<http://www.diva-portal.org>

Postprint

This is the accepted version of a paper published in *Space and Culture*. This paper has been peer-reviewed but does not include the final publisher proof-corrections or journal pagination.

Citation for the original published paper (version of record):

Linnell, M. (2019)

The Haptic Space of Disaster

Space and Culture

<https://doi.org/10.1177/1206331219840292>

Access to the published version may require subscription.

N.B. When citing this work, cite the original published paper.

Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:miun:diva-35981>

The Haptic Space of Disaster

Mikael Linnell

Introduction

Anticipation is a means to imagine actions that can only be tested once the future really happens (Poli, 2017, p. 265). At times, however, specific futures must be “played out” in advance in order to grasp the likely consequences of those particular albeit uncertain future events. In other words, knowledge of the future is made possible through anticipatory techniques, like exercises, games and simulations (Anderson, 2010a). In this paper, I explore disaster preparedness simulations as a form of edutainment, based on sensory experience.¹ More precisely, I ask how learning disaster preparedness occurs through immersive engagement with the surrounding environment. Hence, the overarching aim of the paper is to contribute to discussions on the spatialisation of future events and, in particular, enactment as the primary contemporary response to uncertain futures (Aradau & van Munster, 2012a, 2012b; Collier, 2008).

Realistically simulated disasters is an emerging feature in contemporary public preparedness exercises. The purpose of such simulations is to foster public vigilance and initiative by way of immersive experiences of future disasters.² Upon entering a disaster simulation centre, you may be expected to subject yourself to a “strong wind experience”, a “smoke escape experience”, a “fire extinguishing experience”, or an “earthquake experience”. The Disaster Reduction and Human Renovation Institution in Kobe, Japan, provides a particularly immersive learning experience that realistically reproduces a destroyed neighborhood in the aftermath of a quake. In connection with the simulation, you find an interesting urge: “Make sure you examine all the detailed replicas” in the post-disaster environment.³ Visitors are thus invited to closely engage with the physical aspects of the simulation; to active exploration rather than distant and disembodied viewing. This new mode of experiential learning calls for new analytical concepts that take into account the dynamic relationship between the materiality of experience and the experiencing subject. This relationship has received some attention in fields like visual- and cultural studies, museology, human geography, and sociology, albeit in other empirical contexts.

Therefore, in this paper I propose an analytical vocabulary derived from recent interjections from the above fields. In particular, I draw on the works of Bruno (2014), Fisher (2012) and Marks (2015) in order to make use of, and extend, the notions of “haptic sense” and “haptic space” as elaborated by them. The motive for focusing on these three scholars is their mutually consistent interest in a haptic aesthetics that goes beyond the conventional understanding of the concept as referring primarily to technologically mediated touch. In this paper, haptic spaces (on the one hand) are considered as spatial arrangements, which facilitate that objects or environments emit certain atmospheres in order to evoke particular feelings. It is a question of making atmospheres through intentional work (Böhme, 2017, p. 20). To sense in a haptic manner (on the other hand) means paying attention to the internal experience of movement, balance, and bodily position. Moreover, it means extending contiguity beyond the boundary of the skin (Fisher, 2003, Paterson, 2009) which may implicate metaphorically touching surfaces with the eyes (Marks, 2015). Thereby, the notions of haptic sense and space as discussed in this paper contrasts with the conventional understanding of haptics as referring to computer aided technologies for the mediation and reproduction of touch and force feedback (Paterson, 2007). Accordingly, following Garrington (2010), I separate the two interpretations by talking of haptic spaces rather than (computer-based) haptics, with “s” appended. By introducing the notions of haptic sense and space in the field of disaster simulation, I hope to deepen the understanding of how to make sense of synthetic environments⁴ and how we rehearse future behaviors by way of affective and embodied experiences. Anderson and Adey (2011) and Anderson (2014) have previously discussed simulated emergencies as exercises in terms of affective atmospheres. Exercises, Anderson states, involve “making the future affectively present in a way that enables future response to be rehearsed and disruptive events of multiple types to be prepared for” (Anderson, 2014, p. 154). Atmospheres, then, characterize the feeling of the exercise as a particular type of event. The atmosphere may thus be understood as an affective quality that, for a limited time, envelopes participants in an “as if” world (Anderson, 2014).⁵

In the Disaster Education and Training Centre of Bursa, Turkey, this “as if” world is created by way of a full-scale reproduction of an earthquake-stricken street, strewn with crumbled construction materials and animated by sound, light, and imagery. Making sense of this

environment in terms of haptic sense and space, I suggest, may help us to think through questions concerning the role of affect in experiential learning. How can we describe the materiality of experience within the simulation? How does the future situation “feel” in terms of haptic sense and space? How, in sum, does the simulated environment act upon us, and how do we, as participants, act within the simulated environment? Exploring these questions may contribute to resolving some ambiguities associated with the notion of atmosphere in this context. Because, although atmosphere may well be a highly useful concept for thinking about the relation between the production and reception of affective spaces, it tends to emphasize the quasi-objective dimension of staging atmospheres, thus downplaying attention to how we sense affective spaces (Anderson, 2009, 2014; Böhme, 2017). Taking the notions of haptic sense and space into account, we may expand the analysis to include the full scope of sensory experience while maintaining interest in the material dimension of the simulated environment (Garrington, 2013).

In order to fulfill the aim of this paper, and introduce the notions of haptic sense and space into the social science discourse on emergency preparedness, I will develop the paper as follows: First, I present the empirical context of this paper and demonstrate the recent emergence of (what I have chosen to label) public simulation centres. After that, I return to the discussion on atmosphere briefly touched on above, in order to trace the limits of the concept and to provide grounds for introducing the notions of haptic sense and space in this field. Then, I present the notions of haptic sense and space as interpreted and employed in cultural and visual studies, art theory, and human geography. In this section I argue, first, that the notion of haptic space may help us direct attention to the ways in which features of the surrounding environment guides participants’ activity and experience within the simulation and, second, that the notion of haptic sense may help us direct attention to the ways in which participants perceive, sensorially and affectively, the features of the surrounding environment. Thereafter I employ the notions of haptic sense and space in order to theorize my empirical encounters with public disaster simulation centres in Turkey and Japan. Finally, I discuss some possible implications of the haptic perspective in this context.

Public Simulation Centres on the Rise

Let's start by considering how the simulation of disaster fits into a wider context of anticipatory practices. Simulation exercises share some essential characteristics with the dramatic arts like theatre and film. Indeed, the tools and techniques originally employed for the stage or screen (like scenario, scenography, choreography, and role-play) have propagated into the sphere of strategic planning as well as civil and military preparedness (Davis, 2002). Simulation as an anticipatory technique aims to enact or "play" potential futures so that participants may get a feel, in advance, of what these futures might be like (Anderson, 2010a, 2010b). However, enacting or playing potential futures by simulation is but one of a number of ways of making particular futures present. Other examples of anticipatory practices include imagining futures through scenario development or calculating futures by way of computer aided stochastic modeling (Anderson, 2010a). Once a particular future has been evoked, through any of these practices, it may be rendered governable by exercising various types of responses. This is precisely the idea behind establishing public centres for disaster simulation, in places frequently affected by earthquakes and other types of natural hazards. The Turkish government, for example, wants to launch an educational campaign concerning disaster preparedness through public simulation centres. As stated in its governmental strategic plan,

Regional disaster training centres will be built, which will have units such as earthquake, fire fighting, smoke, wind and storm simulation systems, 5-D cinema hall, first aid training room, information and testing corner, child playgrounds, seminar and training halls, and practical disaster trainings will be delivered to citizens (Government of Turkey, 2012, p. 75).

In organizational and professional emergency management settings, simulation has long been used for enacting and exercising possible futures (Anderson, 2010a; Ghamari-Tabrizi, 2000). Similar facilities for public use, however, is still an emerging though fast growing phenomenon.⁶ In the following, I present two such facilities, seeking to delineate some general traits of this type of centre and the learning approach they pursue.

Tokyo and Bursa are two densely populated cities highly susceptible to seismic hazards, which have experienced a recent upshift in governmental efforts to enhance public disaster preparedness

and community resilience. The upshift involves, among other things, establishing public centres for disaster simulation. The Tokyo Rinkai Disaster Prevention Park, for example, offers an edutainment attraction called the “72-hour experience” which consists of a full-scale scenographic simulation of a damage-stricken urban neighbourhood after a major earthquake.⁷ Participants enter into this representation of future disaster in order to practice appropriate response behaviors. Led through the desolated neighborhood by a guide, or by navigating instructions on a Nintendo game console, participants pause at various scenes to learn the relevant skills and knowledge for managing particular difficulties. For example, participants stop at a leaking gas main or a torn electrical wire in order to learn what to do in those specific situations. In the Bursa Disaster Education and Training Centre, the 72-hour experience (also termed “the earthquake debris corridor”) is created by way of a full-scale reproduction of a street hit by the 2011 Van Earthquake.⁸ The scene is animated with different lights, sounds, and structural materials. Likewise, in the Tokyo Rinkai centre, the uneasy atmosphere of continuously erupting aftershocks is created through projected imagery together with sound and lighting effects.

Disaster Simulation and Atmosphere

The assemblage of crumbled construction materials, discommoding sound- and light effects, and intermixed imagery of previous disasters, works to create affective qualities that envelope visitors in a temporary “as if” world (Anderson, 2014, p. 151). The simulated neighborhood of the 72-hour experience resembles a reified three-dimensional version of Ryuji Miyamoto’s (2006) deliberately unpretty photographs of Kobe after the 1995 earthquake. In fact, large photographs of post-earthquake streets in Kobe and Van cover the walls in order to provide a sense of spatial extension and depth. The fusion of authentic construction materials and deep-perspective images of historical disasters makes an “empirical factuality” (Davis, 2002, p. 27) which enables participants to achieve a high level of absorption by emotional association to past events (see also Anderson & Adey, 2011, p. 1103). As suggested by Ash (2010), designed environments like these, imply a certain tension between the openness and performative play of contingency and chance, and the mechanical systems through which these environments are designed (Ash, 2010, p. 655). The same kind of tension, I proposed in the introductory part of this paper, could be formulated in terms of

a relationship between the materiality of experience and the experiencing subject. We will return to this same tension again, through the notion of atmosphere.

The dynamic relation between materialities and experiences has been analysed by Böhme (2017) through his distinction between the aesthetics of production and the aesthetics of reception. The aesthetics of production concerns the particular material organization of the setting, the way in which a certain atmosphere is generated, while the aesthetics of reception pertains to the subject's affective experience of the setting and, hence, the simulated event. Now, obviously there is something going on in the space between the surrounding environment and the experiencing subject, something capable of translating the materialities of the simulation into individual affect.⁹ To Adey (2014), Anderson (2014) and, in particular, Böhme (2013, 2014, 2017), this something appears as atmosphere: "Atmosphere is something between the subject and the object; therefore, aesthetics of atmosphere must also mediate between the aesthetics of reception and the aesthetics of the product or production" (Böhme, 2017, p. 25). Consequently, as atmospheres may be attributed both to the environments from which they emanate and to the subjects who experience them, we cannot be completely certain about their ontological status (Böhme, 2017, p. 12). From the view of reception, atmospheres can be felt in terms of moods, sensory qualities, spatialities, and social dynamics, while, from the perspective of production, atmospheres can be intentionally created through various arrangements and assemblages of materials, visuals, lights, sounds, temperatures and smells. In the Tokyo Rinkai and Bursa centres, full-scale scenographic modelling is combined with construction materials and other kinds of materialities. The uneasy atmosphere of post-disaster stillness and imminent danger is generated through the particular material organization of the setting and the special effects induced by light, sound and imagery. Furthermore, unlike the traditional performance spaces of theatre and drama, but similar to participatory art (e.g. Fisher, 2012), there is no clear difference between audience and actors in the simulation centre. Upon entering the simulation, visitors become active participants in the enactment of potential futures. Nevertheless, the question remains, how do we actually perceive atmospheres, and how are atmospheres transformed into affective experience? The solution proposed here is that we perceive atmospheres as haptic spaces, through corporeal sensation. In the next section, I discuss how such a perspective may address these questions.

Disaster Simulation as Haptic Space and Corporeal Feeling

How can we make sense of simulated environments in ways that clarify the interaction between, to paraphrase Thibaud (2015, p. 42), the *simulation in practice* and the *feeling of the situation*? In the following, I present the notions of haptic sense and space as employed in visual- and cultural studies, human geography, and sociology. I argue, first, that the notion of haptic space may help us direct attention to the ways in which features of the surrounding environment guides participants' activity and experience within the simulation and, second, that the notion of haptic sense may help us direct attention to the ways in which participants perceive, sensorially and affectively, features of the surrounding environment. To start, we may note that the term "haptic" holds different meanings in different contexts. At its root, the term denotes various aspects of touch or tactile sensations (Paterson, 2007, p. 4). Over time, this meaning has transformed as to implicate something more than touch literally. Scholars have thus turned to the wider etymological meaning, "to come into contact with", to expand the concept also to encompass symbolic and metaphorical meanings of touch (Bruno, 2002, p. 6). The word "haptic" is often used as an umbrella term for the assemblage of sensory modalities, the more-than-touch, with which we perceive the outside world. It include kinaesthesia (the feeling of motion, pertaining to sensations originating in muscles, tendons and joints), proprioceptive awareness (the body's sense of its position and orientation in space), and the vestibular sense (that of balance, reliant upon the inner ear) (Garrington, 2013; Paterson, 2009). In cognitive science, this set of internally felt bodily sensations is often referred to as the somatosensory system (Paterson, 2011). In order to fully appreciate the notion of haptic sense, we may distinguish between haptic and tactile perception. Haptic perception refers to our active and conscious use of the somatosensory system, which implies stretching beyond the boundary of the skin, extending the nervous system beyond the body (Fisher, 2003). Tactile perception, on the other hand, refers to touch literally, as direct cutaneous sensing with the skin (Candlin, 2010). Actively extending the nervous system beyond tactile sensation, we are thus able to perceive or feel in a broader sense of the term. For example, haptic perception is crucial for our ability to sense spatiality. Think of attending an art exhibition without moving around, experiencing the artworks from just one single and static point of view. Without the amalgamation of proprioception and vision there would simply be no third

dimension. Moreover, “because it extends the human nervous system beyond the body, it is the distal aspect of haptic sense that perceives the affective climates of exhibition contexts” (Fisher, 2003, p. 20). Hence, just as we may concretely albeit most often passively “touch” the world, the world every so often “touches” us (Merleau-Ponty, 1962; Paterson, 2007).

From the perspective of symbolic and metaphorical meanings of touch, which is our interest here, the notions of haptic sense and space have taken on a remarkable ontological route. The sensory modality of vision has come to gain significance as an extension of touch and embodied experience. Like kinaesthetics and proprioception, vision too has become an elongation of the nervous system beyond the body. Haptic perception, as intrinsically bound up with vision and visual-embodied experiences, have been thoroughly explored in the field of visual studies (Marks, 2000, 2002, 2004, 2010, 2014, 2015). This “visualist” interpretation of the haptic sense may be traced back in time by contemporary authors like Laura U. Marks (2004), whose theory of haptic visuality builds largely on Deleuze’s and Guattari’s (1987) thoughts on haptic space and perception. Haptic visuality, in brief, is a theory of cinematic spectatorship in which the viewer, rather than seeking a distant mastery over the thing viewed, merges with it, pressing too close to the screen to even notice the film’s narrative and meaning (Marks, 2015).¹⁰ Haptic visuality emphasizes the viewer’s inclination to perceive in a haptic way, which means looking at the world as though touching it (Marks, 2004). This way of looking requires some volition or interest on the part of the viewer, and might thus be understood as highly active in contrast to “the distant and disembodied look solicited by optical space” (Marks, 2015, p. 256). Deleuze and Guattari, for their part, derive at and redefine the concept of haptic space from art historian Alois Riegl (1901/1995), who introduced the distinction between haptic (close range) and optic (distant) vision as a way to demarcate artistic expressions within Greek and late Roman art. As noted by Marks (2004, 2014), Riegl adapted the term “haptic” from physiology to emphasize the grasping manner of the close range kind of vision: “haptein” in Greek means “to touch or grasp” (ODE, 2010, p. 798). Haptic viewing, accordingly, means metaphorically touching or grasping an object or surface with the eyes (Marks, 2004).¹¹

Haptic viewing, as noted previously, is markedly active and explorative (Marks, 2015). With a similar thought, Bruno (2002, p. 6; 2014, p. 194) emphasizes that experiences take on a haptic

dimension when they tangibly establish a close, transient relationship between viewers, beholders, participants, and objects or environments. Likewise, Fisher (2003) emphasizes the mediating function of the haptic sense in terms of a relatedness between beholder and environment: “As distinct from the spectatorial distancing of a ‘disinterested’ visualist aesthetics, a haptic aesthetic accounts for the immersive engagement of beholders involving perambulation, balance, acceleration and the sense of dimensional space” (Fisher, 2003, p. 20). In other words, the experience (e.g. of a potential future earthquake) is made possible by the participants physically moving around within the space of the simulation, “feeling” the surrounding environment with the somatosensory (haptic) system. Participants experiences are thus largely determined by the intensity of their (inter)active awareness and absorption. As noted by O’Neill (2001): “People gain environmental understanding from tangible physical experience, from coming in contact with natural and built elements, and from moving through spaces, as well as from seeing objects in space” (O’Neill, 2001, p. 4).

Returning to Böhme’s discussion on atmosphere, we may say that a haptic space allows objects or environments to emit certain atmospheres in order to evoke certain feelings. It is a question of making atmospheres through intentional work (Böhme, 2017, p. 20). In a similar fashion, both Bruno (2014, p. 198) and Marks (2010, p. 54) refer to haptic spaces as “sculptured” environments, calling for surface encounters and intimate involvement rather than distant contemplation. Hence, the notions of haptic space and atmosphere both share a relation to the branch of contemporary art that foregrounds embodied and affective experience by way of spatial action, physical presence, materialities, scenes, etc. (Bruno, 2014, p. 195; Böhme, 2017, p. 27). The aim, consequently, is not in the production of the most authentic disaster, but in the imaginative idea that arises in participants through the simulation (Davis, 2002, p. 28). The haptic space of disaster thus relates to the subject’s inclination to imagine and to become immersed in the simulation (Böhme, 2017, p. 31). As an aid to imaginative enactment, the haptic space directs attention to certain areas for certain purposes (Ash, 2010).

Now, departing instead from Böhme’s aesthetics of reception, we may ask how properly to make sense of haptic spaces. That is, how do we, as participants, translate the materiality of the simulation into individual and collective affect? From the field of architecture, Böhme (2013) notes

that materiality is most often experienced synesthetically, by corporeal feeling: “Corporeal feeling allows me not only to feel something, but also to feel how I feel, my sensitive state. Atmospheres are by nature experienced by corporeal feeling, namely by their tendency to ‘affect’ me, to put me in a specific mood” (Böhme, 2013, p. 97). Corporeal feeling, accordingly, can be understood as an assemblage of our conventional (in a Western context) five senses and somatosensory system, and is thereby closely connected to the haptic sense as discussed above. With O’Neill (2001), “haptic perceptions are gained through corporeal activity and physical work. They allow us to know places in intimate, unself-conscious ways that visual sensibilities cannot describe” (p. 4). Although in many respects similar, the strength of the haptic sense in comparison with the notion of corporeal feeling is its well-developed and established terminology. For analytical purposes, the notions of haptic sense and space can be disassembled, as we have seen, into smaller units depending on what is presently in focus. One may choose whether to emphasize the spatiality of the simulation or the perception of simulated space, or the relatedness between the two. One may choose whether to emphasize any of the conventional five senses, or aspects of the somatosensory system, or the combination of various sense modalities.

Simulation in Practice

In order to explore the fruitfulness of the haptic perspective I will now proceed by theorizing my encounters with disaster simulations through a lens of haptic sense and space. The narrative is based on field notes produced during my stays at the Tokyo Rinkai centre 2014 and the Bursa centre 2015.¹² Focusing on the 72-hour experience (or the earthquake debris corridor), participatory observations were undertaken on the basis of a sensory ethnographic methodology inspired by Pink (2011, 2015) and Leder Mackley and Pink (2013). The subsequent processing of my field notes, together with other ethnographic materials like documents, film clips, photographs, and online resources, were organized around three overarching aspects of the haptic perspective, which I describe in the remaining part of the section.

The first aspect concerns inducing affect through close engagement with the physical environment. A short excerpt from the field notes may serve to introduce this aspect:

We find ourselves in an elevator descending from the tenth floor of a fake terminal station building somewhere in a fictional part of the Tokyo metropolis. We are six people in the elevator: me, my ten-year-old daughter, a couple of teenage girls, and a father holding his little son. All of a sudden, the since long feared earthquake hits central Tokyo. The building shakes, the lights go out.

The twitching elevator induces an immediate sense of presence in the here and now, as our haptic awareness is activated. Temporarily deprived of vision, we depend on our kinaesthetic and vestibular senses. The haptic space of the simulation thus forces us into close engagement with the surrounding environment, making distanced contemplation impossible. The dramatic situation can be understood as a way to affect participants by fostering conditions of stress (Anderson & Adey, 2011) or, as in the following situation, fear:

We emerge onto a devastated downtown street. An emergency worker in helmet and orange-colored vest gathers the group and, using a megaphone, updates us on what has happened. Behind the emergency worker, a brick facade gradually crackles. The whole building seems to be about to collapse on top of a car unfortunately parked in front of the house. I glance at my daughter and realize that she, even though everything we experience in here is obviously fake, is genuinely scared by the simulation.

The fragmented and ruptured contours of shattered buildings after an earthquake or other kind of destructive event is a telling example of what is meant by a haptic space. A haptic space must be moved through by constant reference to the immediate environment. A haptic space is navigated through, not by reference to the abstractions of maps, coordinates or compasses, but by making use of the haptic sense. That is, one has to “feel” one’s way through the environment rather than orient by way of static landmarks. Instead of gazing freely above the incident site, one finds oneself enmeshed in the environment and thus forced to attend to its material particularities.¹³

The second aspect concerns the oscillation between immersion and estrangement that is part of the simulation experience. As noted by Anderson and Adey (2011), emergency exercise planners often announce the unreality of exercises. Hence, simulations tend to oscillate between immersion through empirical factualities and estrangement through the less realistic treatment of the social and temporal aspects of disaster (e.g. Aradau & van Munster, 2012a). In the 72-hour experience, the apocalyptic atmosphere is intermixed with empirical factualities in order to

generate a heightened sense of realism and immersion through association with past events. For example, a large screen on the wall shows authentic footage from previous earthquakes, footage that is easily perceived as a live news-broadcast on the present disaster. At the same time, the use of a Nintendo game console to orientate creates an estrangement-effect counteracting immersion. In addition, the use of the console as navigation device makes the simulation less of a haptic space, as participants are able to move smoothly through the environment according to the instructions on the display.

The third aspect concerns inducing affect through distal experience of the physical environment. An excerpt from the field notes may serve to introduce this aspect:

Further down the street is a car sale with a dusty Opel slantwise on the pavement. A man, perhaps a mechanic as he is dressed in a blue overall, is lying on the ground, the lower part of his body stuck under the car and his head resting between a tire and a lump of concrete. A torn electric wire dangling just a few centimeters from his head adds to the sense of danger and urgency that the scene aims to convey. My gaze wanders over the things in the scene. I crouch and stretch in order to identify every possible threat. I take a step back to survey the scene in total, soon to return to the details.

Moving around the scene while actively viewing facilitates the spatial experience. My haptic awareness floats freely around the dusty rubbish, exploring in depth the material and immaterial qualities of the incident site. I perceive the imminent dangers through my haptic sense, by way of the kinaesthetic and proprioceptive modes of touch in intercommunion with active viewing. However, as noted by Deleuze and Guattari (1987, p. 493), haptic spaces may be as much auditory as visual or tactile. Likewise, as noted by Fisher (1995), “submerging the body in volumetric space, the haptic field of tactile involvement is not wholly determined by architectural barriers. It is possible, for example, to hear around corners” (Fisher, 1995, p. 112). The following excerpt may serve to illustrate this point:

At the farther end of the alley, a desperate cry for help sounds from somewhere underneath a huge pile of concrete and steel. The scene invites us to imagine a woman trapped in the rubble. In the present situation, attention is focused on the audible rather than the visual.

The immediate threat (of being crushed or suffocated) is out of frame and the imaginative action goes on in a negative space, inaccessible from my current position.

The disaster simulation is a haptic space in the sense that I have to be constantly and actively aware, utilizing my senses to perceive the intrinsic dangers as I move through the environment. The haptic space of the simulation affects the way I relate to the physical environment, evokes imagination, and makes me highly attentive to visible and invisible threats. The cry for help becomes an important feature of the haptic experience, as the sound of the voice forces me to consider negative spaces (that which is out of view) as potential sites of danger. Haptic spaces generate sensations and produce affectual reactions. Accordingly, the haptic space of disaster aims to calibrate my disposition to act rather than scare me into passivity (Adey & Anderson, 2012, p. 105).

Beyond Experience

This paper has served to introduce the notions of haptic sense and space in the social science discourse on emergency preparedness education and training. My argument throughout was that there is a lot going on in the space between the materiality of the simulated environment and the experiencing subject that, because of an insufficient vocabulary, tends to remain elusive. Three aspects of the haptic perspective were presented, namely (1) close engagement with the physical environment, (2) the oscillation between immersion and estrangement, and (3) affect through distal experiences. Taken together, these three aspects show how materials and objects are employed to produce a heightened sense of immersion; how the use of sound, light and visual effects are employed to produce affective reactions like confusion, stress or fear; how participants engage closely with the surrounding environment (i.e. “feeling their way” rather than orienting by distant vision); and how participants engage in active viewing as a form of spatial experience (i.e. “touching” objects and surfaces with the eyes). Still, the “as if” world of the simulation suffers from an unrealistic treatment of disaster temporality. As noted by Aradau and van Munster (2012a), simulation as anticipation of future disaster (i.e. “acting in the future”) is largely about the management of space, which leads to a suspension of disaster temporality (p. 104).

To conclude, the notions of haptic sense and space may take us beyond present understandings of experience when employed to capture the transformation of subjects from passive spectators to active participants. Moreover, disaster simulations invite participants to learn. That is, the kind of “lived experiences” provided in the Bursa and Rinkai centres aim to foster skills necessary to cope with possible future disasters. The purpose of the exercise is thus not simply to provide a few moments of entertainment or thrill, but for participants to become deeply and seriously affected by the anticipated future as represented by the simulation. The notions of haptic sense and space may function as tools for describing the *provision* as well as the *perception* of anticipated futures. By incorporating these concepts, I wish to open up for new ways to capture and describe processes of producing affective experiences. In analytic terms, the haptic perspective seems promising since it is attributable both to the physical environment (the aesthetics of production) and the perceiving individual (the aesthetics of reception), as well as to the immaterial space in between. Lastly, as noted by Aradau and van Munster (2013, p. 95), anticipatory experiences in the context of disaster preparedness exercises work by the activation of multiple senses. It is through the haptic sense that a vigilant synaesthetics is made possible and, consequently, subjects change from passive spectators to active participants.

Notes

¹ I am grateful to Riduan Bilgin and the staff at Bursa Valiliği Afet Eğitim Merkezi, and to Mikiko Kashiwagi at the Japan International Cooperation Agency, for their generous assistance during my stay in Bursa.

² Such a purpose, as expressed by an authority (e.g. Government of Turkey, 2012), would be a natural starting point for an analysis of disaster simulation as a technology of governmentality. The special kind of lived experience provided in the public simulation centre aims to foster skills and knowledge necessary to cope with possible future disasters like earthquakes, landslides, and flooding. In this sense, the learning experience provided in these centres can be thought of as a specific form of Foucauldian self-technology, emphasizing, as it does, the modification of individual conduct – not only skills but also attitudes (Foucault, 1988:18). As noted by Fisher

(1995), aesthetic practices, to which we may add public disaster simulations, play a vital role in transforming the subject: “This occurs in what Tony Bennett, after Michel Foucault, has described as ‘the gap between the self as it is and the ideal of personality posited by the aesthetic discourse that opens up a region in the subject – however it may be conceived – as a potential for self-management’” (Bennett [1990] in Fisher, 1995, p. 270). Nevertheless, the boundaries between simulation “as entertainment”, - “as education”, and - “as governmental technology of self-management” is by no means clear. Hence, while being fully aware of the possibility to approach the case of public disaster simulation from a governmentality perspective, I consider it out of scope for the present study. By necessity, such a study would have to attend more closely to authorities’ articulations of expectations on the public. In the present study, focus is geared instead towards exploring connections between the materiality of experience and the experiencing subject.

³<http://www.dri.ne.jp/en/exhibition/course>

⁴By which I mean “designed environments which cultivate the desired kinds of affect” (Ash, 2010, p. 655).

⁵Emergency exercise simulations involve what Casey (1976) terms an “as if” process, in which participants regard the enacted or imagined events “as if” they were real (Anderson, 2010a, p. 785; 2010b, p. 230).

⁶Of course, public simulation facilities for the purpose of entertainment and thrill has existed for a long time. For example, the Maréorama, which was exhibited at the Paris Exposition in 1900, created the illusion of being on the deck of a ship: “To enhance the effect, the floor was mechanically agitated to render the sense of navigation. Changes of day and night were represented in a synesthetic form of journey that included smell, sea breeze, and the sound of live music... Thus the Maréorama made spectators into ‘passengers’ as it simulated the (e)motion of travelling by sea” (Bruno, 2002, p. 183). A particular genre of this 19th- and early 20th-century popular amusement was the disaster show, which typically involved visual representations, sound effects, fireworks, lectures and theatrical performances in spectacular reenactments of fires, wars, earthquakes, volcanic eruptions, and floods. Spectators were often incorporated into the scenes, playing the part of gazing onlookers (Ekström, 2012).

⁷ <http://www.ktr.mlit.go.jp/showa/tokyorinkai/english>

⁸ <http://www.afetegitimmercezi.com>

⁹ I talk here of the experiencing subject and individual affect in a way that opens for the misunderstanding of affective experience as private, simply belonging to or emerging from within individuals. As noted by Ahmed (2004), feelings are collective in that they take shape through the impressions made by bodily others. Likewise, Fisher (2012) relates to the aesthetic modality of “being present” in terms of the mutuality of affecting and being affected (Fisher, 2012, p. 155). Furthermore, Anderson (2009) has pointed out that atmospheres are the shared ground from which subjective states and their attendant feelings and emotions emerge (p. 78).

¹⁰ Mark’s theory of haptic viscosity is primarily applicable to cinematic or screen-based works while in this paper I focus on full-scale realistic simulations. Nevertheless, what I bring from Mark’s theory is the way we actively take in with the eyes what surrounds us; hence, we metaphorically touch or grasp objects and surfaces with the eyes.

¹¹ In a similar fashion, Fisher (1995) has proposed the term “beholding” as a contrast to the scopic terminology of spectatorship or viewing, because “it more precisely implicates haptic and proprioceptive processes of involvement” (p. 108). Hence, “to behold is not to distantly ‘view’ but to perceive spatial volume with the surfaces of one’s whole body” (p. 109).

¹² The empirical material for this paper consists of field notes, interviews, photographs and video clips from approximately 30 hours of participant observation in the Tokyo Rinkai and Bursa centres. In addition, I assembled a considerable amount of Internet based material on these and similar public simulation centres. I participated in pre-booked training sessions along with various groups (primary school pupils, people with functional diversities, office employees) as well as informal drop in sessions aimed for the public at large. Hence, in order to understand sensory experiences of others, one have to expose oneself to the same experiences as the ones participating in the research (Paterson, 2009, p. 776; Pink, 2015, p. 26). Researchers interested in experiential learning may engage in the practices they wish to learn *beyond observation* by becoming apprentices in those sensory embodied skills: “On the one hand here is a shift between *looking at* and collecting data on to *being in* and engaging in ways of knowing about the worlds and actions of other people” (Pink, 2011, p. 271). Accordingly, the sensory ethnographic approach

employed here has its roots in the phenomenology of perception (e.g. Merleau-Ponty, 1962) rather than the naturalistic approaches of conventional ethnography. Attending closely to haptic experiences thus means shifting focus “from seemingly naturalistic ‘sensations’ to more complex, enfolded sensuous ‘dispositions’” (Paterson, 2009, p. 784). Based on the theoretical underpinnings as suggested above, analysis of the field notes and visual materials were carried out through several rounds during 2016-2017. The focus of analysis was to identify ways, practices, and arrangements through which the haptic perspective was articulated. Now, given the centrality of “presence” to realistic disaster simulations (alluding to Fisher, 2012), “it is significant to note that haptic sense modalities can only be perceived in present time” (Fisher, 2012, p. 158). Thereby, as noted by Pink (2015), one should treat the content of the research materials (i.e. the written words, visual images, material objects, etc.) as evocative of the research encounter through which they were produced, as well as treating these materials as representations of knowledge that can be analysed systematically and thematically (Pink, 2015, p. 144; see also Leder Mackley & Pink, 2013).

¹³ As described by Deleuze and Guattari, haptic spaces are local spaces of pure connection: “One never sees from a distance in a space of this kind, nor does one see it from a distance; one is never ‘in front of’, any more than one is ‘in’ (one is ‘on’...)” (Deleuze & Guattari, 1987, p. 493).

References

- Adey, P. (2014). Security atmospheres or the crystallization of worlds. *Environment and Planning D: Society and Space*, 32(5), 834-851.
- Adey, P., & Anderson, B. (2012). Anticipating emergencies: Technologies of preparedness and the matter of security. *Security Dialogue*, 43(2), 99-117.
- Ahmed, S. (2004). Collective feelings. Or, the impressions left by others. *Theory, Culture & Society*, 21(2), 25-42.
- Anderson, B. (2009). Affective atmospheres. *Emotion, Space & Society*, 2(2), 77-81.
- Anderson, B. (2010a). Preemption, precaution, preparedness: Anticipatory action and future geographies. *Progress in Human Geography* 34(6), 777-798.
- Anderson, B. (2010b). Security and the future: Anticipating the event of terror. *Geoforum*, 41(2),

227-235.

Anderson, B. (2014). *Encountering Affect. Capacities, Apparatuses, Conditions*. London, England: Routledge.

Anderson, B., & Adey, P. (2011). Affect and security: exercising emergency in 'UK civil contingencies'. *Environment and Planning D: Society and Space*, 29(6), 1092-1109.

Aradau, C., & van Munster, R. (2012a). The Time/Space of preparedness: Anticipating the "Next Terrorist Attack". *Space and Culture*, 15(2), 98-109.

Aradau, C., & van Munster, R. (2012b). The securitization of catastrophic events: Trauma, enactment, and preparedness exercises. *Alternatives, Global, Local, Political*, 37(3), 227-239.

Aradau, C., & van Munster, R. (2013). *Politics of Catastrophe. Genealogies of the Unknown*. London, England: Routledge.

Ash, J. (2010). Architectures of affect: anticipating and manipulating the event in processes of videogame design and testing. *Environment and Planning D: Society and Space*, 28(4), 653-671.

Bruno, G. (2002). *Atlas of Emotion. Journeys in Art, Architecture, and Film*. New York, USA: Verso.

Bruno, G. (2014). *Surface. Matters of Aesthetics, Materiality, and Media*. Chicago, USA: The University of Chicago Press.

Böhme, G. (2013). Encountering atmospheres: A reflection on the concept of atmosphere in the work of Juhani Pallasmaa and Peter Zumthor. *OASE: Journal for Architecture*, 91, 93-100.

Böhme, G. (2014). The theory of atmospheres and its applications. *Interstices: A Journal of Architecture and Related Arts*, 15, 92-99.

Böhme, G. (2017). *Aesthetics of Atmospheres*. J.-P. Thibaud (Ed.). New York, USA: Routledge.

Candlin, F. (2010). *Art, Museums and Touch*. Manchester, England: Manchester University Press.

Casey, E. (1976). *Imagining. A phenomenological study*. Bloomington, USA: Indiana University Press.

Collier, S. (2008). Enacting catastrophe: Preparedness, insurance, budgetary rationalization. *Economy and Society*, 37(2), 224-250.

Davis, T. C. (2002). Between history and event. Rehearsing nuclear war survival. *The Drama Review*, 46(4), 11-45.

- Deleuze, G., & Guattari, F. (1987). *A Thousand Plateaus. Capitalism and Schizophrenia*. Minneapolis, USA: University of Minnesota Press.
- Ekström, A. (2012). Exhibiting disasters: Mediation, historicity and spectatorship. *Media, Culture & Society*, 34(4), 472-487.
- Fisher, J. (1995). *Aesthetic Contingencies: Relational Enactments in Display Culture*. Doctoral Dissertation. Montreal, Canada: Concordia University.
- Fisher, J. (1997). Interperformance: The live tableaux of Suzanne Lacy, Janine Antoni, and Marina Abramovic. *Art Journal*, 56(4), 28-33.
- Fisher, J. (2003). Tactile affects. *Tessera*, 32, 17-28.
- Fisher, J. (2012). Proprioceptive friction. Waiting in line to sit with Marina Abramovic. *Senses & Society*, 7(2), 153-172.
- Foucault, M. (1988). *Technologies of the self. A seminar with Michel Foucault*. L. H. Martin, H. Gutman, & P. H. Hutton (Eds.). Amherst, USA: University of Massachusetts.
- Garrington, A. (2010). Touching texts: The haptic sense in modernist literature. *Literature Compass*, 7(9), 810-823.
- Garrington, A. (2013). *Haptic Modernism: Touch and the Tactile in Modernist Writing*. Edinburgh, England: Edinburgh University Press.
- Ghamari-Tabrizi, S. (2000). Simulating the unthinkable: Gaming future war in the 1950s and 1960s. *Social Studies of Science*, 30(2), 163-223.
- Government of Turkey. (2012) *Strategic plan 2013-2017*. Disaster and Emergency Management Presidency (AFAD). Prime Ministry, Republic of Turkey. Retrieved from https://www.afad.gov.tr/upload/Node/2584/files/Afad_Strtjk_web_en_son.pdf
- Leder Mackley, K., & Pink, S. (2013). From emplaced knowing to interdisciplinary knowledge. *The Senses and Society*, 8(3), 335-353.
- Marks, L. U. (2000). *The Skin of the Film. Intercultural Cinema, Embodiment, and the Senses*. Durham, USA: Duke University Press.
- Marks, L. U. (2002). *Touch. Sensuous Theory and Multisensory Media*. Minneapolis, USA: University

of Minnesota Press.

Marks, L. U. (2004). Haptic visuality: Touching with the eyes. *Framework*, 2, 78-82.

Marks, L. U. (2010). *Enfoldment and Infinity. An Islamic Genealogy of New Media Art*. Cambridge and London, England: The MIT Press.

Marks, L. U. (2014). "Haptic aesthetics". *Encyclopedia of aesthetics*, 2nd ed. Oxford, England: Oxford University Press.

Marks, L. U. (2015). The Taming of the Haptic Space, From Malaga to Valencia to Florence. In O. Bush, & A. Shalem (Eds.), *Muqarnas: An Annual on the Visual Cultures of the Islamic World*, 32, 253-278.

Merleau-Ponty, M. (1962). *Phenomenology of Perception*. London, England: Routledge and Kegan Paul Ltd.

Miyamoto, R. (2006). *The Earthquake Revisited*. Kobe, Japan: Bearlin.

ODE (2010). "Haptic". *Oxford Dictionary of English*, 3rd ed. Oxford, England: Oxford University Press.

O'Neill, M. E. (2001). Corporeal experience: A haptic way of knowing. *Journal of Architectural Education*, 55(1), 3-12.

Paterson, M. (2007). *The Senses of Touch: Haptics, Affects and Technologies*. Oxford, England: Berg.

Paterson, M. (2009). Haptic geographies: ethnography, haptic knowledges and sensuous dispositions. *Progress in Human Geography*, 33(6), 766-788.

Paterson, M. (2011). More-than visual approaches to architecture. Vision, touch, technique. *Social & Cultural Geography*, 12(3), 263-281.

Pink, S. (2011). Researching in atmospheres: video and the "feel" of the mundane. *Visual Communication*, 14(3), 351-369.

Pink, S. (2015). *Doing Sensory Ethnography*, 2nd ed. London, England: SAGE.

Poli, R. (2017) *Introduction to Anticipation Studies*. Cham, Switzerland: Springer.

Riegl, A. (1901/1995). Late Roman Art Industry. In E. C. Fernie (Ed.), *Art History and its Methods: A Critical Anthology*. London, England: Phaidon Press Ltd.

Thibaud, J-P. (2015). The backstage of urban ambiances: When atmospheres pervade everyday experience. *Emotion, Space and Society*, 15, 39-46.