How well equipped are geographers to understand and experiment with atmospheres?

For Manning, 'a technique is a technology composed with, for and through' an atmospheric body. Technique is invention, composition, relation (Manning, 2009, 56). This essay fundamentally gathers around a series of techniques and technologies for experimenting with atmospheres and atmospheric experience. Moving toward the proposition - how well equipped are geographers to understand and experiment with atmospheres? - I take technique loosely to refer to both a material sensibility and scaffold. In this sense, a building or architecture is as much a technique for thinking atmospherically as a balloon or barometer or indeed an 'airy poetics' (Engelmann, 2014), a speculative curiosity performed through the body toward the potential and proposition of the atmosphere, the 'solidifying and melting edges between people, regions and events' (McCormack and Engelmann, 2014).

Gathering together a diverse ethico-aesthetic terrain or atmospherics of geographical research, this essay holds-together like a series of string balloons. I exemplify through a series of event-spaces - what McCormack (2014) terms 'circumstantial gatherings' and 'experimental spherifications' - the opportunities and potential for geographers to understand and experiment with atmospheres. Here, I use "opportunity" and "potential" - both in their future-tending senses - not to suggest that geography lies or lags before an untrammeled horizon of potentiality but rather that thinking and experimenting with atmospheres is an ongoing and processual atmospherics in itself: of volatile collectives and partial envelopments 'enclosing and opening along a skin and surface that is both a boundary and a zone of generative exchange' (McCormack, 2014). In this sense, this essay holds an openly 'affirmative disposition' (Whitehead, 1967) toward the proposition: how well equipped are geographers to understand and experiment with atmospheres. Geography and geographers I suggest are in rude, atmospheric health and there is vast potential for further articulation and refinement of techniques and praxes composed with, for and through bodies experimenting atmospheres.

Primarily, this essay opens out toward the restless ontology of 'atmosphere'. Here, I draw on McCormack's loose definition of atmosphere as simultaneously meteorological and affective: as a constellation of affects, virtualities and thresholds of potential restlessly ventilating toward the real. This immanence or emergence of atmospheres then moves into a brief discussion of what Brennan (2004) terms the 'transmission of affect' : how atmospheres constellate and crystallize; condensing, environing, emanating and dissipating as faint spheres of envelopment and exposure around human and nonhuman bodies. Moving toward the platform of the balloon, the main body of this essay then gathers around a series of event-spaces, milieus in which geographical experiments are simultaneously becoming atmospheric and the atmosphere, becoming experimental. Here I explore affective atmospheres through the 'strange journeys' aloft of Salomon August Andrée in the early 20th Century (McCormack, 2008) and more recently Tomas Saraceno (Engelmann, 2014). Both utilise the balloon as a technique and device of experimental spherification and they trace the formation of subjectivity and experience as atmospheric: a constellatory, breathless composition in the present.

If both these milieus primarily explore the 'affective and aesthetic dimensions of *being in* and *witnessing* air and atmosphere' (Engelmann, 2014), the essay then moves toward the circumstantial gatherings of sensation, attention and

politics mobilized around the work of Peter Sloterdijk, Dryden Goodwin and Timothy Choy. Here, atmosphere that is simultaneously meteorological and affective is conceptualized further as a processual, distributed and sensed 'biopolitical infrastructure of modernity' (McCormack, 2015). Extending on McCormack's and Engelmann's notion of experience and the formation of subjectivity as atmospheric, these milieus explore the body as a constellation, an atmospheric thing 'immersed in a turbulent cloud of solicitations' (McCormack, 2014) and affects, some of which uplift and others weigh down, 'chafing like a heavy, aching body left too long in a chair' (Stewart, 2011). Experimenting with atmospheres in this respect draws out a series of ethical and political questions. Choy (2011) and Adey (2013), for instance, explore the mega-city as a topology of difference and an experimental milieu for atmospheric politics, wherein different degrees of envelopment and exposure to the 'hardness and softness of atmospheres' (Serres, cited in Connor, 2009) are mediated and modulated by State, proto-State and State-like constellations, in other words by bodies discursively organized by race, gender, wealth and so on with differential capacities to affect and be affected.

By brief excursion, I explore the mechanisms through which these atmospheric 'topologies of difference' are mediated, what Allen (2006) terms 'ambient power', Adey (2014) an 'atmospheric security dispotif' and Connolly (2005), the 'resonance machine' through which atmospheres of expectancy, hope, fear, wonder and terror are conditioned. Finally then, the lines of this essay gather loosely around a reiteration of the conceptual and ontological vagueness of atmosphere. There is a danger, as Bissell (2010) writes, in framing atmosphere as meteorological and affective, of a blue-sky logic, of representing or more so, holding in reified representation the atmosphere as a thing, "up-there". Rather, an atmosphere - as a constellation, or shared crystallisation of affects between bodies (human and non-human) - is as much an elemental, and restless ontogenerative dimension of the architectural milieu of the everyday as it is of the sky. Atmospheres as such less belong than *become* transitively in an infinite series of event-spaces. An atmosphere, as Engelmann writes, 'emanates, circulates and circumvents (Anderson, 2009) from sources of vibration (Bissell, 2010), bodies, gestures (Stewart, 2011) and perturbations (Ash, 2013) among other things.

For McCormack (2008), an atmosphere is simultaneously meteorological and affective. An atmosphere emerges as a constellation or 'shared crystallization of affects' (Anderson, 2009) that are always virtual (future-tending) and synesthetic (plural) (Massumi, 2001). An atmosphere in this sense is not a 'thing' (Bissell, 2010) but is thing-like, a dense entanglement of affection, attention, the senses and matter, a field of moving materiality that 'registers differentially in the perceptual affordances of sensing bodies' (Ingold, 2008 cited in McCormack, 2008). For Anderson (2009), atmospheres are relatively unstable, inwardly and externally 'radiating', yet with a propensity to envelop and press upon a body or collective. Atmospheres, he writes, 'carry us away in their buoyancy and lightness, or, conversely, they may sink us, drowning us with heaviness, lethargy or exhaustion.' McCormack (2008) traces the generative virtuality of an atmosphere, as a constellation of dynamic and kinetic affects, through the balloon. 'Aerostatic flight', he writes, 'can be understood simultaneously as a technology for moving through atmosphere in a meteorological sense and as an event generative, at least potentially, of atmospheres in an affective sense' (McCormack, 2008, 4).

The balloon in this sense tends toward the processual, ontological becoming of atmospheres. McCormack traces a porous line between atmosphere as sense experience and exposure and atmosphere as envelopment. In many senses, he

locates both on an immanent plane of co-emergence, the bodies and publics at ground-level for instance that gathered around and were 'exposed' to early aerostatic experiments were animated by the expectation of ascension, 'the ascent of a balloon [became] an affective vector of hope, fear, wonder, terror, amusement.' A constellatory atmosphere of expectancy would emerge like a haze around the balloon, a horizon of 'incommensurate elements hanging together in a compositional present' (Stewart, 2011). Dyson iterates the Spinozist cartography enveloped in these ground-level atmospheres wherein bodies experiment *with* as much as experiment *in* the generative milieu. As Anderson (2009) writes, atmosphere is a class, or crystallization of experience that 'occurs before and alongside the formation of subjectivity, across human and non-human materialities, and in between subject and object distinctions.'

Returning to Salomon Andrée's balloon aloft, McCormack then identifies this crystallizing of atmospheric experience alongside the formation of subjectivity as a dense, porous entanglement of affection, attention, the senses and matter. To adapt slightly on Massumi:

> 'All the goings-on and passings-by (subtle changes, transformations in altitude, temperature, direction and precipitation) around the balloon constitute an aggregate of relation: a sea, [an atmosphere] of movements, each of which has a potential effect on the body, capable of modulating which determinate threads are pulled from the relational continuum it carries (Massumi, 2001, 98)

These threads of intensity pulled from the relational matrices of the body are furthermore 'registered - actually - as felt variations of pressure, density and buoyancy' (McCormack, 2008) within a durational envelope of atmosphere, of which the body is not separate but constitutively implicated. In other words, experimenting atmospherically and 'thinking through air as something embodied and bodies as loci of atmospheric density means that bodies become aerostats, gusts of wind, enveloped hydrogen, circulating materials (Engelmann, 2014). The ways in which variations of pressure, density and buoyancy are thus sensed is through an 'atmospheric attunement' or expression of singularities that enter into virtual conjunction with an envelope of atmosphere, what Goodwin terms a 'bipolar intimacy, a canal filled with endless double echo games', points of melting, of boiling, of condensation and coagulation.

For the artist and architect, Tomas Saraceno, a balloon is therefore as much an aesthetic device as it is a political one. Saraceno locates the solar balloon as a technique for experimenting with 'envelopes of aerial and atmospheric experience that generate different possibilities for bodies to relate to, and to become exposed to, other bodies and their shared actions.' As a gesture to the future, McCormack and Engelmann (2014) write, 'the proposition of becoming-solar imagines a partial untethering of society from the extractive logics of grounded territory.' Generating an atmosphere in the meteorological and affective sense, Saraceno constructs models for "cloud cities:" structures that resemble bubbles, neurological synapses and spider webs, and would float nomadically above Earth's surface. These structures emerge as an atmospheric experiment, reorganizing the sensible, moving toward what Engelmann calls an 'airy poetics', a concerted shift 'from an affective logic of linear "flows" to one in which affect condenses, environs, ventilates and dissipates around human and nonhuman bodies and objects.'

If the balloon, in Saraceno's and Andrée's atmospheric experiments, is a technique for becoming lighter-than-air, for generating atmospheres, or constellations of uplift, positive affect - love, laughter, dreams, imaginaries - then the atmospheric experiments of Sloterdijk, Goodwin and Choy move toward the inverse, affects that constellate into atmospheres that may sink, drown, depress bodies with heaviness, lethargy and exhaustion. For Anderson, affective atmospheres are fundamental to political mobilization, both in and beyond environmentalist spheres. In *Ecologies of Comparison*, Choy (2011) explores how atmosphere emerges as a biopolitical infrastructure of modernity, as simultaneously a meteorological and affective fact. Drawing together an atmospheric account of the urban ecology of Hong Kong, Choy writes of the breathlessness, pneumonia, lung disease and immobility that weigh down and envelop atmospheric bodies. Choy's ethico-aesthetic concern is with the 'solidifying and melting edges between people, regions and events', how breathers become immersed in a turbulent cloud of solicitations and of pollution as both condition and effect of capital. 'We burn in making', he writes,

> we burn in consuming, we burn in discarding [...] the atmosphere is coupled with Hong Kong's industries [...] the smokestacks of industrial factories making goods and the cargo ships moving freight; the carbon footprints of the jets and taxis moving finance workers; the mark on the air from the coal and gas burning power plants that send electricity to Hong Kong's skyline and to the electronics shops, bursting with gleaming toys to be bought and powered with leisure money or credit [...] the combustion at the end of life cycles, where discarded things are incinerated.

Choy's aesthetic milieu in this sense is an attempt at an experimental spherification of capitalism's atmospheres and, what Connolly terms, the 'resonance machine', whereby 'motivations and sentiments whirl in a "hurricane out of heretofore loosely associated elements." These loosely associated elements are the factories and cargo ships, the jets and taxis, financial bodies, bodies of coal, gas-burning bodies enveloped in an atmosphere that is simultaneously affective and meteorological, that generates 'resonance-bound dispositions, a direction of passions amplified and fomented, installed in [bodies'] soft tissues of affect, emotion, habit, and posture as well as the upper reaches of the intellect' and interlooping, 'back and forth in a large political machine, with each constituency helping to crystallize, amplify and legitimize the dispositions of the whole' (Connolly, 2005, 873). For Allen (2006) then, a resonance machine animates a sort of ambient power, an environmentality that operates to modulate and mediate all kinds of atmospheric bodies and their pollutants through subtle forms of invitation, coercion and seduction.

A mode of atmospheric security, or generating secure atmospheres (Adey, 2014), ambient power shapes and guides affects, feelings and behaviour by working at the surface-skin of bodies through the interfaces[1] of architectural[2], ergonomic, visual and proprioceptive cues. As equally then, Sloterdijk draws out these forms of atmospheric security in a globally performed topology of difference in which security in one milieu is produced through the insecuritizing of

---

[1] This isn't the clanking industrial city that led sociologists to emphasize distraction, nor the media monoculture that led to situationist critiques of spectacle, nor the all-seeing Orwellian state that people assume must be the outcome of unchecked mediation. Today's embodiments of information have become something far, far more chaotic, often quite culturally fertile, with ever more subtle cognitive appeal. The twenty first century arts are the arts of interface (McCullough, 2011)

[2] 'Architecture encloses air, conditions it, conditions attitudes in an embodied perception, movement experienced within lower neural pathways (Zumthor, 2009)

another. As such, for instance, differential exposure to atmospheric envelopes of violence play out through a distributed atmosphere of drone warfare, wherein subjects are unwittingly and unwilling weighed-in, immersed like in Choy's Hong Kong resonance-machine into atmospheric experiences of life and death. Jackson and Fannin (2011) produce an experimental spherification of this energetic ecology when they write of a topological aerography constituted by a 'storm of plastic and metals, resource wars, parts commodity chains, visual infrastructures, military installations... silence and height, absent presence, GIS, video affects, guilt and rationalised culpability, and so on, ... statistics, affect, consumption, touch, fossil fuels, video' (Jackson and Fannin, 2011). In many senses then ambient power diffracts, sensuously machining, saturating and segmenting atmospheres into differential and circumstantial gatherings or envelopes of atmospheric experience, whether constelled by love, laughter or death. An atmospheric security in this sense balloons toward the solidifying and melting edges between people, regions and events.

This essay has explored the proposition - how well equipped are geographers to understand and experiment with atmospheres? - through a series of loose gatherings, 'experimental spherifications' that both exemplify and invite the realised and potential avenues for atmospheric, geographical research. Throughout, I have tended toward holding an openly 'affirmative disposition' (Whitehead, 1967) toward the proposition. Geography and geographers I suggest are in rude, atmospheric health and there is vast potential in this respect for further articulation, amplification and refinement of techniques and praxes composed with, for and through bodies experimenting atmospheres. Extending on the notion of atmospheric experience and the formation of subjectivity as atmospheric, this essay has diagrammed the body as a constellation, an atmospheric thing 'immersed in a turbulent cloud of solicitations' (McCormack, 2014) and affects, some of which uplift and others weigh down, 'chafing like a heavy, aching body left too long in a chair' (Stewart, 2011). In many respects, this essay might be mapped as a strange sort of volumetric journey from the stratospheric edges of Andrée's and Saraceno's balloons - the dreams, imaginaries and atmospheres of uplift - toward the weighty haze of security, the interface and political machines.

Atmospheres in this sense constellate and crystallize. Through an infinite series of event-spaces, they condense, environ, emanate and dissipate as faint or thick spheres of envelopment and exposure around human and nonhuman bodies. As Stewart lyrically writes, 'atmospheric life as we know it is: the collective saturation of the senses, the voracious productivity of the marketing industry, the hard-edged, caste-like quality of relations of race, class, gender and violence, the seamless sprawl of the built environment, the chronotypical transformations of time and space, and so on.' Yet equally, atmospheres are always in excess of the weight of technologies that seek to capture and contain them. In this sense then, this essay returns aloft, opening out toward what Whatmore terms, an 'onto-politics'. To conclude, openly, affirmatively: if the generation of bodily experience and subjectivity is atmospheric then thinking and experimenting with atmospheres emerges as a sort of "life design", a 'redistribution of the sensible' (Massumi, 2001). Circumstantial gatherings of atmosphere in this sense are proliferative compositions: of security and violence yes but also the dreams, journeys and other worldings that respire and perspire at the threshold to the real. Like a series of balloons looping and letting onto mutant universes of reference, these resonance machines operate by a different logic, 'inventing novel chaoid virtualities, populating new cities in the clouds' (Weissman, 2013).

BIBLIOGRAPHY

Adey, P., et al (2013). "Pour votre tranquillité': Ambiance, atmosphere, and surveillance", Geoforum, 49: 299-309.

Anderson, B. (2009). "Affective atmospheres", Emotion, Space and Society, 2 (2): 77-81.

Ash, J. (2013). "Rethinking affective atmospheres: technology, perturbation and space times of the non-human", Geoforum, forthcoming

Brennan, T. (2004). "Introduction" The Transmission of Affect. Cornell University Press

Engelmann, S. (2014) Toward a Poetics of Air: Sequencing and Surfacing Breath

McCormack, D. P. (2008). Engineering affective atmospheres on the moving geographies of the 1897 Andrée expedition. Cultural geographies, 15(4), 413-430.

McCormack, D. and Engelmann, S. (2014) "Becoming Solar" in A Lighter-than-Air Monument for the Anthropocene

(Tomás Saraceno and Sasha Engelmann, eds.) Pour un Monument à l'Anthropocène, exhibition at Les Abattoirs,

Toulouse, 10/2014 – 01/2015.

McCullough, M. (2013). Ambient Commons: Attention in the Age of Embodied Information. Cambridge, MA: MIT Press

Stewart, K. (2011). "Atmospheric Attunements", Environment and Planning D: Society and Space 29 (3): 445 – 453

Turner, F. (2014). "Revisiting the Pepsi Pavilion and the politics of Cold War Multimedia". The Velvet Light Trap, 73

Adey, P. (2013). "Air/Atmospheres of the Megacity", Theory, Culture & Society, 30 (7-8): 291-308.

Adey, P. (2014). Security atmospheres or the crystallisation of worlds. Environment and Planning D: Society and Space, 32, 834-851.

Allen, J. (2006). "Ambient power: Berlin's Potsdamer Platz and the seductive logic of public spaces". Urban Studies, 43 (2): 441–455.

Sloterdijk, P. (2005). "Atmospheric Politics." Latour and Weisel (ed.). Making things public. 944-951

Weissman, J (2013) Clouds. Fractal Ontology

Zumthor, P., & Galbraith, I. (2006). Atmospheres: architectural environments, surrounding objects. Birkhäuser.