# 'Apparatuses; Matter; Materialities'

## 1st Annual Graduate Conference in Science and Technology Studies
## May 20-22, 2011; York University
## Toronto, Ontario, Canada

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How can we come to grips with the increasingly complex encounters between living beings, technical objects, and human subjectivity? What analytical tools and modes of thought are necessary to trace these emergent configurations and reconfigurations of the boundaries of life? What are the relations between the materials with which we think and the analyses we produce?

For many thinkers, notions of the "apparatus" have proven to be fruitful analytical tools for taking up these questions and posing others. Along with the familiar usage, denoting technological objects quite broadly, the concept has taken on a special significance in the work of several important writers, initially as a translation for the French 'dispositif.' As employed by Michel Foucault and Gilles Deleuze, this notion captures the common, technological sense of 'apparatus,' but also implies something further: indeed, it implies this very notion of 'capture.' In his essay, "What is an Apparatus?," Giorgio Agamben offers a broad working definition of this term, as "literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings" (2009, p.13). This category thereby encompasses not only Foucault's exemplary "prisons, mad houses, the panopticon, schools . . . and so forth," but also extends to include

> "the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones and - why not - language itself, which is perhaps the most ancient of apparatuses - one in which thousands and thousands of years ago a primate inadvertently let himself be captured, probably without realizing the consequences that he was about to face." (ibid., pp. 13-14)

Taking Agamben's formulation as a point of departure, this workshop collects papers exploring the links between conceptualizations of the apparatus, past and present, and apparatuses themselves, broadly conceived. Of particular interest are the enduring ties between science and the apparatus. It is in scientific work that we find the greatest proliferation of technical apparatuses today, where they serve to capture, store, integrate, model and manipulate the behaviours of a whole range of materials – living and otherwise – in increasingly sophisticated ways. Yet the apparatuses developed and deployed in laboratories and workshops are now circulating throughout our world. Hence any solid understanding of the notion demands an integrated theoretical perspective, and a greater cross-fertilization of approaches. We are especially interested in investigating how this concept generates new vectors for thinking across disciplinary divides, and new modes of critical and practical intervention.

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# Schedule

All conference events, where not otherwise noted, are to be held in
203 Norman Bethune College, 'Norman's Lounge.'

## Friday night, May 20 2011, 6-8pm:

Reception and registration, The Orange Snail, York University. **104 Stong College.**

*The Orange Snail is located in the lower level of Stong College, directly adjacent to the main conference location in Bethune College. Stong and Bethune are indicated on the attached campus map; signage will be posted at the main entrances of both colleges to direct you to the venue. Snacks and non-alcoholic beverages will be provided, alcoholic beverages are available for purchase.*

## Saturday morning, May 21 2011, 8:30-9:30 AM:

Meet-up and informal discussion w/ coffee and snacks. **203 Norman Bethune College.**

**9:15-9:30:** Introduction (Conference organizers; Kenton Kroker, graduate program director for STS)

### Panel 1. 9:30-10:45.

Benjamin Mitchell (Science and Technology Studies, York University), "Somewhere Between Light and Shadow: Alfred Russel Wallace, Spirit Photography and the Trial of Henry Slade"

Mitchell Akiyama (Communications, McGill University), "Capturing the Animal: Biological Sound Recording, Playback Experiments, and the Study of Non-Human Language"

Peter Hobbs (Environmental Studies, York University), "Crittercams: Animal Technologies of Infolding"

### Panel 2. 10:45am-12:00pm.

Meaghan Brierley (Communication Studies, University of Calgary), "Vying for visual voice: Transforming illustration practices in science and medicine"

Trevor Cunnington (Communication and Culture, York University/Ryerson University), "A short history of the lens: The Impact of Glass on the development of science and regimes of vision"

Julia Gruson-Wood (Science and Technology Studies, York University), "The Epidermis of Apparatus: Biotechnological Cuts"

**Lunch: 12:00-1:00 pm**

**Panel 3. 1:00-2:15.**

Petra Hroch (Sociology, University of Alberta), "The Agential Realist Apparatus and New Materialist Feminist Methodological 'Machinic Assemblages'"

Martha Kenney (University of California, Santa Cruz), "Re-Imagining Research Apparatuses" (collaborative presentation, part 1)

Ruth Mueller (University of Vienna), "Re-Imagining Research Apparatuses" (collaborative presentation, part 2)

**Panel 4. 2:15-3:30.**

Kelly Ladd (Science and Technology Studies, York University), "Robot Skin: Sensual Forms of Knowing and the Visual Apparatus"

Stella Palikarova (iSchool, University of Toronto), "Brain-Machine Interface Technologies and Social Power: Towards a Sociomedical Model of Disability"

Eric Bigras (Science and Technology Studies, Rensselaer Polytechnic Institute), "Playing with Asthma: Embodiment and Care Through Digital Practices"

**Coffee break. 3:30-3:45.**

**Panel 5. 3:45-5:00.**

Gabby Resch (Faculty of Information, University of Toronto), "Apparatus as Canvas: Semiotics of the Nuclear Blast Door"

Chad Andrews (Cultural Studies, Trent University), "Technocultural Hegemony: Military Fantasy and Technological Instrumentalism in 1980s American Discourse"

Ali McMillan (Science and Technology Studies, York University), "Cybernetics as Apparatus and Assemblage"

**Keynote lecture. 5:00-6:15pm: Dr. Jeffrey Bussolini** (City University of New York, College of Staten Island)

**Reception, 7:00-9:00pm:**
Desotos
1077 Saint Clair Avenue West, Toronto, ON

**Sunday, May 22**

**Panel 6.  10:00-10:45am.**

Miloš Vasić (Sociology, York University), "The Dispositifs of Automobile Transactions: Observations from Research in Progress"

Lee McGuigan (Media Studies, University of Western Ontario), "Modeling Consumers/Teaching Consumption: T-commerce as Information Feedback System and Socializing Tool"

**Panel 7. 10:45am-11:30pm.**

Brian Fuller (York University), "Situating the Apparatus"

Cameron Murray (Science and Technology Studies, York University), "Biomedical 'Parts Catalogues': Novel Metaphors as Apparatuses in Post-genomic Bioinformatics"

**Wrap-up session, 11:30pm-12:00**

**Reception information:**

Desotos, our reception venue, is located at 1077 Saint Clair Avenue West, near Dufferin Street. After the keynote address on Saturday afternoon, the organizers will assemble a group and we can all make our way down via public transit together.

If you are making your way to the venue on your own for any reason, however, you should take the subway to St. Clair West station, where you can transfer directly onto a westbound St. Clair streetcar. The closest streetcar stops to the venue are Northcliffe Boulevard and (if you should miss the Northcliffe stop) Dufferin Street.

# Abstracts

**Panel 1**

**Benjamin Mitchell** (Science and Technology Studies, York University), "Somewhere Between Light and Shadow: Alfred Russel Wallace, Spirit Photography and the Trial of Henry Slade"

The strategy of "myth busting" by focusing on the artifacts and practices that could, potentially, produce a set of contentious phenomena is neither new, nor, as I would like to suggest, ever truly conclusive. In London, at the end of the nineteenth century there were no phenomena more contentious than those of spiritualism and the occult, and their potential introduction into the British Association for the Advancement of Science was enough to challenge the epistemological framework of the naturalistic worldview fought for by professionals such as Thomas Henry Huxley and John Tyndall. More dramatically than this, it brought the black sheep of evolution, Alfred Russel Wallace, into court to defend the medium Henry Slade from the charges of his fellow scientist, the zoologist Edwin Ray Lankester. While the "deception" of slate writing was the occasion of the trial, the larger battle was fought over the definition of science itself. In particular it complicated the notion of what Lorraine Daston and Peter Gallison have termed "mechanical objectivity", and offered in its place a scientific understanding of the world that valued stability of characteristics over mechanical reproduction, observer interaction with phenomenon over passive observation and possessed a different understanding of the role of experts and amateurs in the production of knowledge. In looking at two attempts to produce a "crucial experiment" of the tenants of spiritualism we see that Lankester hoped, in the trial of Slade, to demonstrate the falsity of all spiritualist claims; while Wallace, acknowledging the kind of human weaknesses pointed to in the trial, instead looked to the evidence of spirit photographs.

**Mitchell Akiyama** (Communications, McGill University), "Capturing the Animal: Biological Sound Recording, Playback Experiments, and the Study of Non-Human Language"

Klaus Zuberbühler, a psychologist specializing in communication and cognition in primates, had come to the conclusion that monkeys possess language, albeit one that he was unable to understand. But, one day in Côte D'Ivoire's Taï Forest he was alerted to presence of a nearby predator—a leopard—thanks to the calls of a group of Diana monkeys. He realized that, for the first time, he understood what had once been unintelligible chatter. In a forest that is home to ten species of monkeys, Zuberbühler felt that he had become the "eleventh primate." Zuberbühler was only able to parse the subtle differences between monkey calls after years of recording the primates, playing these calls back to them, and then analyzing the results—a technique known as "playback." My paper addresses how Zuberbühler and other scientists that make use of playback deploy a technological apparatus to alter and extend their perception in order to gain insight into and, in some cases even come to understand, non-human communication. I argue that neither sound recording nor any other technological apparatus simply pulls away a veil to reveal pure, objective knowledge; sound recording in and of itself is not enough to make one become animal. Rather, this apparatus is a part of a constellation of forces—technological, social, and political. To paraphrase Foucault, an apparatus both conditions and is conditioned by the relations between these forces. The results of playback experiments present an important challenge to centuries of a Western humanist philosophy in which the dividing line between the animal and the human has often been drawn at language. The animal has no language because, as Derrida notes, it is assumed that it does

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not have the capacity to respond—or, at least, its response is said to be indistinguishable from mere reaction. Such distinctions work to establish "the animal" as a general category of radical alterity have been fundamental in establishing "the human" as a particularity; or, as Agamben might say, Western thought understands the human not as a positivity in its own right, but as the expulsion of the animal. While the playback apparatus has apparently helped to erode the line between humans and animals, it is also predicated on a long history of violence and control. Drawing on the work of Paul Virilio and Friedrich Kittler, I argue that the playback—a technique that uses recording devices to "capture" sound with "shotgun" microphones—owes its vocabulary and logic to the hunting practices of mid-nineteenth century colonialists as well as to the technological advances of the military industrial complex. Recording always establishes a power relation. But paradoxically, in the case of the playback, it both served to simultaneously amplify and destruct the differences between humans and animals.

**Peter Hobbs** (Environmental Studies, York University), "Crittercams: Animal Technologies of Infolding"

For zoologists, the crittercam provides a "breakthrough perspective," a view of life from the animal-object of study. In her essay, "Crittercams" (2008), Donna Haraway pursues the aspirations and assumptions embodied in this ontological leap to take up an animal's point of view (POV). What does it mean to see through the eyes of an emperor penguin, a tiger shark, or a humpback whale? What does the gesture of becoming animal fully entail? Does the crittercam apparatus live up to its promises of science through transgression? To supplement Haraway's analysis, my paper focuses on an episode of the National Geographic program *Wild Chronicles* in which a crittercam is deployed to record the nocturnal habits of a Washington housecat, Molly. The chubby calico's POV turns out to be captivating in a very fleshy sense, as her desires and underbelly become meshed with those of the viewer. Sutured to Molly's POV, we are dragged along as she sheds her gentle persona and becomes feral. What results is a mangled and diffracted perspective that I argue provides us with a glimpse of the posthuman. To distinguish the crittercam's diffracted perspective, I rehearse some of television's fascination with animals as made evident in such classic programs as *Mutual of Omaha's Wild Kingdom* (1963-1984), *The Undersea World of Jacques Cousteau* (1968-1975), *The Wonderful World of Disney* (1954-2008), and *The Beverly Hillbillies* (1962-1971). It is my contention that these programs constitute a televisual zoology or order of things that is radically different from the diffracted view of crittercam.

**Panel 2.**

**Meaghan Brierley** (Communication Studies, University of Calgary), "Vying for visual voice: Transforming illustration practices in science and medicine"

For the medical illustrator, the process of creating images at the service of medicine is complicated by diverse clients, changing medias, increasingly numerous scientific specialties dependent on visualization, and the history of medical illustration itself. Through the preliminary results of a sensory ethnography aimed at answering how working with pharmaceutical companies has changed what medical illustrators do and vice versa, this paper describes how practice theory understands visual culture as a subject of research.

Visual culture is a way of seeing the world reflected and shaped by daily material experience. Practice theory provides a lens on material objects as both produced and reproduced through human action. Through the examples of Svetlana Alpers' (1983) study of seventeenth-century Dutch

art and Ludwik Fleck's (1947) exploration of the thought collectives of physicists, communities are shown to see, experience and reproduce their world through routines, things, bodies and knowledges. The topic of study becomes the material world, the technologies and artifacts of a human group which are part of the manner in which they reproduce an environment. Artifacts are "any material production of skilled practice" (Suchman, Blomberg, Orr & Trigg, 1999, p. 405); therefore, all contexts of skilled study and their products (be they artifacts, images, inscriptions, things, tools, etc.) are contexts of practice research.

This paper will explore "medical illustration" as part of Giorgio Agamben's extended definition of apparatus: "the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones and – why not – language itself…" (Agamben, 2009, pp. 13-14). It considers medical illustration as produced and reproduced within a particular visual culture but also through the intersections of further complicating visual cultures of clients, changing medias, professional history, and a profusion of scientific visualization.

**Trevor Cunnington** (Communication and Culture, York University/Ryerson University), "A short history of the lens: The Impact of Glass on the development of science and regimes of vision"

"Emphasis had begun to shift from propulsion to guidance. Telemetry on the flight tests was still primitive. Thermometers and barometers were sealed in a watertight compartment with a movie camera. During flights the camera photographed the needles swinging on the gauges. After flight the film was recovered, and the data played back. Engineers sat around looking at movies of dials." – Thomas Pynchon

In this quote from his award winning novel *Gravity's Rainbow*, physicist and novelist Thomas Pynchon offers us a paradigm for thinking through the importance of film to the development of rocket science. An essential component, perhaps the most important component, of the film camera is a glass lens. A microscope, a telescope, opera glasses, a magnifying glass, a periscope, a monocle, cameras, the television screen, the monitor – these extensions of our sense of vision and these modes of data capture and reception have rendered the empire of the empirical near absolute. Glass is often recognized as an ambivalent substance; perched on the frontier between solid and the liquid – two of the three states of matter – its unique material characteristics and enabling properties, I would argue, have provided the most fertile ground for the growth of science's particular epistemology. Or is this but another clever illusion, a magic lantern projection from the present on the past? This paper will offer a brief historical account of science's affair with the material of glass to explore the epistemological implications of the ambivalent material of glass. Such scientific disciplines as cellular biology would have proved overwhelmingly unlikely, if not impossible, without glass as a mediating material between human perception and the external world. Furthermore, the combination of practice and technology has produced great change in science. Aerial photography – the camera lens enabling the capture of one apparition of reality extracted from "the flow of time" and the development of the airplane – precipitated the emergence of tectonic theory. Fault lines, invisible to us on the ground, suddenly became visible once photographs were taken of landscapes from the air. I will articulate in this paper the great extent to which glass and its optical uses has been a determining material factor in the epistemological development of science.

**Julia Gruson-Wood** (Science and Technology Studies, York University), "The Epidermis of Apparatus: Biotechnological Cuts"

In his article "Cut Flesh" James Elkins claims that the "history of medical illustration can be written as a negotiation between different styles of evasion" (1999, 149). From anatomical

portraiture to ultrasound imaging; from Body Worlds to laparoscopy; from PET scans to medical simulation, there exists a certain trope within western medical visualizations of the body that can be described as the desire to devise various strategies for not seeing the insides – that is, the mortal realism - of the body. Medical visualization technologies zoom in, dissect, disassemble and reassemble the body. Sometimes the insides are pictured with pointillist detail - but they are often displaced from referents of pain or death. For example, Giovanni Valverde's "Wounded-Man" (1560) features a muscular male who is standing while holding his skin with his teeth in order to reveal his intestines. Flash forward to Body Worlds, which curates the display of skinned corpse's showcased riding horses, playing baseball and dancing. Hence, even when viscera and death are explicitly portrayed, they are abstracted from the realisms of mortality - such as decomposition and pain – and reassigned images of vitality and animation. Consequently, visualizations of "cut flesh" are often cut off from significations of death.

Elkins incorporates a history of interpretations of flesh as that which has, in certain places, at certain times, been perceived as a fluid, sinewy substance that could not be separated from the "inside". Hence, "skin" acted as a proverbial boundary that created an inside that could be clearly demarcated from the outside. Accordingly, through examining medical visualization practices, biotechnology, and the move towards genomic and virtual embodiments, this paper queries the various ways in which the very concept of flesh has been deployed as an apparatus that curtains off the heady realism of the body which thus enacts a boundary between inside and outside. To address flesh as both a conceptual and material apparatus for concealing the chaotic and leaky possibilities of embodied life, I turn towards an investigation of organ transfers, the history of the HeLa cell, the Virtual Human Project, genomics, and the transhumanist movement. To work through these biotechnological texts, I utilize the works of critical disability theorists (Asch 2001; Michalko 2002), Hayles "semiotic square" (1999), Haraway's notion of "genetic fetishism" (1997), Hal Foster's contextualization of "kitsch" (2005), and Rose & Nova's concept of "biological citizenship" (2005). The prime questions motivating this paper are: what are the various layers that embody this contemporary biotechnological apparatus of flesh? And, what are the various biotechnological skins which work to reveal and conceal the vital processes that have been sutured shut inside our bodies?

**Panel 3.**

**Petra Hroch** (Sociology, University of Alberta), "The Agential Realist Apparatus and New Materialist Feminist Methodological 'Machinic Assemblages'"

This paper focuses on the work of agential realist physicist-philosopher Karen Barad – specifically, on the importance of the "apparatus" in her account of the entanglement of matter and meaning. For Barad, an interdisciplinary scholar situated between physical science and posthumanist feminist philosophy, apparatuses are "boundary-making practices" (148). Following the work of Niels Bohr, she calls apparatuses the "the material conditions of possibility and impossibility of mattering" – by which she means "matter" in both senses of the word – to be "material" and to be "meaningful" (Bohr in Barad 148). My paper explores the emphasis on the "apparatus" in Barad's work in relation to other contemporary new materialist feminist theorists (Rosi Braidotti and Jane Bennett) who share a concern with matter and materiality, re-making the boundary between concepts such as "subjectivity" and "objectivity," and developing sophisticated apparatuses, or what I will describe as methodological "machinic-assemblages" (Deleuze and Guattari *A Thousand*

*Plateaus*) that better equip us to approach contemporary issues with the complexity of an interdisciplinary perspective.

**Ruth Mueller** (University of Vienna), "Re-Imagining Research Apparatuses" (collaborative presentation, part 1)

Ruth Mueller's dissertation research focuses on the lives and careers of postdoctoral fellows in the life sciences in Austria. In this paper, Ruth explores how current career rationales in the academic life sciences, which emphasise mobility, short-term employment and competition influence how young scientists engage with the concrete local collective contexts of their work, such as research teams. Building on interviews conducted in the framework of a larger research project called "Living Changes in the Life Sciences," she argues that we are currently witnessing a trend towards an institutionalization of highly fragile and exploitative social relations in such academic settings, which encourage a "devil-may-care" mentality towards colleagues, groups and institutions. Young scientists increasingly feel that individualism and tieless-ness are necessary for making an academic career in the life sciences, which has substantial consequences for both their personal and epistemic choices. Ruth asks how we might begin to make micro-shifts towards a system that would be more livable for scientists, while at the same time cultivating a kind of research contributes to building a more livable world.

**Martha Kenney** (University of California, Santa Cruz), "Re-Imagining Research Apparatuses" (collaborative presentation, part 2)

Martha Kenney considers how the "reflexive peer-to-peer interviews" conducted by Ruth Mueller and her colleagues are already participating in creating spaces that allow for micro-shifts in the system. Instead of understanding these interviews as simply an information-gathering exercise, she argues that we might also think of this innovative interview technique as a kind of STS apparatus that has the potential to materialize different ways of living in the academy, for both the life scientists (interviewees) and STS scholars (interviewers). By characterizing interviews as a dynamic interpersonal practices, Martha shows how they can be an important sites where the concerns of struggling scientists are brought into relation with the commitments of STS scholars. Bringing out the relational quality of Ruth's interviews allows us to open broader questions about how STS scholars can contribute to changing the conditions of scientific knowledge production, not only through policy recommendations but through a careful attention to our own mundane but consequential research practices.

**Panel 4.**

**Kelly Ladd** (Science and Technology Studies, York University), "Robot Skin: Sensual Forms of Knowing and the Visual Apparatus"

Concerned with ways of knowing, apprehending and representing the world through tactile modes of knowledge-making and data representation, this paper examines the multiple, embodied objectivities that emerge with (and around) apparatuses designed to haptically know the world, in particular robot 'skins'. Performing the double duty of recreating how we feel the world and how the body feels to the touch, robotic skins are designed to sense the world in ways that exceed our own 'feeling' abilities while simultaneously recreating the 'feel' of the human body. Existing as uncanny points of contact between humans, machines and the world, robotic skins are currently being

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designed to increase the feasibility of human-machine interaction: robot skins must convey detailed sense data so that machines can regulate the amount of force needed to hold and manipulate different objects. As a result, from synthetic silicon skins to nanowire matrix e-skins, robot skins are simultaneously barriers to and bridges between humans and machines.

I seek to examine the complicated assemblage of representation techniques, data collection, haptic interaction and 'feelings' that make up this liminal technology. To better understand this fleshy borderspace, this project examines the languages and images robotic-skin researchers use to describe both the skin itself and their own interactions with it. This will lead to new articulations of embodied forms knowledge engendered by interactions with machines that are, in many ways, rearticulations of the human body.

**Stella Palikarova** (iSchool, University of Toronto), "Brain-Machine Interface Technologies and Social Power: Towards a Sociomedical Model of Disability"

Giorgio Agamben, writing on Foucault's concept of the dispositif/apparatus, expands the concept, stating that the "apparatus [is] literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviours, opinions, or discourses of living beings"—from institutional forms of power to technologies such as writing, computers or even language itself. In my paper, I will be considering current debates around a particularly radical, invasive form of apparatus: the brain-machine interface (BMI), a technology that establishes a direct neural link between the central nervous system and an external device. BMI technologies like bionic limbs, thought-to-text devices and cochlear implants promise to improve the quality of life of people with disabilities, because of their inherent disintermediary utility; yet because they threaten to efface disability culture and identity, they are viewed sceptically within Disability Studies, which rejects the medical model of disability (which treats disability as strictly a medical condition) in favour of a social model that emphasizes the social constructedness of the category of "disability."

Such scepticism is understandable and valuable, since the use of BMIs at once involves the regulation (in Agamben's terms, the "orient[ing]" and "control") of the body of a person with a disability, and yet also promises such a person access to otherwise unavailable forms of social power and agency. In arguing for the importance of BMI technologies, I will present a new "sociomedical" model of disability that reconciles the diametrically opposed medical and social models. While it is essential that society support people with disabilities—through structural/environmental accessibility, economic support and awareness-raising—this does not address the physiological impairments restricting individual power and agency. These can only be adequately addressed by such technologies as BMIs; however, BMIs cannot be constructively used without sensitivity to the social model. The sociomedical model that I propose will facilitate the creation of ethical policies for the implementation and availability of BMI technologies, by fostering an interdisciplinary view of disability while advocating invasive technologies.

**Eric Bigras** (Science and Technology Studies, Rensselaer Polytechnic Institute), "Playing with Asthma: Embodiment and Care Through Digital Practices"

Asthma education and prevention usually targets asthmatics and their caregivers, failing to extend the community of people concerned about and enrolled in efforts to respond to the current asthma epidemic. Further, much asthma education is restricted in content, primarily encouraging adherence to pharmaceutical modes of care. This paper explores possibilities for more expansive forms of asthma education, directed at non-asthmatics, and including attention to air quality, stress

and other asthma triggers for which pharmaceuticals offer little remedy. Such possibilities would creatively leverage digital media, drawing on the techniques and aesthetics of computer game design, and on insights from STS and social theory. By joining five video game design concepts with five STS theoretical insights, this paper attempts to understand 1) how a digital STS can be deployed to advance understanding of asthmatic experiences by non-asthmatics, and 2) how non-pharmaceutical methods of care for asthma can be effectively communicated to a wide audience. The paper illustrates how experiences of and care for asthma can be diversified through an apparatus of digital practices of play, inflected by insight from STS.

**Panel 5.**

**Gabby Resch** (Faculty of Information, University of Toronto), "Apparatus as Canvas: Semiotics of the Nuclear Blast Door"

As a canvas for the birth and transmission of savage metaphors and apocalyptic visions, the blast door of Cold War-era nuclear sites can be imagined as a Lascaux for a 20th century techno-dystopia. Will humans, centuries on, stumble into the now-rusted and abandoned bunkers and, standing paralysed in front of the bold murals adorning the foreboding and austere blast doors, be able to reconstruct the sort of god simulation that tipped our world toward Armageddon, or be able to envision the cold, rational operators that clocked in to ceaselessly monotonous days when boredom was punctuated intermittently with vibrant art and off-colour humour?

With Agamben's idea of an object with the "capacity to capture (the)... discourses of living beings" as a referent, this paper will treat blast doors as unique apparatuses, exploring the semiotics around blast door paintings, the agency of control room operators, and the sorts of pervasive and meaning-laden biological metaphors that colour our understanding of command and control sites (e.g. missile silo as a pregnant container; missile as phallus; blast door as tattooed epidermis). Blast door paintings, I contend, are more than mere spatial and temporal markers. Future operators become the subject and muse in a complex interplay between space, process, power, and the technology of war. I am interested in how these semiotic representations continue to appear in both popular culture (specifically film and photoblogs) and academic writing.

Turning beyond Cold War nuclear sites, this paper will draw inferences about emerging control environments in warfare – specifically, drone operation facilities and contemporary surveillance control rooms – fundamentally seeking to disentangle the various points at which operators transition from being passive watchers to active intervenors. In doing this, parallels will be drawn between blast door art and other kinds of military art, from cockpit decoration to tattooing. The transmission of blast door images into retrospective cultural signifiers will thus be treated as an opportunity to explore the fraught relationship between apparatuses (such as these) and the culture of command and control that influenced and motivated the architecture, spatial dynamics, and actor interaction in these rich environments. As a site of capture and recognition, but also a now-unsealed aperture into a foreign world, the blast door canvas as apparatus – if it can be thought of as such, and I will make a case that it can – enables the interpretation of a perilously unique human experience.

**Chad Andrews** (Cultural Studies, Trent University), "Technocultural Hegemony: Military Fantasy and Technological Instrumentalism in 1980s American Discourse"

In the 1980s a group of American science fiction authors became enormously influential in the political sphere. Acting as leading members of the Citizens' Advisory Council on National Space

Policy, these authors (Jerry Pournelle, Larry Niven, Poul Anderson, Greg Bear, Gregory Benford, Dean Ing, Steven Barnes, and Jim Baen) conceptualized the Strategic Defense Initiative (SDI) for Ronald Reagan, advised his administration on foreign policy matters, and promoted the militarization of space as a means to end Cold War détente.

While this paper recognizes their direct and active engagement with the politics of the time, its primary focus is instead on the fiction--broadly termed 'military science fiction'--they produced during the decade. I argue that a number of widely read texts written by the Advisory Council authors contributed to a kind of consensus culture during the 1980s, a hegemonic discourse that in turn founded itself on a particular conception of technology. The central tenet of these texts (and of the general discursive trajectory they participated in) is that technology is subservient to other spheres of human interest and involvement--that we in other words have a firm grasp on technology. Like any tool, it serves us when necessary, and is ultimately guided by the traditions and values established in the cultural and political spheres.

In *Transforming Technology*, Andrew Feenberg calls this conception an 'instrumental' view of technology. It stands in clear opposition to Agamben's theory of 'apparatus': technology does not determine, model, or control us; rather, its contours and uses are determined, modelled, and controlled by the human beings who deploy it. My argument here is that the 1980s can serve as a case study for how cultural discourse (in this case, military fantasy) can popularize and substantiate this kind of view, and how in the 1980s this popularization provided a foundation for the politics and policies that have come to define the picture of American political might and technological superiority so common today.

**Ali McMillan** (Science and Technology Studies, York University), "Cybernetics as Apparatus and Assemblage"

This paper considers two broad lines along which the research programme of cybernetics has been evaluated and appropriated: on the one hand, as apparatus, indeed as an 'apparatus of capture' *par excellence;* and on the other, as assemblage, or as a more heterogeneous and dynamic discipline. Within science and technology studies, we find the first conception reflected in the work of Peter Galison and Paul Edwards, for whom the 'cyborg vision' of Norbert Weiner and his contemporaries constituted a strongly hierarchical, control- and management-oriented discourse. The second, by contrast, is best represented by the historiography of Ronald Kline, or more famously in the 'ironic political myth' of the cyborg proposed by Donna Haraway (1991, p.149). The emphasis in these authors' interpretations is on diversity within the field, which in turn implies that cybernetics is less a monolithic apparatus of control and more a loose coalition of scientific practitioners with varying ideas about their work and its social implications. For such authors as Galison and Edwards, cybernetics is profoundly *disciplinary* science; in Haraway's case, the cyborg is more a figure of affirmation and counterhegemonic potentiality than of social control. While weighing the validity and usefulness of each position, this paper explores how differing concepts of the apparatus (*dispositif/appareil*) and the assemblage (*agencement*) from Foucault and Deleuze may shed light on this difference of historical opinion.

**Panel 6.**

**Miloš Vasić** (Sociology, York University), "The Dispositifs of Automobile Transactions: Observations from Research in Progress"

Cars are among the most pervasive of modern apparatuses, for which reason they have featured prominently in economic-sociological debates on dispositifs and devices: take, for instance, the longstanding antinomy between ANT's Michel Callon and 'virtualist' Daniel Miller, which has at times been waged around meanings of the automobile, specifically whether car purchases result in the dis- or embedding of economic action. My own dissertational research on automobile transactions, an interview project currently in the data collection stage, springs from that tension: it broadly attempts to posit a triangular relationship consisting of the purchaser, seller and vehicle itself. Another way of putting it, I aim to interrogate the agencement of the car – its capacity, that is, to orient economic action – in the context of the buyer-seller nexus. Towards this conceptual end, I ask two research questions: what are the experiences and perceptions of the purchaser as (s-) he 'journeys' through the transactional process; and how do those experiences vary between new and used car acquisitions? In the interviews conducted thus far, two themes, both tentative and contestable, are beginning emerge. Firstly, the ever-increasing complexity in choice of automobiles – with respect to alternative and competing models, trim levels and packages – is integral to the constitution of automobile markets: this complexity effects 'price-taking' on the part of purchasers, justifying to some extent her or his limited ability to haggle over price. The transaction secondly exerts micro-physical effects on the purchaser: the transaction in fact represents a power relationship in the Foucauldian sense, wherein the purchaser ends up internalizing the relational dynamics of the transaction.

**Lee McGuigan** (Media Studies, University of Western Ontario), "Modeling Consumers/Teaching Consumption: T-commerce as Information Feedback System and Socializing Tool"

Summarizing the communication thought of Dallas Smythe, Robert Babe writes, "Rapid technological change in communications…is part and parcel of the growing hegemony of a worldwide infotech business…Technological changes in computer communications keep consumers for ever on the treadmill of continual purchases and dissatisfactions" (Babe 2000: 138). Smythe regarded both consumer goods and technological devices as "teaching machines": educational instruments that "appeal to and cultivate possessiveness in users" (Smythe 1981: 223). In the new media environment of interactivity, technologies take on a dual character: in addition to teaching, they also learn. In the context of interactive television commerce, technologies and applications teach the "theory and practice of consumership" (Smythe 1977: 20), but they also are embedded with feedback mechanisms that track consumer practices. Information systems capture intimate data about individuals in an effort to model their purchasing behaviour and more effectively market products. The responsiveness inherent in the two-way communication capacity of interactive technologies appears to undermine Smythe's theory of consumer socialization in two ways: first, it levels the power hierarchies intrinsic to a one-to-many communication model; second, it introduces flexibility into rigid marketplace institutions, ostensibly increasing their capacity to serve consumers. This marketplace and communication revolution is, however, more apparent than actual. With private property relations effectively unchanged, t-commerce technologies actually extend the power of worldwide infotech businesses, and further entrench the hegemony of high-tech consumer capitalism. These underlying dynamics are, in fact, consistent with Smythe's assessment of technologies in capitalism.

Sut Jhally and Bill Livant (1986) suggest that commercial television is less significant for what it puts into homes than for what it takes out. They were referring to surplus value extracted from audiences, whom they equated with labourers performing the "work of watching." Today, media organizations extract not only surplus value, but also raw materials in the form of various data on consumers—including demographic information, media consumption habits, and even product-

purchasing behaviours. Simply put, they take out the product of a viewer's labour, as well as a profile of that viewer (whom I call a viewing-consumer—a viewer with the capacity to purchase consumer goods and services using a television remote), which is itself a commodity product. T-commerce is typified by a dialectical process in which technologies model consumer behaviours and cater a virtual marketplace to determine (i.e., enable/constrain) the activities of viewing-consumers toward desirable outcomes. T-commerce technologies model consumers and teach consumption.

**Panel 7.**

**Brian Fuller** (York University), "Situating the Apparatus"

In his article, 'What is an Apparatus?', Agamben postulates a potential Hegelian origin to Foucault's concept of the dispositif, as mediated through Hyppolite's interpretation. As Hyppolite observes, for the early Hegel, the concept of positivity represents the 'historical element', in terms of the set of instituted norms and rules which come to structure the concrete individual in a particular place and time. Given the opposition character of their respective work, the association of this central concept of Foucault's work with Hegelian positivity, regardless of its actual historical accuracy, is provocative. In this paper, I will explore the connection in more detail, and attempt to better understand Foucault's central notion through it. In Hegel's early theological writings, the concept of positivity is used to denote an historical form of religion in which dogma is laid down on the basis of authority, rather than through rationality. Hegel also uses the concept to delineate an similar opposition between positive right and natural right. This gives us a concept of the positive is situated between the 'natural' and the (Hegelian) 'rational', which I argue is precisely Foucault's realm. The concept of the apparatus as a 'heterogeneous set' of discourses, forms, laws, knowledge statements, etc., appears to admit, as Agamben points out, almost anything. However, the comparison with positivity can better illuminate the parameters of the concept. Through a reference to positivity, the concept of apparatus avoids the dialectical concerns that were more apparent in Hegel's later works, and that would characterize Marxist interpretations; Foucault's philosophical social theory appropriates the concept of the positive and attempts to situate it both historically (again, in a non-Hegelian sense) and ontologically.

**Cameron Murray** (Science and Technology Studies, York University), Biomedical 'Parts Catalogues': Novel Metaphors as Apparatuses in Post-genomic Bioinformatics

In "What is An Apparatus," Giorgio Agamben argues that, by borrowing the term *positivity*, which would later become *apparatus* (*dispositif*), Foucault takes a position with respect to a decisive problem in philosophy: "the relation between individuals as living beings and the historical element" (2009: 6). Agamben goes on to define 'the historical element' as "the set of institutions, of processes of subjectification, and of rules in which power relations become concrete" (2009: 6). In this definition, Agamben points to the importance of tracing specific apparatuses as they are developed, used and manipulated by individuals, groups and institutions working within specific historical moments. With these points in mind, my paper will attempt to describe how novel metaphors operate as apparatuses in the post-genomic era.

The use of novel metaphors has long been recognized as an indispensable component of technoscientific labour (Knudson 2005; Haraway 1991). Metaphors not only help researchers describe complex processes, they also shape social, political and economic understandings of emerging scientific techniques and technologies. In post-genomic biomedicine and bioinformatics, for instance, the metaphor of the 'parts catalogue' is increasingly being used to describe the

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integrated databases, models, and platforms researchers use to store, organize, visualize, and manipulate large quantities of genomic data. Parts catalogues are best described as documents that contain information about available spare and/or replacement parts for a range of commercial products, such as automobiles, musical instruments, household appliances, children's toys, furniture, computers, and countless others. Following the work of Lesley Sharp (2000, 2007), I am interested in questioning how the metaphor of the 'parts catalogue' challenges understandings of the boundaries and integrity of human bodies, and their component parts, and, as a result, how it might generate new, and complicate old, processes of subjectification. Ultimately, this preliminary investigation will explore how, as an apparatus, the metaphor of the 'parts catalogue' might serve as a mirror of the (post-)genomic era, recording, driving, and regulating, the desires, habits, techniques, and technologies of twenty-first century bioinformaticians.

# Directions and other information

**Directions to York University from Pearson International Airport:**

You can take a taxi directly from the airport to the York University Keele Campus. However, a taxi from the airport to the University is approximately $50 Canadian. Simply tell the driver that you are going to the York University Keele Campus. For directions to the conference location itself, see below.

An alternative option to get from Pearson airport to the York University Keele Campus is public transit:

- You can take the 58 Malton bus which serves from Terminal 3 (Arrivals Level) and Terminal 1 (Ground level) at Pearson Airport. This bus operates from approximately 5:00 AM until 1:00 AM.
- Take the 58 Malton bus (an approximate 60 minute one-way travel time) from Pearson Airport to Lawerence West Station.
- Once you have arrived at Lawerence Ave. West Station take the subway Northbound to Downsview Station.
- You can take either the 106 or 196 buses from Downsview Station, which will take you directly to the York University Keele Campus. The 196 is preferable. You can transfer from the bus to the subway, and back to the bus, without paying any additional fare.

**Directions to York University from Toronto Island Airport:**

If you are flying Porter Airlines your best option is to take public transit from the Toronto Island Airport. Taking a taxi from downtown Toronto to the hotel is not recommended, as it would be a very lengthy and expensive trip. From the airport:

- Catch the Porter shuttle, which will drop you off at the north-east corner of Front Street and York Street.
- Cross to the south side of Front Street and enter Union subway station.
- Take the University-Spadina line subway northbound to Downsview subway station.
- From Downsview you can take either the 106 or the 196 (Express) buses to York University.

### Directions to York University via public transit from all locations

York University is not located on the TTC subway line, but is readily accessible by public transit. Simply get on the Yonge-University subway line northbound (the TTC's yellow line) from any station.

If arriving at Union Station, you can access the subway directly and take the train northbound to Downsview station (both directions run northbound at Union, as it is the southernmost station on the line). If you are arriving at the Toronto Coach Terminal at Bay and Dundas Streets, simply walk a few blocks west to University Avenue, where you can catch the subway at St. Patrick station, and ride it northbound to Downsview station. From Downsview station, you can catch the 196 A or B buses (recommended) or the 106 bus – both will drop you off at York University Commons. If you are on the east branch of the Yonge-University line, you can also catch the 196B bus at Sheppard-Yonge station, and this will take you directly to York University Commons via Downsview. All stops are announced, and at both Downsview and Sheppard stations you can transfer from the subway to the bus and vice versa without paying any additional fare or showing a transfer.

A regular fare on the TTC is $3.00. Bus operators do not provide change. You can also purchase tokens, which translate to a fare of $2.50, or daily/multi-day passes. Tokens are available in quantities of 4 or 8 from vending machines in most subway stations (using $10/$20 bills, respectively), or they may be purchased in quantities of 5 or 10 from convenience stores (e.g. the store in York Lanes Shopping Centre on campus) or from collectors in TTC stations.

### Getting downtown from York University:

Just reverse the process! From York University Commons (the central loop where all buses arrive at York), you can take either the 106 (local) or the 196 A or B (express) buses to Downsview subway station. The 196B also services Yonge-Sheppard station. From there, you can take the southbound subway all the way into the centre of the city, transferring if necessary to the green line for east-west travel along Bloor Street.
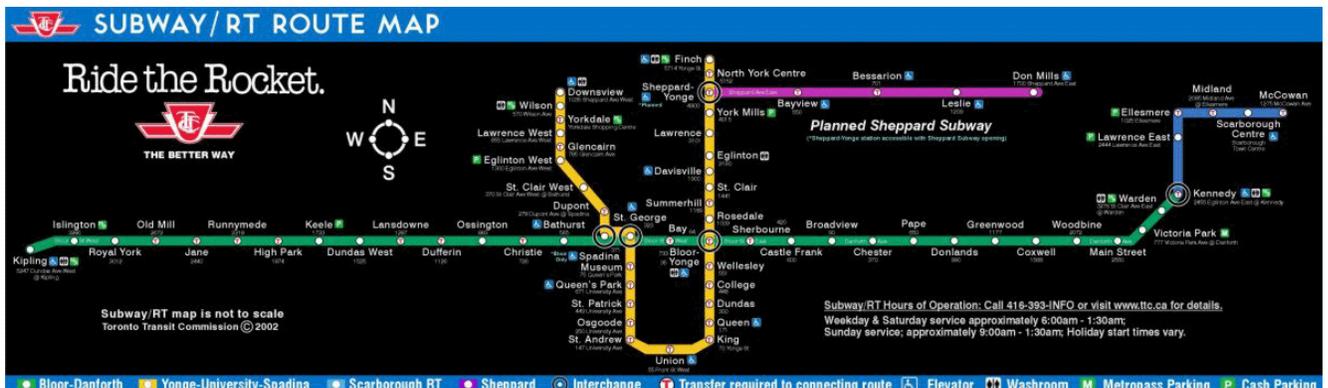
**Directions for those going directly by taxi to the conference location (Bethune College):**

Tell the driver that you are going to Bethune College at York University Keele Campus. The driver may not know the best way to drop you off directly at the college, as there is no access to the building's main entrance from the road. Advise them to enter the campus via Shoreham Dr. – the entrance from Steeles Avenue, the Northwest Gate, is presently closed due to construction.

From Shoreham Drive, they should turn left onto Ian McDonald Boulevard once on campus, and then in the first roundabout, take the first exit right onto Thompson Rd. Follow Thompson Rd. to its end, past the Tait McKenzie building and parking lot. There is a turnaround with a few parking spaces at the end of Thompson Rd – this is the back of Norman Bethune College; you can enter the building right there.

From where you enter the building, Rm 203 (Norman's) will be on your left. Note that it is not advisable to take a taxi from the city centre to the York University campus, as this will be a long and costly ride.

**Walking to Bethune College from the Executive Learning Centre or York University Commons:**

**Workshop Location:**
Bethune College
170 Campus Walk
York University, 4700 Keele Street
Toronto, Ontario, M3J 1P3



**ELC:**
Schulich Executive Learning Centre
Schulich School of Business
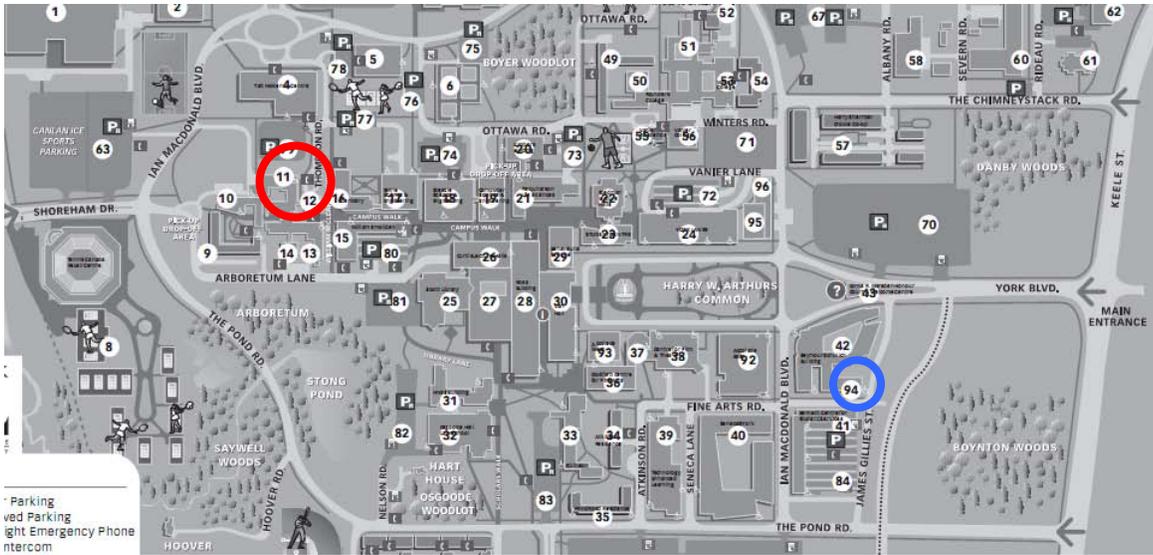York University, 4700 Keele Street
Toronto, Ontario, M3J 1P3

phone: 416.650.8300
fax:     416.650.8333
email:  reservations@schulich.yorku.ca
website: www.elc.schulich.yorku.ca

- **If departing from ELC:** Walk west on Fine Arts Rd.

  - Take a right on Ian MacDonald Blvd.

  - Continue North on Ian MacDonald Blvd. until you reach the commons.

  - Take a left onto the commons, toward York Lanes and Vari Hall

  - **If walking from ELC, or if arriving by bus at York University Commons:** Cut through one of the doors to your right once past York Lanes, and proceed left down Campus Walk to Bethune College.

## Other information:

A large computer lab, with printing facilities, is located at the William Small Centre, just east of Bethune College. It is only a few steps away if you turn left out the main entrance of Bethune, or along your route if you are walking to Bethune from most other locations on campus.

Bethune College and the majority of York University's campus are also covered by the AirYork wireless network. A number of guest passes have been arranged for your use; please contact a conference organizer once you have arrived if you would like to use one of these user IDs to sign on to AirYork.

**Recommended places to eat and drink on campus:**

Your meals are covered during the workshop. However, if you have arrived on campus early, are staying after the workshop, or you would like another option for breakfast or a late night snack, here are a few on-campus options.


### Falafel Hut Village

Great middle eastern dishes, their renowned falafel and many vegetarian options. Check with your server for halal options. Located in York Lanes Retail Centre.


### The Great Canadian Bagel

Coffee, bagels, bagel sandwiches. Located in York Lanes Retail Centre.


### Indian Flavour

Authentic foods ranging from veggie samosas, biryani to tandoori and other halal meats. No preservatives or MSG. EAT Smart Certified; Vegetarian and Halal Options. Located in York Lanes Retail Centre.


### Absinthe Pub & Coffee Shop

Relaxed atmosphere offering snack foods, fresh pastries, all-day breakfasts, teas, coffees, bagels to wraps, chili, soups and daily specials. LLBO Licensed, with a variety of draft beer. Located Courtyard level of Winters College.


### Orange Snail Pub

Specializes in Caribbean and North American cuisine. Daily buffet lunches with choice of meat, poultry or fish, vegetables and salad bar. All selections baked, steamed or roasted. 100% whole wheat or grain breads. Vegan Options; LLBO Licensed. Located in the lower level of Stong College – just across the walkway from Bethune. (Also accessible via lower level of Bethune College.)


The best places to get coffee are **Cafe Supreme** and **The Second Cup**, both located in York Lanes.

A range of fast food options, and the **Underground** restaurant, are also available in the York Student Centre (adjacent to York Lanes and the bus loop). Finally, the cafeteria in the lower level of Bethune College offers breakfast in the mornings, along with meals, snacks, and beverages throughout the day.