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Measuring movements in the field: Practices of surveying community walking areas in Finland and Australia

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ABSTRACT

Walking involves aligning, recalibrating, and interacting with the environment. Growing research in the humanities and social sciences recognises walking as an embodied practice that situates humans in the nonhuman realm, and is indicative of how our mobilities connect with larger socio-cultural and environmental systems. The 'Land Art' movement used walking interventions that respond to environmental elements, however many of these artworks focus on the individual human perspective, disregarding nonhuman actions that also exist in each site. Focusing on the act of walking through forests and parks in Finland and Australia, this paper examines creative practices of 'surveying' that foreground more-than-human movements. I discuss site-specific artworks and experiments that respond to sites frequently walked over, to create new modes of encounter that alters anthropocentric perceptions of walking practices. Measuring movements in the field, through appropriating formal practices of surveying, assists in understanding how human action is positioned within broader ecologies and global systems of measure.

KEYWORDS

Anthropocene, mobilities, creative arts, walking, parks, surveying

Introduction

While walking, our movements are entangled with a range of other movements: the trees, wind, grass, insects, paths, morning dew drops, and weeds are moving together, growing together, in and around each other. It is an ecology of micro-movements that we are part of. We adjust our movements as we sense the environment around us: responding to the wind, light, pressure of our footsteps, a swooping bird, or balancing as we move. Each step pushes one movement into another. For instance, the pressure of a foot on a stick cracks the wood, splinters of it scatter into the grass, shifting the mulchy garden bed, and creating further movements. Our movements feed into the diverse assemblage of the more-than-human realm.

Whether we are traversing a local urban park, walking in a conservation area, or hiking through farmlands, we are interacting with an array of nonhuman actors. We align to a path, recalibrate our pace as we walk on uneven terrain, and interactions span our muscles, other walkers, swooping birds, or the breeze. Experiences such as this, even though fleeting and momentary, can be indicative of a greater awareness of our position and scale, and how our movements interact with a variety of influences. These are moments when anthropocentric ideals of experiencing "nature," the "outdoors," or "green" spaces, are adjusted, if only slightly, making room for the array of nonhumans that are present. Walking is "ambulatory knowing" (Ingold 115) in which one may become aware and responsive to movements that are entangled with environmental surrounds. Walking is an example of one of the many situations where we draw inspiration and tacit understandings of the environments we are moving through. While current research in the social sciences and humanities highlights the relationships and impacts that our everyday, routine movements are having on larger environmental ecologies (Gibson, Rose and Fincher; Latour; Urry), the techniques and methods that we can learn from such attunements invite further speculation and examination. Alternative, creative, and diverse techniques for living in the Anthropocene are needed, which move past nature-culture and human-nonhuman binaries or divisional modes of experience.

In this paper I examine creative practices of "surveying" movements that occur in shared walking areas as a way to foreground more-than-human movements. This involves rethinking the overlaps and intersections of scientific traditions that survey the environment (such as land surveying, and cartography), ethnographic methods, and creative art practices that forge interventions and alternative intra-actions between humans and the environment. Drawing on my own experiences of walking and a series of experiments and site-specific artworks created during an artist residency in rural Finland and experiments in my local urban park in the city of Brisbane, Australia, [1] I explore creative techniques for surveying and measuring our interconnected movements in community walking spaces. Using a variety of techniques that appropriate land surveying equipment, I propose new practices of creative surveying, coordinating, and measuring assist in attuning to how people move and interact with local, micro movements and larger, global systems of measure. Attention to how an individual's movements impact on, and are influenced by larger environmental systems is brought to

[1] This creative research was conducted during a one-month residency in August 2015 at Arteles Creative Centre, near Hämeenkyrö, Finland; and in Yeronga Memorial Park, Brisbane, Australia, during March-April 2016 and December 2016-January 2017. Selected artworks were exhibited in August 2016 at Red Gallery, Melbourne.

the foreground in the Anthropocene. However, these measures are often complex sets of coordinates, statistics and data. What this paper explores are alternative practices of measuring our actions, which offer creative mechanisms to harness the affective, experiential, and more inclusive modes of measuring our movements. I argue that these practices push past anthropocentric understandings of walking and movement and instead emphasise how human actions are already entangled with more-than-human movements.

Even at this early stage it is important to emphasise that the activity of walking is used to set the scene for the actions that occur in each site, rather than present an inquiry into the meanings and history of walking. To be clear, this is a methodological paper that explores and offers new practices for attuning to environmental intra-actions (Barad). [2] These are alternative modes of attention to more-than-human encounters – moments when we sense and feel collective actions that are beyond ourselves as individuals and shift past anthropocentric perspectives (Braidotti; Manning). The kinds of attention and intra-action of human and nonhuman movements could equally be examined via other forms of movement, whether these are pedestrian, mobility aided by technology, or even more stationary experiences in specific environments. While the practices I discuss are drawn from my own fieldwork and artistic processes, they are by no means a ready-made methodology. Instead, the examples are offered as propositions for more-than-human techniques for environmental action. This is a practice that extracts techniques from cartographic and surveying traditions, adapting them to a broader inquiry into the entanglement of human and nonhuman movements. They are possibilities for responsive and inclusive modes of cohabitation, or techniques for measuring the extent of individual actions and the interconnectedness of movements.

[2] I use the term "intra-action" (rather than "interaction") throughout in reference to Karen Barad's term, which points towards the emergent and relational agencies that take shape in "mutual entanglement" (33). This implies that at times, under certain conditions, interactions between humans and nonhumans forge into "mutual constitution of entangled agency" (33), or what might also be referred to as "more-than-human" (Braidotti; Latour).

In three sections, the paper examines practices of measuring movements in the field, suggesting new techniques to attune to the myriad of more-than-human actions. First, I explore a range of literature from social sciences, humanities, tourism, and creative arts to explore how walking has been perceived as a practice. In particular, I focus on practices developed in the "Land Art" movement that reflected and adapted formal techniques of cartography, surveying, and urban design. Second, I draw from my own experiences of playful experiments of surveying and measuring walking paths in Finland and Australia to highlight points of movement that are beyond individual human perception or experience. Finally, I suggest how techniques for measuring movements conjure awareness of the intersection of daily movements and mobilities on a global scale. In doing so, the frequently anthropocentric perspective of leisure activities and shared walking spaces are repositioned in favour of a more inclusive notion of "community" including, and at times beyond, the human.

The practice of walking

Everyday mobilities, such as walking, are opportunities to examine our entanglement with nonhumans and the experiences that connect us to a

range of larger socio-cultural and environmental systems (Gibson, Rose and Fincher; Huijbens and Gren; Latour). In particular, research on walking has been gaining momentum over the past decade, instigating breaches in disciplinary boundaries and techniques. While there are extensive writings on walking in literature, historical accounts, and artistic practices, the focus in this paper is on recent discussions of walking as a methodological approach. My interest lies in the way that walking has become a blending of cartographic and scientific practices that survey where walking occurs, and the examination of the socio-cultural ideas instigated through pedestrian routines, which together foreground walking as a practice.

Walking, as a routine, mundane practice, can be used as a situation that draws attention to more-than-human relationships that are instigated through movement. Moving at a pedestrian pace, whether this be walking, running, hiking, cycling, and so on, alters our perceptions and experiences of environmental conditions (Larsen; Laurier, Brown and McGregor; Nixon). Sensing as we move, our bodies are "endowed with kinaesthetics" that respond to "various objects and technologies that facilitate" our perceptions and sensations (Urry 48). With each step, glance, or breath, sensations emerge that instigate new intra-actions that move between the walking body and the environmental surround. Tim Ingold's influential writing on walking and movement highlight the relationships between human bodies, environmental conditions and "temperate experience" (Ingold 115). Actions such as breathing air, sensing the gravity of a footstep, or awareness of the direction that we are travelling, are instances where our experience is a composition of human and nonhuman relations. Ingold describes that, "A living, breathing body is at once a body-on-the-ground and a body-in-the-air. Earth and sky, then, are not components of an external environment" (116). Walking practices open up a multisensory realm of knowledge acquisition that allow us to sense kinaesthetically the movements through and across human and nonhuman forms.

Repositioning human action on a geological scale means that everyday, routine movements, such as walking, need to be understood as bound within a larger flux of mobilities that feed into large systems of consumption, cultural practices, and conservation (Gibson, Rose and Fincher; Huijbens and Gren; Latour). Such movements shift our perspectives to larger scales that are often beyond human measure and respond to ecological or geological sites. The "Land Art" movement (also commonly referred to as "Earthworks" or "Earth Art") which rose to public attention in the mid 1960s through the careers of Richard Long, Robert Smithson, James Turrell, Dennis Oppenheim, Nancy Holt, Walter De Maria, and Alan Sonfist (to name a few), provides a starting point for examining creative practices that measure human movements within specific sites. Employing a range of cartographic, surveying, and design techniques, Land Art responded to the presence and immediacy of human action and scale within vast landscapes.

The publication of Richard Long's well-known work "A Line Made by Walking" (1967), often cited in social sciences literature on walking, was a foundational moment in Land Art. Walking backwards and forwards across a grassy site, Long's footsteps impressed into the grass and earth leaving a

visible line as a temporary trace of his movements, which he then photographed. The following year, Long walked ten miles through England, following a straight line with a compass. The resulting work, titled "A Ten Mile Walk, England," (1968), was presented as documentation of the event: a line drawn onto a map was the only material trace of the walk. While in most of his works "Long did not mark the landscape through which he passed" (Tufnell 11), his artworks are, nevertheless, absent of any human traces other than his own. In this way, Long's works capture and expand on idealistic relationships of the artist and "nature," which has been the focus of the critique of many pioneers of the Land Art movement (Boettger; McKee 51). To a certain degree, Long's selection of remote locations such as the Himalaya, the Andes and the Sahara (Beardsley 40-43; Boettger) reinforce human-nonhuman and nature-culture divisions. For Long and many of the Land Artists, their engagement was focused on their breakthrough in thinking about the human-nature relation in terms of art value and production, rather than as activist ways of generating environmental awareness or conservation practices.

Land Art laid the foundations for creative adaptations of ethnographic, geographic, and anthropological fieldwork practices that responded to site-specific elements. Techniques that the early Land Artists implemented extend and refer to formal cartographic and scientific traditions. The scales of works were often beyond human perspective, requiring the aid of technology to create or mediate the artist's engagement with the site, or for the viewer to see the entirety of the work or the geometrical illusions that many of the works relied on. For example, Walter De Maria created "Two Parallel Lines (Mile Long Drawing)," (1968), which were half a mile long and required viewing from the air. Robert Smithson's famous series of "Aerial Art" works were also designed to be viewed by passengers in aeroplanes to challenge their perceptions of the relationships between the Earth, plane, and passengers (Barry; Tufnell 6). These works played with alternative scales of the (human) body as measure, however, they relied heavily on anthropocentric perceptions of human action pitted against the Earth as inert matter.

While many of the famous Land Art works instigate conceptual and corporeal movements into scales that are beyond individual human measure, there are limitations to how effective they acknowledge or value the nonhuman ecologies in each site. The artworks frequently centre on the individual human experience of moving through a site, or crafted for a human perspective of the "natural" site-specific materials. In a similar vein, studies of walking in humanities, social sciences, and tourism disciplines are often focused on the individual's sensations within significant landscapes, such as iconic hiking tracks, or vast, isolated or geologically unique areas of tourist spaces (Urry and Larsen). While touristic ideals prime us for a certain level of attunement to the environment, they are often positioned as anthropocentric practices that fulfill idealised motivations for walking. Such examples of purposeful walking for leisure primes one to be attentive to the nonhuman realm; waiting to see and hearing wildlife calls, or pausing to contemplate the landscape aesthetics of our surrounds (Benediktsson and Lund; Ingold; Haldrup and Larsen). Walking for leisure, in particular, signals

that we often anticipate and commence walking practices with an expectation and mediation of nature that is removed and unconnected to human activity. Far too often, these idealised movements through environments work to reinforce anthropocentric views and privileged experiences of movement.

Running throughout this brief selection of Land Art examples and walking literature is the abstracted relationships between humans and the environment they are walking or moving through. Describing Long's work and Land Art practices, Ingold aptly states that, "For a start, the walker does not set out upon a blank sheet" (121). It is important to acknowledge that the Land Art movement did draw attention to the manner in which creative arts can harness and foster alternative forms of material, technological, aesthetic, and socio-cultural practices. Artists such as Richard Long and Robert Smithson's works attend to the abstracted relationships of human action and the nonhuman realm. While critiques of their works highlight the anthropocentric perspectives of their engagement with landscapes, seen as the passive blank canvas to work upon, their works also provide tangible ways that respond to changing aesthetics of human movement and usage of landscape for leisure, development, or conservation purposes.

Creative surveying of the field

With the impacts of anthropogenic climate change becoming more prominent and discernable, and the increasing reliance on technologies to measure and monitor human action in relation to Earth systems, the question now becomes how can art practices be used as an apparatus to measure, position, and triangulate our relationships to the world? Instead of surveying the landscape as a blank canvas, which was a focus of the critique of the Land Artists, I have been investigating how a merger of creative art practices and surveying techniques can be used to identify communal movements in specific sites. An intersection of scientific, ethnographic, and creative techniques are used to measure instances where human and nonhuman action merges. I have been conducting a series of experiments during fieldwork that are at the intersection of scientific, ethnographic, and creative techniques to measure, document, and alter the perceptions of a landscape and to survey the environmental resonances that occur in a site.

"Surveying" is process of mapping and measuring the environment. It involves using scientific equipment and calculations to measure a particular space and area, and is normally used in building, construction, or expeditions. Technologies and equipment that assist in calculating and triangulating a position on spatial grids of reference (for instance, maps, global positioning systems, levels or compasses) locate human scale in relation to topographic and infrastructure elements. Being able to locate oneself in a particular site, affixed to national datum or global coordinates of latitude and longitude, metric scales and units of measure, implies that space has been secured and rationalised to fit within anthropocentric perceptions. As Doreen Massey explains, "Conceiving of space as a static slice through time, as representation, as a closed system and so forth are all ways of taming it" (59). Measuring, calculating and "taming" space runs the risk of anthropocentric

perceptions that exclude other speeds or modes of movement. However, these techniques and tools have been prominent in artistic practices that are attentive to environmental and site-specific engagements.

While the distinct examples from the Land Art movement measured landscapes in relation to human bodies and anthropocentric scales, there have been many other notable artistic interventions that respond to site-specific elements through an adaptation of surveying and cartographic techniques. For instance, Roni Horn's project "Vatnasafn / Library of Water" (2007), is an installation of water samples taken from twenty-four glaciers in Iceland, presented in cylindrical glass columns. Horn commissioned geologists to drill and extract samples from glaciers, which, when installed in tall glass columns preserved for display, offers a new spatialisation and cartography of the glacier landscapes of Iceland. It is a flattening out and distortion of the geologic and surveying techniques, manoeuvering across artistic artefact, museum documentation, and scientific practice. Another example that traverses cartographic and artistic interventions is Nina Katchadourian's artwork "Finland's Unnamed Islands" (2000), which explores the tensions of formal mapping practices. Cutting out prints of unnamed islands from an atlas, Katchadourian rearranged these into scientific cabinets for display as an artwork. Similarly, her site-specific work "Translation Exercise" (1993), in which she transported rocks across Finnish islands, swapping their locations and documenting the process through photographs and a journal, is a dispersion of geologic forms re-mapped through creative practice. Katchardourian's works highlight the many movements across media, documentation modes, and in-situ experience that inform and reshape traditional cartographic techniques.

The infusion of Anthropocentric scales of space and time through cartographic and surveying techniques is increasingly made accessible through digital technologies. Devices that aid in navigating or locating oneself (such as locative media or GPS) have become infused with everyday mobility and wayfaring practices (Laurier, Brown and McGregor; Urry), with the result of landscapes being re-presented in virtual or mediated forms. The project "Postcards from Google Earth" by Clement Vallia (2010-ongoing), is a series of printed screenshots of Google Earth, where the ground appears to melt or roads and infrastructure curve and bend in unanticipated ways. These are 'glitches' of Google Earth's visualisations that Vallia has located. The works draw attention to the virtual mapping aesthetics that one expects to see, and the "distorted" points at which the mapping architectures mismatch the positioning of infrastructures (such as bridges and roads) in relation to the shape of the terrain. This is just one example of the multitude of recent creative adaptations of cartographic and surveying techniques, having the effect of destabilising the distinctions between humans and environment, as well as scientific and social practices (Latour in Latour and Serres 140). These work against the traditional techniques and media used for surveying and cartography, where any variables for where we might think and feel ourselves in relation to the environment we are bound with/in are rendered outside the ideal frame of reference.

For several years I have been experimenting with alternative practices of surveying, using land surveying equipment such as theodolites, flagging tape, rulers, levels, compasses and GPS devices, to appropriate anthropocentric surveying techniques. Instead of surveying for the purpose of tracing the established, sedentary features in a site, my fieldwork practices have been attempting to track "field sites" of movement that are inclusive of human and nonhuman actors. My focus is on sites that are shared walking spaces, which bring to bear the problematic of human action seemingly dominating the existing environment (for example, a paved cement walking path *over* the grassy field). It is important to note that walking is not the primary movement or action that I am trying to home in on. However, walking, when considered as a broad set of social practices (for leisure, transport, and so on), provides an exemplary situation to study how human actions respond to, alter, and/or are repositioned by the environmental surrounds.

In the following two sections I describe a series of experiments and fieldwork practices to survey movements in two locations: a rural forest in Finland and an urban park in Australia. Although the two sites are "green" spaces, they have unique ecological aspects and usages for the local (human) communities. My engagement with each site teases out new practices of creative surveying that measure the entangled movements within these shared sites. The creative surveying practices that I have developed are not so much about observing the movements (as documentation of an event) but rather concerned with tentative explorations of how we might attune, feel, and inflect such entanglements of human and nonhuman action.

Site 1: Forests in Finland

During August 2015 I undertook an artist residency at Arteles Creative Centre in the regional area of Hämeenkyrö, Finland. Originally a small rural school, the residency buildings have been converted into artist studios that are surrounded by pine and birch forests. The "backyard" stretches out into a network of walking tracks through neighbours' lands, farming fields, and forestry areas (Figures 1 and 2). Some of these walking tracks were not exactly well trodden. Although a dozen people might walk through that area of the forest each day (visiting artists, farmers, local residents, hikers, and so on), you had to look closely for evidence of the walking tracks: looking for snapped sticks on the ground, small tree branches bent aside, or muddy footprints walked over mossy rocks. Due to my unfamiliarity with this type of forest environment, I was unable to determine if the tracks I followed were made by humans walking, or from moose, deer, or even bears that were spotted roaming the forest.

Fig. 1 The "backyard" birch and pine forest.

Fig. 2 An entry point to a walking track on a nearby farm.

During the course of the month I noticed how the walking tracks changed. A storm would blow through, bringing down branches from pine and birch trees, while covering the undergrowth with leaves. The tracks would be re-routed around new obstacles such as fallen trees or ants rebuilding their nests. Traces of weather and seasons – the often intangible and immaterial actors – intermingled with navigation and orientation of the forest. Movements assembled into macro and micro scales of human and nonhuman movements.

I began trying to trace the movements that were occurring on the forest ground, finding ways to record the different elevations, shifts, and adjustments that the textures and layers of the undergrowth as I walked through it. To start with I used flagging tape, which is a bright coloured

plastic tape commonly used in land surveying and construction. I tied the flagging tape to sticks, trees, and various forms that appeared prominent in the forest landscape around a walking path. For the first week I took photographs and measurements of the tape, trying to coordinate an area between the tape markers, the differences in elevation, and to see if any of the forms had shifted. I created a series of collages on graph paper (Figures 3 and 4) that contained a sketch of the visual landscape I witnessed (the perspective sketches in pen) and the approximation of the ground's topography that I was standing on (cut out sections of the flagging tape were later affixed to the collage). [3]

[3] It is important to note that the graph paper used was produced in the nearby town from local forestry sources – the same trees that were growing in this very forest.

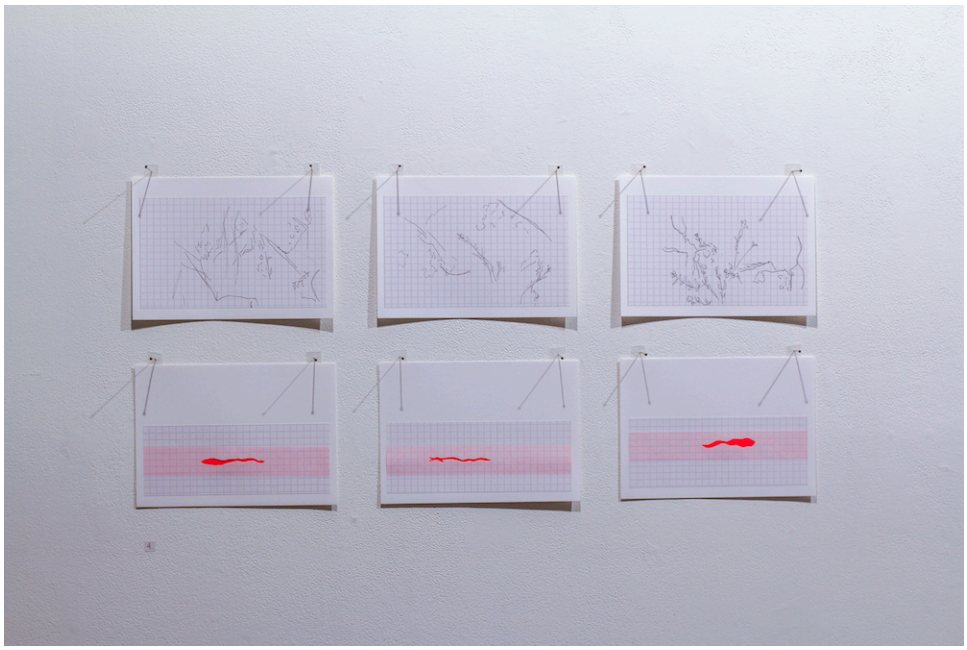

Fig. 3 Sketches and extracts of flagging tape arranged to visualise the topography.

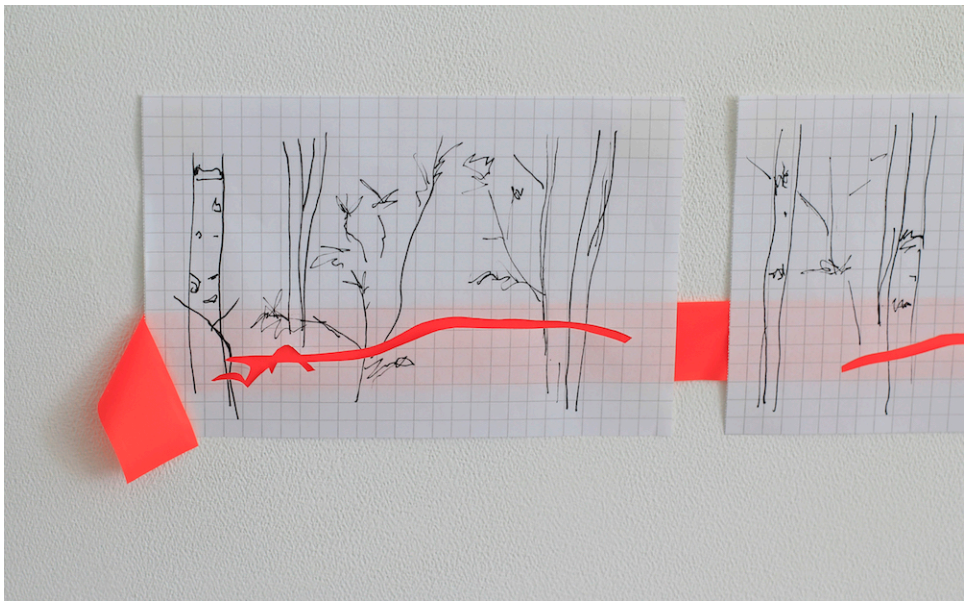

Fig. 4 Sketch on graph paper, the topography of the ground removed, and the flagging tape to highlight the difference.

In addition to these diagrammatic sketches, measurements, and collages, I had hoped that I would start to see evidence of the tape moving or being moved by walkers along the track. To my dismay, the tape I had tied around trees and rocks did not appear to identify any movements during the first

week. However, the flagging tape that was affixed to loose branches and grass did move significantly. The grass had grown, sticks had been trampled on by walkers in the forest, shifting the tape's position. These were movements on a different scale of action to what I had initially been expecting or looking for. The micro movements were rendered visible as things grew, decayed, or shifted position and size. On a daily basis, the movements were virtually imperceptible to me, but over a longer duration of several days, the movements began to emerge in larger increments: several millimetres turned into centimetres, and traces of weather patterns became points of contrast to the previous photographs, sketches, and notes I had made of that site.

Selecting a two-meter section of track that was a main entry to the forest network from our backyard, I laid out surveying tape in a relatively straight line along the ground. I left it for three days (Figure 5).

Fig. 5 Flagging tape laid along the track. Over three days it curled up and moved from a previously straight line.

The intention was to allow the movements that were occurring on, around, and over the walking path to surface. It was not to count the number of times that the track had been walked over, or to identify what kinds of actions had occurred on that specific site. Instead, my hope was that the flagging tape, being a relatively lightweight, flexible material, would re-act to movements that occurred in the site. During the three days the weather had been relatively calm, dry, and sunny, and to my knowledge several people had walked along that stretch of path through the forest. On the third day I returned to the site to find that the flagging tape had curled up in some sections, doubled over itself, and leaves and debris had scattered over it (Figures 6 and 7).

Fig. 6 An extract from a time-lapse video of walking along the track.

Fig. 7 Close up of the debris that had fallen or had been shifted over the flagging tape.

Movements from humans and nonhumans, both material and immaterial, were rendered perceptible by their intra-actions with the flagging tape. Various actions of tangling, shifting, settling, readjusting, and composting were happening in a variety of directions and from a range of influences. Leaves and branches from above had fallen down, footsteps pressed into it, and grass and moss had grown from below. The technique of laying out flagging tape provided measurements of alternative scales of movement. These were movements beyond the usual human temporal perception, such as the durational changes in the site over a three-day period, or the immaterial actors such as wind, temperature, or the abscission of leaves from the trees above. In this manner, the flagging tape becomes a more-than-representational mode of measure, in which the material is neither a prop nor a tool "but part and parcel of hybrid assemblages" that compose "relational

agency" (Vannini 18). The tape at once draws our attention to different scales of movement, but also forges new aesthetic and material relationships to movement. It is an example of a material being "more force than form" (Manning 95), where the excess of its potentiality, its capacity to be moved and move with other actors, has come to the surface. My attention had been drawn to the movements that were beyond the temporality and scale I was accustomed to noticing while I walked. The perspective of the walking tracks in the forest readjusted to a broader scale that included both micro and macro movements from human and nonhuman actors.

Site 2: Yeronga Park, Brisbane, Australia

Yeronga Park is an urban park in the sub-tropical city of Brisbane, Australia. The park space includes scrub and manicured gardens, bird colonies, barbeques, play equipment, a war memorial, and an off-leash dog area. The park's perimeter is straddled by several sporting clubs, a school, and a main arterial road. The park assembles a variety of users and provides a space for many forms of mobility in the local community (Figure 8). It is also my local park which I visit several times a week, for leisurely walks with my dog.

Fig. 8 The main thoroughfare path in Yeronga Park.

After returning from Finland, I found the contrasts of European forest to Australian urban bushlands striking. Yet the way I felt myself moving through these green, outdoor spaces felt similar. Different terrain and climate, but a similar sense of a purposeful outdoor experience where the sensations I experienced invited a much broader sense of co-habitation and movement in each space.

Expanding on the surveys of the macro and micro movements in the Finnish forests, I laid flagging tape over footpath areas in the park. The intention was to capture the movements in the park. However, what became evident was that there were many different walking paths and tracks through the park, some through the designated footpaths and roads, and others were more ad-

hoc, cutting through the scrub or garden areas. To try to identify and map out these informal paths, I began recording the GPS coordinates of these sites in at daily intervals. Using the GPS on my mobile phone (which uses the cellular network and satellites) and the built-in GPS in my digital camera, I recorded the coordinates of where I was standing. Although these consumer GPS devices are known to have a margin of twenty metres of accuracy, I was interested in how my understanding of the park, its terrain, position, and location fitted within the more formalised representation of global spatialised measure (Figures 9 and 10).

Fig. 9 Measuring GPS coordinates.

Fig. 10 Recording GPS coordinates of pre-designated markers in the park (metric distances on signage between other landmarks).

In addition, I set up a theodolite – a land surveying device that measures angles on horizontal and vertical planes – to calculate distances between the locations, whose GPS coordinates I was recording (see Figures 11 and 12).

Coordinating the numbers became a process of feeling myself adjusting to the site in various ways. Each day the GPS coordinates would be out of sync, slightly off the previous day's coordinates. Was I standing in a different position? Were the cellular networks that assist my phone's GPS calculations intermittent in locating the site as they triangulated the coordination across the nearby cellular towers and networks? My use of flagging tape to secure a site, to designate a specific position or location, was, similarly, based on movements that went beyond my individual control: grass would shift the tape, people's footsteps, wind blowing, birds attracted to the bright colour of the plastic tape, all became intra-actions that shifted the seemingly "fixed" position of each site.

Fig. 11 Measuring the elevation and direction of walking tracks through the scrub.

Fig. 12 View through the theodolite (left); using a theodolite to calculate distances between formal pathways and walking tracks through the scrub (right).

By recording GPS coordinates on a daily basis, along with the tracking of movements that the flagging tape on the walking paths responded to, I was able to triangulate positions: my location, the park's location, and various

intra-actions were rendered visible through the movement of the flagging tape. Experiencing a place by trying to measure and calculate (or approximate, which was mostly the case for my own recordings) is quite different from the way we might experience the same place when we walk or otherwise move through it. Timothy Morton describes the disorientation of knowing and sensing a place, involving a delicate negotiation of an individual's perspective and global anthropocentric systems. He suggests, "Place doesn't stay still, but bends and twists … When you are near your destination you can sometimes feel disoriented. You may enhance the magnification on Google Maps to make sure you are really there" (Morton 23). Shifting between global movements of satellites and cellular networks, and the local movements of people, weather, birds, and trees becomes a way of oscillating perspectives and scales.

As different temporalities are depicted and the multiplicity of movements that are beyond an individual's experience become discernible, alternative perspectives of the park space are revealed. While the photographs capture and document the movements of humans walking through the park – as people move over, on, and around the paths – the GPS data and coordinates survey a different measure of movement: one that traverses larger spatial references and measurement systems.

Measuring local-global movements

Surveying is a practice that has a long history of "paving the way" for development by mapping out the features in a landscape that need to be altered, paved over, re-routed, or decimated. Instead of using surveying technologies and apparatuses to create formalised measures that fit within established systems of reference, these creative fieldwork experiments offer alternative ways of measuring, identifying, and noticing the movements that are already occurring in each site. Appropriating surveying techniques to identify and include movements that are beyond human scale or perception, is one way of how we might conceive and measure our movements in local environments.

In Finland, the movements in the site interact with the flagging tape, repositioning it from its usual employment as a brightly coloured material that designates or marks off specific measurements, and instead adapts it to other scales of attention and movement. The materiality of the tape becomes a diagram that traces previous intra-actions, while having the capacity to adapt into future reconfigurations and movements. Tracing the relationships across actions and actors, the flagging tape is diagrammatic in its ability to track "forces or particular features which are taken up by relations" (Deleuze 172). The displacement of the flagging tape – from its original position laid out in a flat line on the ground to its twisted and entangled configuration three days later – draws our attention to the micro movements that were initially beyond human perception. In Yeronga Park, Australia, the flagging tape is used to appropriate land surveying practices and coordinates movements in unexpected ways that defy representation and offer new approaches for sensing movement across scales. It shifts the practice of

surveying beyond a data collection technique that employs Euclidian precision or representational visualisations. Instead, the intra-actions across an array of actors within the site have an opportunity to manifest in a tangible and perceptible manner, to inform, flex, and create perceivable movements.

These artistic interventions across fieldwork, cartographic surveys, and creative practice all circle around attuning to movements beyond the human in a variety of ways. The broad acknowledgement across academic disciplines that human action has instigated drastic shifts in geological and ecological systems requires that we rethink our relationship and impact of how our individual actions feed into larger Earth systems and socio-cultural practices (Gibson, Rose and Fincher; Latour). Conceptualising individual (human) movements within local and global situations requires adaptive, transformative, and generative techniques that capture a wider range of experiences generated through movement (Adey et al; Latour; Urry). Whether these movements are in one's daily walk in the local park, or in the unfamiliar ramble in a forest far from home, or the global rotations of satellites and data being sent and received almost instantaneously across sites, there is value in finding techniques to measure, attune, and adapt movements to situate oneself. Creative arts practices offer ways to draw attention across scales, materials, situations, and experiences, generating new inquiries into the understanding of local communities, daily practices, and the meanings imbued in everyday life.

The dialectics of nature-culture and human-nonhuman that many of the foundational Land Artists brought into question through their site-based interventions highlights the complexity of human action, such as walking, and the relationships that are formed and reformed through movement. Decades later, an individual's movements are woven into multi-scalar assemblages that influence how and where we move through technological and mediated mapping and surveying systems. Conceiving of the daily walk through the forest as an isolated, enriching experience neglects the broader implications of human impact on "natural" areas, whether this is in development, tourism, or conservation actions. Human movement, of any kind, is a geological force that is usually so abstracted that it comes "in and out of phase with human temporality" (Morton 19). Creative techniques that harness oscillations of scales draw attention to, if only momentarily, the many movements that we are part of. As Nigel Thrift reminds us, "Actors continually change size. A multiplicity of 'scales' is always present in interactions" (17). Thrift's comments imply that we too need to be adaptable and alternate across a range of sites, situations, and scales.

Examining how movements feed into wide networks of technologies, cultures, materials, and ideals necessitates transversal practices where individual human action might be momentarily overturned in favour of collective more-than-human experiences (Braidotti; Latour). In this context of walking and moving through forests and parks, transversality might be a technique for surveying the sensations and experiencing movements that are beyond individual intention and perception. It is important to acknowledge

that walking activities are part of and bound to diverse communities of actors and cohabitation practices.

It is not as simple as acknowledging the agency of nonhuman actors present, but rather, the challenge becomes what techniques are capable of surveying the actions that are already occurring in these spaces. Creative actions that foreground more-than-human encounters and shift perceptions across macro-micro and local-global scales are needed to mobilise and reconceptualise communal life in the Anthropocene. Although I run the risk of "over-animating" everyday walking experiences, there is value in exploring creative ways to move across scales of intra-action. Being attentive to the environments we are moving through has implications for leisure activities, tourism, development, and countless other activities that merge local and global concerns. Walking practices are a prime example of how human action fits into broader ecologies of movement, rather than the other way around. The paths that are laid out for pedestrian movement are always part of communal movements that can accommodate, but do not necessarily require, human presence. This notion of a diverse community requires further understanding of the vibrancy of human and nonhuman intra-actions that are always already occurring around and with us. Creative surveying, as a re-active and transversal practice, is one example of how experiences can skew our perception of scale and individuality, and reposition us within broader assemblages of more-than-human movements.

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