from media consumers. Such portrayals are especially evocative in ‘healthist’ conditions whereby the gender-appropriate body (and increasingly the ‘fit’ brain, I would add) is deemed a worthy metonym for health and responsibility (Crawford, 2006). Yet body panic, these authors add, is created as much by excising certain components of health and fitness from media portrayals as it is by

including images and messages within them. To disregard alternative representations of the body is to subtly stigmatize them, and in turn to reinforce the hegemony of what is already deemed 'normal'.

It is worth noting that in making these points, Dworkin and Wachs are interested mainly in 'older' media like print and television advertisements. So too are others who have written about our contemporary 'panic' culture (e.g., Rail & Beausoleil, 2003). But Interactive Health Commodities add the crucial element of personalizing health discourses by actually measuring the user and tracking her or him over time. While above it was said that these are risk interventions, here we can add that they are potentially stigmatizing as well. Indeed, as Rich and Miah (2009) point out, in 2008 British media reported a father's complaint that his 10 year-old daughter, by all accounts active and healthy, was deemed 'fat' by the *Wii Fit* (Daily Mail, 2008). With this in mind, it is clear that Interactive Health Commodities efface not simply alternative representations of the body, but also the potential negative consequences of tying 'responsible' living to the dogmatic pursuit of objective standards of health and fitness. The idea that that the risk metrics contained in the *Wii* or smartphone apps might be as stigmatizing as they are enlivening and entertaining is obscured in marketing materials that only profess the latter possibilities. Also absent from advertising texts is Natalie Beausoleil's (2009) observation that disordered eating can be a consequence of the unrelenting promotion of ideal bodies via measures like BMI. This was suggested by the father of the 'unhealthy' girl as well: "I know it is just a game but we already have to worry about young girls starving themselves to look like magazine models and now we have a game that tells them they're fat. This to me is very worrying" (Daily Mail, 2008). The promotion of

‘virtual’ exercise also says nothing of the possibility for physical injury. This is despite the fact that injury was so common after the *Wii*’s release that news media playfully created the diagnosis of ‘Wii-itis’ (Reuters, 2007). The general point here is not to highlight single cases as grounds for dismissing a new technological genre. Rather, it is once again to say that Interactive Health Commodities reinforce broader problems in how we talk about and ‘treat’ the (consumer-)citizen at present. Perhaps it is not surprising to find that the ‘virtualizing’ of sport and exercise brings many of the undesirable consequences that sports scholars attribute to ‘real’ sport and exercise to begin with.

Taken together, these criticisms point to troubling trends in media culture. Though we have taken what Grossberg (1994) describes as “a detour through theory” (p. 5), we have arrived at a conclusion that does not depart too substantially from the media-as-repression tradition described in Chapter One. It remains too narrow to say that Interactive Health Commodities are merely repressive of vital experiences. But the finding that they are made to produce bio- and consumer-citizens does not mean that they are naturally empowering or democratic. Indeed, following Brian Wilson’s (Forthcoming) writing on sport and peace, democracy can usefully be regarded as a process more than an end state. That is to say, we see gradual movement in any society towards and away from the principles of democracy without always seeing changes in voter rights or government structures. ‘De-democratization’ from this perspective involves, at least in part, waning public say in issues of concern (cf., Tilly, 2007). Despite all their promises of customizability and choice, interactive media ultimately represent greater corporate presence in our lives – presence that, in the end, is unaccountable to the public, and leaves no recourse for the consumer labelled ‘fat’, ‘unfit’, or, more tacitly,

‘irresponsible’. To say this another way, while industry may mobilize agency in the sense that the consumer is more involved in knowledge production, this is still constrained agency in the sense that norms are created ‘from above’ for the user to comply with. In his own remarks on interactive media, Andrejevic (2007a) neatly summarizes this phenomenon: “It’s not that consumers aren’t really participating. They are. But their participation is all too often limited to achieving the aims of marketers – aims not necessarily their own” (p. 28). If the neoliberal retort to this criticism is that consumers can in turn ‘vote’ by *not* consuming, I would highlight in turn the panic discourses that compel them to do otherwise.

### **Re-democratizing**

California. California. You’re such a wonder that I think I’ll stay in bed.

- Rufus Wainwright

Rufus Wainwright succinctly and melodically captures a process that researchers, theorists, and writers alike have taken great pains to describe. If we understand ‘California’ as a metonym for the unabashed hedonism of a postmodern culture, than what Wainwright calls our attention to is the notion that entertainment and wonderment might also be obstacles in the way of meaningful activity. “I’ll stay in bed” is not far off from Baudrillard’s famous proposition that, whence the sign has become all-consuming, death is a viable manner of resistance.

To be sure, the matter of dealing with the ‘wonders’ and ‘obstacles’ brought on by Interactive Health Commodities is a difficult one. It seems an odd conclusion to call for resistance against technologies that are, at least on the surface, popular and well-liked. This seems impractical too, given that it would be difficult to turn back the clock on

technological innovation. Furthermore, as Wendy Brown (2005) writes, neoliberalism dislodges – or at least aims to dislodge – the very basis for resistance to capitalism’s various impositions. As she says:

Herbert Marcuse worried about the loss of a dialectical opposition *within* capitalism when it “delivers the goods” – that is, when, by the mid-twentieth century, a relatively complacent middle class had taken the place of the hard-laboring impoverished masses Marx depicted as the negating contradiction to the concentrated wealth of capital – but neoliberalism entails the erosion of oppositional political, moral, or subjective claims located *outside* capitalist rationality yet inside liberal democratic society, that is, the erosion of institutions, venues, and values organized by nonmarket rationalities in democracies (p. 45, emphasis in original).

As Brown’s reference to Marcuse implies, oppositional politics have also been troubled by theorists like Foucault. Resistance remains a difficult matter for those writing in the Foucauldian tradition. Though some point to his insistence that power by nature contains an element of resistance, Foucault’s analytics nonetheless make it difficult to imagine how ‘conditions of possibility’ might change. This is precisely the criticism levied by Dorothy Smith (1999) when she writes that “theorizing the subject as a creature of discourse provides no ground on which different perspectives could arise” (p. 103). Indeed, in his archaeological method, Foucault mostly disregards contemporary politics and questions of how they might be changed for the better.

Yet Interactive Health Commodities have consequences that surely must be addressed in some way. If, as Brown suggests, a dialectics of change has lost its theoretical and practical force, then I argue instead for *pedagogies* of change in relation to active video games, brain games, apps, and similar products. There is a need for critical discourse on these technologies, the likes of which I think can only arise in educational contexts. No doubt, immediate issues emerge in pointing to educational systems as sites for initiating social change. As Michelle Stack and Deirdre Kelly (2006)

point out, the influence of formal education is waning in comparison to that of the informal pedagogies of news and entertainment media – the latter becoming more pervasive by the day. Moreover, these authors highlight how corporate messages are increasingly infiltrating, and not just competing with, the public sector. The most prominent examples of this involve advertising in schools and in textbooks, though we might well add the growing use of active games like the Nintendo *Wii* in physical education as well. As Brown's above quotation suggests, this is in keeping with the neoliberal desire to ensnare all parts of the social in the trappings of market logic. The end result is that, even in education, "[c]itizenship is at risk of being reduced to consumerism" (Stack & Kelly, 2006, p. 9). There is a concern too that seeing education as the locus for social change in fact complies with neoliberalism in the sense that there is an easy slippage into discourses of 'investing' in one's self.

But what I am referring to here are critical pedagogies on media and technologies, as opposed to teaching and learning infused with neoliberal reason. This is certainly far from the first plea for interventions of this kind in the cultural studies field. Paul Jones (1994) points out that, despite their differences, both Raymond Williams and Richard Hoggart advocate "the teaching of critical media-reception strategies to a popular audience" (p. 402). In their own practice, Williams and Hoggart were each involved in critical seminars with adult students, as well as in forms of community pedagogy (e.g., with labour groups). In more recent writing on media education, scholars have emphasized different, albeit overlapping, themes for discussion. There are first frequent exhortations for teaching on the diegetic contents of media. Scholars like Henry Giroux and bell hooks, for example, advocate for pedagogies on how media express problematic

tropes in relation to the politics of identity. The assumption in such work, as Grossberg (1994) points out, is not that people are cultural ‘dopes’ in general, but that media can powerfully create and reinforce hegemonic notions, and thus momentarily dupe any of us. Those studying physical culture have convincingly argued that the contents of sport media in particular should be deconstructed in the classroom (e.g., Andrews, 1998; Markula & Pringle, 2006; McDonald, 2009). Jan Wright’s (2004) work on ‘resistant reading positions’ is a notable example of inciting student interpretations of print and electronic media texts, followed by explanations of how these texts might relate to dominant discourses and value structures (also see Macdonald, 2002). Work of this kind goes far in corroborating Howell, Andrews, and Jackson’s (2002) request for cultural studies scholars to take action where social inequalities exist.

A second, equally important, theme involves teaching related to the broader conditions in which media and technologies are situated. There is a rapidly expanding body of literature on education in response to neoliberalism – perhaps unsurprisingly so, given the surfeit of research on neoliberalism’s dire consequences. Henry Giroux (2003, 2004) argues fervently for educational practices that address neoliberalism’s re-imagining of agency as the pursuit of private satisfactions through the marketplace. It is crucial, he says:

... that progressives, educators and other activists respond with a renewed effort to merge politics, pedagogy and ethics with a revitalized sense of the importance of providing the conditions for constructing critical forms of individual and social agency rather than believe the fraudulent, self-serving hegemonic assumption that democracy and capitalism are the same, or indeed that politics as a site of contestation, critical exchange and engagement is in a state of terminal arrest (Giroux, 2003, p. 95).

When it comes to media culture, this might mean scrutinizing and discussing the labour conditions under which technologies are made, or at least the patterns of corporate

ownership that define the technology sector in general. As Peter McLaren and Rhonda Hammer (1996) say, media education is most effective when it considers the ‘regimes’ of material production that underlie ‘regimes’ of signs. Pedagogies of this kind might also involve critical discussions on how media messages – whether from formal news media, popular culture, or elsewhere – reinscribe neoliberalism’s most fundamental tenets. Though their work is based more around leisure access than media culture, the Feminist Participatory Action Research of Pamela Ponc, Colleen Reid, and Wendy Frisby (2010) provides compelling evidence as to how critical, shared dialogue in the community can make for a powerful counterweight to neoliberalism’s social and economic injustices. There is also a growing sentiment that localized, independent forms of media production are among the most effective ways of articulating responses to neoliberalism. As Kellner and Share (2007) recount, Rhonda Hammer’s media education is a notable case in point. She invites students to produce critical, alternative movies and websites “that challenge the ‘common-sense’ assumptions about a wide assortment of issues dealing with gender, ethnicity, sexuality, politics, power, and pleasure” (p. 63; also see Hammer, 2006).

While there is thus a robust body of literature on the importance and possible contents of critical pedagogy, industry’s incessant production of new media forms means that the substance of media literacy programs is never fully settled. Stack and Kelly (2006) contend that discussions of new technologies must be further integrated into course curricula. As they say:

Educators need to engage students by analyzing that which is playful as well as engaging in an ideological analysis of that which is serious. In other words educators need to give students the tools to understand both how and why the media reports on issues such as war and curtailment of civil liberties, as well as how to foster discussion about what makes the latest shows, Internet sites, and computer games pleasurable (p. 13).

In one sense, while this dissertation is focused on new technologies, its key findings nonetheless fit nicely with the different approaches to media education described above. That is to say, they show both the problematic messages contained in media (e.g., those related to gender and the body) and the many issues of concern pertaining to the broader conditions in which interactive technologies exist. Importantly, however, the results of this work also lend support to pedagogies that go beyond concern for the meanings contained within media texts, and that consider as well how Interactive Health Commodities are meant to have extra-diegetic effects. As we have seen, apps, brain games, and exergames seek to literally transform the body as much as they strive to encode it with meaning and value. Teaching that does not account for, among other features, the risk metrics or surveillance techniques contained in high tech products would therefore fail to capture in full the changing nature and newfound consequences of technological developments. To alter Stack and Kelly's statement ever so slightly, it is imperative for educators to foment critical dialogue on that which is *simultaneously* playful and serious, as consumer culture now mobilizes playfulness towards rather significant and serious ends.

To take this matter further, any discussion of media education requires consideration of its form, as well as its content. Involving students in media production, as described above, is one manner of organizing critical pedagogy. More generally, though, and following Grossberg (1994), I would argue for a classroom context that structures teaching and learning in multiple forms, and that intentionally includes a plurality of perspectives. Critical pedagogy, Grossberg says, is most productive when it blends: a) 'hierarchical practice', meaning teaching based in the instructor's empirically-

based knowledge; b) ‘praxical pedagogy’, meaning concrete strategies for understanding the contexts in which power relations arise; and finally, c) ‘dialogic practice’, meaning inclusion of the perspectives of learners who might otherwise be silenced in political discussions. This last point is suggestive that critical teaching and learning, while continuing on at the secondary and post-secondary levels, should also expand out from formal educational settings. This is doubly important given that products like the *Wii* are finding their way into community facilities like retirement centres. The writing of Mark Coté, Richard Day, and Greig de Peuter (2006) on ‘Critical U’, a non-profit, community-based, and (ideally) non-hierarchical educational endeavour provides a unique template for carrying out such initiatives. As they write, Critical U introduces concepts “from social and political theory, political economy, and cultural studies, bringing those perspectives to bear on topics that include capitalism, globalization, food production, democracy, social movements, and mass media” (p. 344). Yet it also takes a communitarian approach to constructing knowledge on these topics, relying on both personal, ‘lay’ experiences and institutionalized forms of expertise. Certainly, no matter how reflexive, this model is always encumbered by its own power dynamics. But the point is that it might introduce public voices into a media landscape that is otherwise characterized by corporate influence. In other words, it might make for initial steps towards re-democratization.

Underlying my advocacy for ‘multi-perspectival’ pedagogies of this kind (Kellner, 1995; Kellner & Share, 2007) are two fundamental assumptions about teaching and learning. The first of these is the axiom, now central to cultural studies in general, that ‘audiences’ (or learners) are always-already active in the process of meaning-

making. Kellner and Share (2007) note that past approaches to media education, while noble in their intention, have sometimes mobilized a ‘protectionist’ approach to learning that sees students as inherently passive. They specifically name Postman’s Amusing Ourselves to Death – which itself concludes with a plea for media education – as a notable example of this. The second, related assumption is derived from writing on The New Literacy Studies. In this field, literacy is not deemed an inflexible and trans-historical technical skill, but rather involves practices that are both mutable and “inextricably woven into other social, cultural, economic, political, and institutional practices and contexts” (Carrington & Marsh, 2005, p. 279; also see Gee, 2008b). In other words, media literacy is always-already developing in parallel with broader changes in learners’ lives. For young people who have grown up in digital environments in particular, new technologies like smartphone apps might be more readily accepted – though not necessarily applauded – than they are by others. Youth might also have an understanding of the technical features of these devices that outstrips that of their instructors. Taken together, these assumptions are suggestive of the skilfulness of students (or the public) in analyzing new technologies, and thus offer a persuasive rationale for including their input in critical pedagogy alongside that of others.

### **Research Contributions**

Harvey (2005) avers that analytical exercises can offer important contributions towards unsettling neoliberalism. The main substantive contribution of this manuscript lies in its thorough, empirically-based excursions on active video games, brain games, and health and fitness apps. This has produced a series of research findings on these

technologies that previously were excluded from public dialogue, and that indeed show some of the fractures in neoliberal logic. First among these is the basic idea that apparatuses for shaping human activity are increasingly deployed through cultural objects. The governmentality literature has effectively demonstrated how the management of ‘free’ conduct has been spearheaded by the private sector in recent years – for instance, in the case of the pharmaceutical industry (Rose, 2007). Scholars have been less apt, however, to recognize how technologies of control like risk metrics and corporeal surveillance have been ‘folded in’ to ‘playful’ items too. In turn, the case studies demonstrate how Interactive Health Commodities contribute initially to the making of bio-citizens – for instance, in their insistence that the body and mind should be sites for relentless scrutiny – and then to the construction of consumer-citizens, as described above. But the flaws of this greater corporate presence in our lives are also on display in this dissertation. At their core, Interactive Health Commodities contain a glaring conflict of interest in that they both sell health and fitness services and comment on who should buy them. There is an immediate problem here in that one specific interest, such as the financial need to make brain training into a retail phenomenon, might impact many others, such as the mobilizing of ‘use it or lose it’ or other panic discourses in brain game software and marketing. Even if the science undergirding Interactive Health Commodities is in fact sound, matters as important as health should be entirely bereft of the possibility that one is being improperly duped. Scrutinizing Interactive Health Commodities in the style of the above case studies has furthermore shown how the enhanced presence of commercial media in the public sector distorts the meaning of empowerment and agency. Apart from the very obvious fact that empowering oneself

through consumerism is only open to the already-privileged, with Interactive Health Commodities we are dealing with *constrained* and *commodified* empowerment, as self-expression at the marketplace involves perusing a menu of options put forth by a relatively unaccountable health/entertainment industry.

It is hoped that these insights into the very substance of interactive technologies will help propel future research. The solitary pursuit of a medico-scientific research agenda on Interactive Health Commodities hinders not just an holistic view of media culture's changing landscape in general, but, more specifically, elides a much-needed conversation on the ethical questions of diagnosing the body through statistical, technology-based interventions. For example, the *entrée* of the Wii into Canadian physical education comes at the same time as this discipline is influenced more broadly by a positivist research agenda that regards measures like BMI as bearers of bodily truths (McDermott, 2007). This must be counter-balanced by a critical research agenda. Furthermore, given that this dissertation highlights problems that are both immanent to Interactive Health Commodities and that pertain to their broader conditions of existence, I am hopeful that a practical contribution of this work will be to supplement the critical toolkits of those teaching about media, health, and sport.

In terms of its methodological offerings, a first and most basic conclusion that can be drawn from this dissertation is that corporate websites should continue to be regarded as important objects for study. The use of different marketing strategies at sites like *brainage.com* is evidently meant to fortify what Dan Schiller (2007) calls the 'selling mission'. The case studies demonstrate the seamless integration of high definition images, marketing videos, consumer confessionals, expert vernacular, interactive brain

diagrams, and myriad other features that make websites unofficial tutorials, and might well make the products they celebrate more appealing to consumers. If nothing else, the growing sophistication of online promotional sites suggests they are highly valued by industry, and are regarded as viable means for shaping the ‘taste’ patterns of different consumer audiences. The tradition of critical research on marketing is both storied and insightful, but it has yet to fully reckon with the new, ‘virtual’ ways by which corporations market towards the ‘souls’ of their consumers. This dissertation suggests this is a necessary pursuit.

Underlying this claim that promotional websites make for important research materials, however, is another, even more fundamental, methodological offering. Namely, the above chapters reaffirm Hine’s (2000) and Bryman’s (2004) supposition that ‘old’ research methods remain appropriate in the study of newfangled media forms. In one way this is not entirely surprising. As Klaus Bruhn Jensen (2010) writes, the convergence of media forms is an historical phenomenon: “each new type and degree of medium recycles the forms and contents of old media in a process of *remediation*” (p. 45, emphasis in original; cf. Bolter & Grusin, 1999). Indeed, the above list of corporate marketing tactics includes many that are familiar to consumers – videos of brain training products ‘in use’ at brain game websites are similar to TV commercials, for example. Thus, as new media recycle the old, it makes sense that the research methods that worked well in the past continue to do so. Yet what is also shown through this research is that text-based methods are appropriate for studying the *unique* features of new media as well. The sheer volume of information found online is remarkable; the Apple company website studied in Chapter Four, for example, gives meticulous descriptions of thousands of

health and fitness apps, including apps that are highly popular amongst the public. Text-based methods make a study of 240 of these products possible. We have also seen how marketing sites bring an assortment of (corporate) voices together, including those of industry experts. Studying documents like (for example) the Iwata Asks interview series yields insights that arguably could not be gleaned in any other way. It is difficult to imagine critical researchers gaining prolonged access to Nintendo's high-ranking officials by their own accord. And even if Iwata Asks ultimately delivers one-sided commentaries on the *Wii*, it is unlikely that a researcher's interview guide would engender any greater level of corporate reflexivity. As a third example, the manner in which weblinks lend intertextual support to corporate messages, usually by referencing service journalists, is a notable and novel finding revealed through the methods used this work as well.

Finally, there are theoretical contributions stemming from this research, the first of which pertains to the neologism 'Interactive Health Commodities'. In one sense, this term is simply descriptive, meant to capture the defining qualities of a technological genre. Yet it is also theoretical in the sense that its individual components signal different scholarly traditions and research findings. 'Interactive' refers to the way that post-Fordist technologies invite consumers to participate with hardware and software in the co-construction of (usually quantified) information about the self. 'Health', meanwhile, signals the notion of 'healthism': the idea that under conditions of neoliberalism, people are deemed responsible for their own selves regardless of the defining impacts of their surroundings. Lastly, the term 'Commodities' gestures towards the salience of the

marketplace in treating the body, and the (neoliberal) idea that taking ‘responsibility’ for health specifically involves consumption-based personal ‘investments’.

A second theoretical contribution lies in the case studies’ pairing together of otherwise disparate theoretical works. In Chapter Two, Latour’s perspectives on hybridity were assembled first with Foucault’s notion of governmentality, and second with Rabinow’s meditations on post-discipline, to deliver a thorough synopsis of the *Wii* and *Wii Fit* and their participation in relations of power. Latour’s work was also discussed in relation to the Marxist notion of ‘commodity fetishism’ to help conceptualize the political economy of these products. The chapter on brain training introduced some of Nikolas Rose’s key conceptions – ‘screen and intervene’, for example – to the sociological literature on the ‘third age’. Chapter Four saw the application of Haggerty and Ericson’s notion of the surveillant assemblage to the study of health and fitness apps, as well as the partnering of this framework with the notion of bio-pedagogies. Once again, these post-structuralist conceptions were set against key research from political economy, as the work of Andrejevic, Smythe, and Jhally and Livant was brought together in a discussion of consumerism as labour. Taken together, this assembling of divergent theoretical strands provides further evidence of the productive allegiances that can be formed between cultural studies and Foucauldian analytics. Though scholars like Hall and Rose carry Foucault’s research forward in slightly different ways – the former taking a cultural approach that sees discourses as meaningful in a semiotic sense, the latter showing interest mainly in formal apparatuses of control – I would argue that the incorporation of technologies of power like risk metrics into cultural goods demands that we use these overlapping perspectives as needed (see Bennett, 2003; Miller, 2009). It makes little

sense to retreat to theoretical havens when a productive unity-in-difference is within reach.

### **Future Directions**

If it is accepted that Interactive Health Commodities will inevitably have both material and ideological consequences, it follows that future research would do well to explore how they are taken up and understood by consumer audiences. Audience ethnographies are admittedly complicated and time-consuming, but when carried out they generally make for informative research contributions (see Millington & Wilson, 2010a). A first suggestion along these lines would be for empirical research that follows Roger Silverstone's (1994) conceptualizing of new technologies as media *qua* media and media *qua* text. The first construct – media *qua* media – refers to the ways that technologies are physical objects that structure social relations by their very presence. As James Lull (1990) discovered, television oftentimes reorganizes family living spaces and habits. TV affects how people sit in relation to each other in the home, for example, or when daily meals are scheduled. Ann Gray (1992) similarly found that the VCR shapes familial relations, though she was more concerned with its gendered power dynamics. Those interested in Interactive Health Commodities might thus explore patterns in how these products are used – where they are consumed, at what times, and by whom. For Silverstone, media *qua* text refers to the meanings contained in media and technologies, which of course are made to affect consumers as well. Given the time in which he wrote, he was occupied with media's textual and visual signs. Based on the findings of this research I would add a need to examine people's uses of the health and fitness procedures

found in new technologies as well – for instance, those for disciplining and monitoring the body. Such research might focus first on whether consumers are accepting of industry’s messages about (for example) the body or ageing, and whether they see value in taking part in ‘virtual’ forms of exercise. What we know from audience studies is that resistant and unpredictable forms of consumerism are always possible, if not always emergent (see Alasuutari, 1999; Millington & Wilson, 2010a). Though Interactive Health Commodities strive to reduce identity politics to risk politics, as described above, it is worth investigating how people’s personal histories and perceptions of self nonetheless shape their consumption habits. As Hacking (2002) says, just as categories and diagnoses ‘make up’ people from ‘above’ (i.e., through the machinations of experts and industry), so too does the construction of identity ‘press from below’ as people make use of the tools and designations they are given (p. 111).

To engage a diversity of media audiences, future research could also explore the range of institutional sites in which new technologies are found. As shown in Chapter Two, the *Wii* is increasingly popular among physical educators. Since researchers have expressed consternation over the ‘scientizing’ of school PE (Andrews, 2008; McDermott, 2007), one might investigate in particular the use of active video games for risk assessments in this setting (e.g., through BMI). There is evidence suggesting youth are quite discerning of video games in educational contexts (e.g., Beavis & Charles, 2005), though such research has yet to explore their engagements with fitness-based gaming consoles. The *Wii*, *Wii Fit*, and brain games have also been used in retirement communities in recent years. This creates opportunities to explore precisely how older persons engage with these products. For example, researchers might consider whether

technologies serve as, on the one hand, vehicles for combating the (ageist) assumption that later life is a time of physical and cognitive decline, or, on the other, whether new media interventions are perceived to intensify the pressure to grow older in aesthetically palatable ways. In the spirit of contextual cultural studies, each of these research programs would be especially effective were they to consider how personal and institutional experiences are inflected by the broader circumstances in which they are situated. For instance, research with older audiences might unearth whether neoliberalism's curtailing of public spending impacts retirement facilities' provision of health and fitness services. The findings of Chapter Four demonstrate a need as well to look beyond institutionalized media consumption. After all, health and fitness apps are made to transcend space, and research should in turn consider how consumers experience this. Since interactional apps in particular require reciprocal relations between people and technologies, it would be worth examining whether app users facilitate and/or resist such relationships. Perhaps they are willing, for example, to partake in self-surveillance, but are less apt to confess their exercise results publicly in the style of synoptic surveillance.

There would be value as well in further research into the relations of production that characterize the technologies described here. Dyer-Witheford and Sharman (2005) have unearthed key findings in relation to the immaterial labour of Canada's video game industry, as noted briefly in Chapter Two. In contrast to the mythologized narrative whereby small businesses rise swiftly to the industry's apex, the dozens of mid-sized Canadian game developers (who often supply multi-national distributors with software) are mired in a "churn-and-burn" industry marked by unrelenting competitiveness (p. 192). The stresses of this can trickle down to employees. The protracted, often

unremunerated toiling of these individuals runs in opposition to the assumption that video game production is a labour of love. Whether these trends change or persist over time is a matter for researchers to consider. Furthermore, scholars might also scrutinize the production model of smartphone apps, which has yet to be investigated in any sociological literature. As news media have reported, apps are oftentimes constructed by independent developers, then sold at ‘host’ sites (like Apple’s App Store) in a business model that divides profits between both interested parties (Apple, for example, receives 30 percent of profits, to the developer’s 70). As reported by the Globe and Mail newspaper, 2009 saw a “gold rush” in app production, whereby “tens of thousands of software developers rushed to build apps, spurred on by beguiling – and sometimes apocryphal – tales of entrepreneurs who had made fortunes on wildly popular offerings like iBeer, iFart and Shazam” (Lorinc et al., 2010). Scholars could make novel and highly important contributions by engaging with those formatting these new technologies – especially technologies of the health and fitness variety. Indeed, despite this dissertation’s findings on the nature of app software, the precise motivations and strategies underlying the construction of interactional, instructional, and informational apps remains largely unknown. Following Dyer-Witheford and Sharman’s (2005) findings, such research might also uncover the stresses dealt with by small- and large-scale production companies, as well as the people that make up their workforces. There is also a pressing need for more research into the manual labour conditions under which new technologies are made. Laird’s (2009) work goes some way in showing the inequalities suffused through material production, but the extent to which Interactive Health Commodities are still ‘fetishized’ at the marketplace without knowledge of their origins remains an issue.

Admittedly, this research is remarkably difficult to enact, given the barriers set up by industry against inspections of their production processes.

The contributions of this research are thus modest in comparison to the work left to be done. It is hoped, however, that the foregoing analyses can inform future studies, even if only in some small manner. This dissertation has taken seriously the arrival of Interactive Health Commodities – perhaps too much so, those invested in these technologies might say. But as Nigel Thrift (2003) contends, the playful objects of consumer culture are increasingly at the forefront of important technological innovations:

In the past, new technologies were born in the work place and ended up in toys. In the future, toys will be the trend-setters. The PC industry has taught people to tolerate flaky hardware, incompatible software, and lousy interfaces. If toys worked the ways computers do, kids would toss them in the trash the day after Christmas. Toys must be engaging, intuitive, indestructible. Toys need to survive being chewed on by pets, drooled on by baby sisters, and tripped over by parents. Long after Windows 95 fades out, toys and stories will survive (p. 389).

Evidently, ‘toys’ – or, at least, entertainment products – are now our trainers, dieticians, and physicians as well. If, at the time of Thrift’s writing, they were only tripped over by parents, they are now made to be picked and used by moms and dads, or to be given to grandparents to counteract the effects of growing older. I hope that in identifying these trends this dissertation is not taken as an indictment of pleasure. I recognize, as Kline et al. (2003) stress, that forms of play and amusement are vital to people’s overall wellbeing. Even Postman (1985) was not entirely dismissive of entertainment, for he recognized that it had a place apart from matters like politics and education. It was only whence these realms were conflated with ‘show business’ that we began to amuse ourselves to death. Furthermore, I have not claimed at any point in this research that the interventions brought on by new technologies are invalid or unreliable from a medico-scientific standpoint. I have no grounds for doing so.

What this dissertation has instead aimed to do is consider whether and the extent to which objects that appear on the surface as progressive and enabling might too be problematic and constraining. David Lyon (2006) calls our attention to the fact that power can be most consequential whence “docility is achieved in the name of freely chosen self-expression” (p. 6). He refers specifically to how entertainment media can surreptitiously but successfully engender surveillance, mainly in that they make watching and being watched components of the pursuit of pleasure (cf., Andrejevic, 2004). *Docility in the name of freely chosen self-expression*. If this is an observation that is counter-intuitive – or, at the very least, unannounced by industry, health authorities, governments, and popular media – it is one that is all the more important. Indeed, it might only be *counter-intuitive* to the extent that these others have not adequately raised its spectre. It is an observation, though, that nicely summarizes the key findings of this research, and the desire contained herein to ‘think otherwise’ about Interactive Health Commodities.

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