Sydney College of the Arts
The University of Sydney

Doctor of Philosophy Thesis

Intangible Architecture
by
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June 2010

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Abstract

Might we think of air as an unyielding substance, a dull weight that impresses itself upon our bodies, extending a constant and infinite pressure on the minute topographies of our skins? What then of our motion within space, our eternal struggle to create a space for ourselves in the quicksand-air which is immediately closed over even before space was created? And of the opposite condition, the thin and mountainous air of dissolution, in which trails and tracks through space bleed immediately into nothingness; diluted and dissolved by a great mass of ever-dwindling air? At the core, air must be the most essential of all architectural materials in terms of how our bodies inhabit and move through space. This seemingly absent, invisible substance is fundamental to architectural space; it exists around the body and penetrates the body, and responds to our every movement.

Through a consideration of air as the primary substance of architectural space, this practice-led research explores how architecture itself may be reassembled in terms of the invisible condensations, stratifications, and undulations of air. Drawing on my own practice as well as a range of other art and architecture practices, the research considers how air responds to human gesture and movement through a series of practices investigating the relationship between air, body and motion in architectural space. Diverging from the conventional understanding of space as static interval, architectural space emerges as a turbulent and highly charged environment in which human movement and its consequences take precedence over built materiality. This 'intangible architecture' – an invisible architecture of the air that relies wholly upon reading absence over presence and disturbance over inertia – points to a new way of understanding architectural space and the way we move within it.

Preface

Char Dham Yatra

In 2003 I travelled to India to visit a series of temples marking the sources of the Ganges and Yamuna rivers. The journey took me high into the Garhwal Himalaya on a traditional Hindu pilgrim route called the *Char Dham Yatra* (Four Pillars Pilgrimage). The pilgrimage links the four high altitude sources of the four sacred rivers of Hinduism in the Garhwal Himalaya; the Yamuna at Yamunotri (3185m), the Bhagirathi at Gamukh (3892m), the Mandakini at Kedarnath (3584m) and the Alaknanda at Badrinath (3096m). The walk is an ordered sequence of ascents and descents to four temples marking the sources of each river. The temples are typically located some way downstream from the actual glacial sources, and are only accessible for six months each year. Prior to the 1960s pilgrims walked continuously for two months to visit each temple on a high altitude route across the top of the mountains. Today, each mountain is linked by precarious roads clinging to unstable slopes further down the mountains. Pilgrims arrive at the roadhead in vehicles and then disembark to walk up to 40km uphill to the temples and glaciers, and then back to the vehicle before driving on to the next roadhead.

01 | *Char Dham Walk* | Enroute to Gamukh | 2003

My journey materialised rationally enough from an interest in the 'essential' architecture of traditional Hindu pilgrim routes, notably the *dharamsala* (pilgrim rest house).[1] The *dharamsala* is an example of the minimal architectural forms built periodically along major pilgrim routes for the sole purpose of sheltering the body after a long day of walking in the mountains. The architecture itself was generally improvised

02 | *Char Dham Walk* | Enroute to Kedarnath | 2003

[1] I refer here to the minimalist ethos rephrased by Claudio Silvestrin as 'essentiality'. Travel to India for the purpose of investigating the *dharamsala* was part of an independent research project funded by the University of Adelaide's Kenneth and Hazel Milne Travelling Scholarship. This text does not go into detail about *dharamsalas* or the architecture of pilgrim routes in India, but rather picks up on architectural thoughts that find their origins in that journey.

03 | *Char Dham Walk* | Enroute to Yamunotri | 2003

04 | *Char Dham Walk* | Enroute to Gamukh | 2003

05 | *Char Dham Walk* | Enroute to Gamukh | 2003

from whatever could be found in the local area, and as such demanded a departure from preoccupation with its physical condition. Instead, the focus of the architecture became its topographical, spiritual and temporal context – a shelter on the pilgrim route – an architecture for walkers.

Walking the *Char Dham Yatra* over the course of a month, I came to realise that on a pilgrimage it is not possible to distinguish inside from outside, or stillness from motion. Through the act of walking – not just a short stroll, but days and days of long, demanding walks in thin air – a new sense of space began to emerge within the cycles of days walking on the path and nights resting in the shelters. The architecture of the pilgrim route, I realised, was not confined to the material structures along the way, but rather the journey itself was a kind of architecture – a complex system of spatio-temporal connectivity that incorporated air, body, passage, shelter. The architecture of the pilgrimage could not be separated from the walking body, just as the body could not be separated from the act of walking – therefore, the architecture of pilgrimage became a new way of thinking about architecture itself. I stopped thinking in terms of material realities, and of structures that are built or not built, and the respective qualities of those. Instead, I began thinking in terms of a body moving through air creating 'architecture' through its movement. I began thinking of architecture as a consequence of human movement – so despite my very best intentions, the architecture of the pilgrim route was not related to building at all, but rather, to the repetitious bodily gesture of walking in air.[2]

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[2] Walking in this context is considered as an integral part of a religious or spiritual journey, thereby shifting it from convenient mode of transport to a carefully orchestrated bodily movement within a ritual context. Throughout this research, when I speak of walking I speak of a ritual act that includes all walks without particular thought of destination – a pilgrimage as much as the act of going for a walk.

As such, this research carries within it from the outset a fundamental assumption that there is a connection between air, walking and architecture, insofar as the practices of walking and architecture are concerned with space and body and the air that sustains them. Indeed, in itself, the repetitious action of walking became a site for a consideration of architectural space – a surprising and contemplative space opened up in the long hours of ascent and descent. In a recent text that invited further investigation into this relationship between architecture and walking, Jane Rendell proposed walking as an architectural design method:

> Walking provides a way of understanding sites in flux in a manner that questions the logic of measuring, surveying and drawing a location from a series of fixed and static viewpoints. When we walk we encounter sites in motion and in relationship to one another, suggesting that things seem different depending on whether we are 'coming to' or 'going from'. Rather than proceed from the observational, to the analytic, to the propositional, by intervening and moving through a site, walking proposes a design method that enables one to imagine beyond the present condition without freezing possibility into form.[3]

This research engages the imagination of which Rendell speaks. It conceptualises a form of architecture uncommitted to a visible, tangible materiality and explores an evolving, impermanent and invisible architecture drawn wholly from the body moving in air-filled space. It is not an architectural design method, nor an architectural proposition – rather, it is a philosophical meditation on architectural space spawned from many long hours of practice. This text will move through a sequence of related themes – Crossing, which contextualises an attitude

06 | *Char Dham Walk* | Enroute to Gamukh | 2003

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[3] Jane Rendell, *Art and Architecture: A Place Between*, (London and New York: I B Tauris, 2006), 188.

to architectural space, and gives rise to the research questions; Air, which considers the role that air plays in architectural space; Invisibility, which draws in a range of approaches to tracing bodies in architectural space; Walk, which looks at the production of space through the body in motion and Wake, which draws these ideas together to propose an intangible architecture of the air.

Part One : Crossing

Disquiet

This research is concerned with the relationship between the moving body and the air that constitutes architectural space. There is, as both Helen Mallinson and Monica Bakke establish, scant literature concerning air and its relationship with architecture in conceptual and philosophical terms.[4] One work, however, does address it directly – Luce Irigaray's *Forgetting of Air*. In this text, Irigaray considers possible re-readings of Heidegger's thoughts in relation to architectural space through the simple exchange of solidity for fluidity, of earth for air. Through this fundamental yet ultimately radical exchange, Irigaray reveals the extent to which the fluid air, and all it represents, is forgotten in both the practice and the inhabitation of architecture. So let us engage Irigaray's critical portrait of architecture:

> Indefinite stretch of air, in every direction equivalent, and no area of which is ranked over others... Stretch of air that he [man] must define and redefine in order to inhabit? Thus clearing space that exists already, removing from it its resources of air so as to set up a liveable dwelling there. Creating spacing in space, creating rarity in space – space built to the measure of his finitude, out of his will to master the superabundance of nature. Creating emptiness so as to prevail over an emptiness which was not.[5]

Here, Irigaray proposes the air as habitable space. The proposal is exciting because it appears as a novel idea in a world preoccupied with visibility, yet it is simultaneously confounding because our inhabitation

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[4] See Helen Mallinson, 'Metaphors of Experience: the Voice of Air', in *The Philosophical Forum*, Volume XXXV, No. 2, (Summer 2004) and Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, (Maastricht: Jan van Eyck Academie), 2006. There is obviously a lot of technical literature that relates air/architecture, but it is not necessarily philosophical/conceptual in nature.

[5] Luce Irigaray, *The Forgetting of Air in Martin Heidegger*, trans. Mary Beth Mader, (London: The Athlone Press), 1999, 165.

of air is so obviously already the case. The air is all around us. It is both within us and beyond us and as such is clearly inhabited – but aside from discussion around the technical aspects of climate control, we speak of the air as habitable space so infrequently that we might believe it to be a mute and insignificant part of architectural space. This forgetting of air is problematic for architecture, because it discounts not only the physical reality of space and its actual substance, but the subtleties of architectural space and of dwelling that might reside in the non-visible. Our forgetting of air forces a focus on that which is visible, and precludes a relationship between body and space that encompasses physical, psychological, emotional and even spiritual territories. In Helen Mallinson's words, "the air moves: it moves us, we move in it."[6]

The air is fluid, in constant exchange between body and world, always simultaneously within and around the body. It is a physical substance with its own integrity, structure and behaviour, and it sustains us in the most crucial manner. Our bodies cannot function without air – it is so clearly our primary habitable space – and yet, as Irigaray articulates, we unwittingly subscribe to the impossible task of separating ourselves from it. We endeavour to form space within space, subtracting one from the other, and to force an emptiness within that which was not empty. In these terms, architecture is at the core, an act of erasure – the creation of a vacuum free of the air that otherwise constitutes space. That act of erasure, of laying claim to a space through a process of clearing, is a less humble gesture than it may appear. Irigaray describes the air as an indeterminate volume, a diffuse and unquantifiable substance without edge that is everywhere all the time, an unknowable

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[6] Mallinson, 'Metaphors of Experience: the Voice of Air', 162.

abyss that references all that cannot be known or corralled. Space cleared of air is thus by inference also cleared of the abyss, any sense of fluidity and all that which is unknown, indeterminate or immeasurable.[7] As such, rather than the neutral space we might wish to regard through an act of clearing, what we actually have is a space already charged with the judgement that the empty, the blank, the quantifiable and the knowable is the best ground upon which to dwell – and thus the best ground upon which to make architecture. Irigaray argues,

> A ringable void, that he contains, and where he is situated, where he gathers for himself a vicinity. Where he makes himself be… where he traces himself a horizon, projects himself a world…as if the world were not already and it's up to him to create. Repeating, to his measure, that which already takes place so as to appropriate it for himself… land-clearing settlements that open up for and in him strata of availabilities that suit his needs and potentials… Sedimentations of insides/outsides, exteriors/interiors, and interspaces/settings such that air passages or envelopments are covered over.[8]

Here we engage with the space we have evacuated in the name of architecture. Enveloping ourselves with a material edge, we endeavour to seal our space and to make it airtight. We are, of course, driven by the need for shelter; we seek protection from the weather, as we must. Implicit within this search, however, is the darker psychological desire for protection from the abyss of the unknowable, from the things that were cleared *from here* and sent *out there*. Mallinson asks, "From what do we shelter? Do we hide from the air because we fear our own permeability, our open porous

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[7] For Irigaray, this also includes the feminine.

[8] Irigaray, *The Forgetting of Air in Martin Heidegger*, 165.

textures, our cracks and leaks; do we avoid the wind and its passions as a way to still our own emotive forces?" [9]

We build edges to separate ourselves from the natural world, to create a small territory within chaos where chaos does not impinge as much as elsewhere.[10] The ringable void, our empty place of dwelling, protects us from physical and psychological inundation – but in the process of making edges we also, inadvertently perhaps, confine ourselves and prohibit much direct sensory engagement with the world.[11] This space of confinement is motivated by a sense of acquisitiveness and possessiveness, and generated through alienated modes of production, strategies of mastery and domination, and an aggressively calculative rationality. It is object-orientated[12] and ultimately egotistical – in fact David Leatherbarrow suggests that architects always see the field around their bounded settings as background, like the darkness needed in the theatre to show up the performance.[13] Such confinement, however, fosters dualities such as interior/exterior, edge/void, here/there and makes little space for that which lies inbetween – the fluid spaces of the unknown, the indeterminate, and the immeasurable. A nameless fear of the unknown conspires to fuel the construction of edges, and our dwellings become solid

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[9] Mallinson, 'Metaphors of Experience: the Voice of Air', 177.

[10] Elizabeth Grosz, 'The Creative Urge', interview with Julie Copeland, ABC Radio National, 05.06.05, 11.05am, from www.abc.gov.au

[11] Drew Leder observes that Western society is typified by a particular 'disembodied' style of dwelling in which our shelters protect us from direct sensory engagement with the natural world. See Drew Leder, *The Absent Body*, (Chicago and London: University of Chicago Press), 1990, 3.

[12] David Michael Levin, *The Body's Recollection of Being: Phenomenological Psychology and the Deconstruction of Nihilism*, (London, Boston, Melbourne and Henley: Routledge and Kegan Paul), 1985, 339.

[13] David Leatherbarrow, 'Sitting in the City, or The Body in the World', in George Dodds and Robert Tavernor (eds.), *Body and Building: Essays on the Changing Relation of Body and Architecture*, (Cambridge, Massachusetts and London: MIT Press), 2002, 288.

places of boundary by which we feel safe from the possibility of loss – the physical loss of comfort, and the cerebral loss of certainty.[14]

Irigaray continues again:

> The breath flows poorly, the body moves with difficulty in these properties that are acquired one after the other. Flight-disappearance of the most divine, fettering-disappearance of the body beneath its numerous coatings, walled-in habitats where the meeting between beings presupposes ever more refined and rarefied systems of exchange.... who, in order to remember that he exists, sculptures his body... he has to represent it for himself in inert matter in order to recall what it/he looks like. He repeats it, gives it back to himself – dead.[15]

This multi-layered binding of the body within space reveals the making of architecture as a defensive process, and that architecture itself may be understood as an armature for our lived experience that is both physical and psychological.[16] With each act of compulsive clearing an edge is formed – a clear line between now and then, here and there, solid and fluid, knowable and unknowable. Inherent in these acts of clearing is the conviction that without a boundary, place would disperse, lose definition, or be condemned to continual movement.[17] That dispersion or leakage should prove calamitous to architecture is boldly challenged by Irigaray – indeed she contests that Western philosophy, from Aristotle to Heidegger, has thus far shown a complete inability to conceptualise the space of fluids and thus the inbetween, indeterminate

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[14] Joanne Faulkner, 'Amnesia at the Beginning of Time: Irigaray's reading of Heidegger in The Forgetting of Air', *Contretemps 2*, (May 2001), 135.

[15] Irigaray, *The Forgetting of Air in Martin Heidegger*, 165.

[16] Mallinson, 'Metaphors of Experience: the Voice of Air', 152.

[17] Joanne Faulkner, 'Amnesia at the Beginning of Time: Irigaray's reading of Heidegger in The Forgetting of Air', 136.

or passage states of dwelling.[18] For Irigaray, fluidity as a notion sits in stark contrast to Heideggerian notions of place because fluids, namely water and air, are necessarily ill-defined and slippery, they belong to no one place, and are able to freely move from one container to another or to rest as a contour-free puddle.[19] In this sense the air represents precisely what our ingrained spatial and philosophical sensibilities render illegitimate.

In the representation and conceptualisation of architectural space, the resistance to fluids and to fluid notions of space is also evident within the curious precedence of still bodies over moving bodies. Irigaray refers to our desire to immortalise ourselves through sculpture, the re-presentation of ourselves back to ourselves – not immortal, but cold, unthinking, stagnant – but in reality our inhabitation of space is wholly fluid and never static. And yet, mystifyingly, our architectural methodologies and representational tactics consistently tend towards silence and stagnation; our architectural journals are full of images of people-less buildings or worse, inert black-clad cardboard people-props in awkward postures with blank gazes. This passivity can be traced to the legacy of modernism and post-modernism in which the body is described again and again as a medical and sexual phenomenon that does not suffer under the elements or strain its muscles – it is a site of sensations, processes and desires rather than a source of action and production.[20] It cannot sense architectural space, much less produce it through its habitual inhabitation of space.

07 | *Deepwater Woolshed* | Stutchbury and Pape | 2004

08 | *Newmarket House* | Owen and Vokes | 2004

[18] For Irigaray, these are the spaces that are, at a most fundamental level, the spaces of the maternal, the fluid-filled space of the womb. She notes that we are all constituted in and through fluid, and that the absence of dialogue about such fluid-space is in effect a negation of the feminine.

[19] Faulkner, 'Amnesia at the Beginning of Time: Irigaray's reading of Heidegger in The Forgetting of Air', 137.

[20] Rebecca Solnit, *Wanderlust: A History of Walking*, (New York: Penguin, 2000), 28.

Research Questions

What if architects strove to put as much distance as possible between Irigaray's grim vision and a new idea of what constitutes architectural space? What if architectural space, both the process of making it and the rhythms of inhabiting it, were re-conceived as immersion, dissolution, uncertainty and intangibility rather than quantification, substantiation, edge? Would all sense of materiality vanish into air? What if we could understand architectural space as being eternal movement – constantly understood by the constantly moving body?

At the core of my response to Irigaray's vision is one very simple, very bold question that is consistently at the heart of this research: "How to think architecture differently? How to think in architecture, or of architecture, without conforming to the standard assumptions... between being and building?" [21]

And so the central concerns of this research can be distilled into a sequence of questions that give shape to my response to Irigaray's portrait of architecture:

Firstly, can the emptiness of architectural space be somehow reconceptualised? Under what conditions can human movement take precedence over built architectural materiality? What relationship would the body then have with built architecture?

Secondly, can architectural space itself be reassembled in terms of the invisible condensations, stratifications, and undulations of air? How does air respond to human movement? Can we understand our inhabitation of the structures of air as a form of intangible architecture?

[21] Elizabeth Grosz, *Architecture from the Outside: Essays on Real and Virtual Space*, (Cambridge, Mass.: MIT Press, 2001), 59.

Thirdly, and ultimately, how can a notion of an intangible architecture, as articulated through the reflective analysis of a number of art and architecture practices, enrich an understanding of the relationship between the moving body, air and architectural space?

Crossing

The extent to which our architecture, and Western architecture in particular, thrives on separation from the air and from the natural world can be largely attributed to the sway of Cartesian thought. In his book *The Sense of Space*, David Morris observes that within the Cartesian tradition, our inquiry into space and all the forces that have a bearing on it begins with a space already structured in geometrical terms and then considers – secondarily – how the body operates within it.[22] This mode of inquiry into space is essentially a meditation upon geometry, and through that attention to geometry, itself the very practice of precision and purity, purports to be objective in nature.[23] This model, put to us by mathematician-philosophers whose interests lie in the reduction and distillation of space, relegates the body to a secondary or oppositional role[24] – the body is an ultimately unnecessary adjunct of architectural space. In this sense space, and in particular architectural space, is viewed as an empty vessel into which bodies are dropped. Architectural space, by this measure, is little short of a cruel experiment, and the relationship between body and space a triviality. Not only is the body denied any meaningful role in the articulation of space, but the tradition actually conceals and vigorously

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[22] David Morris, *The Sense of Space*, (New York: State University of New York Press), 2004, 5.

[23] Ibid., 5.

[24] Leder, *The Absent Body*, 3.

suppresses the life and truth of the body.[25] The physical body, which is surely the most fundamental and vital commonality among us, is seen as a corrupting force that contaminates and confuses space through its very presence.

In his construction of a richer relationship between body and space Morris proposes a mode of understanding space in which space and body are not placed in opposition to each other or allowed to dominate, corrupt or erase each other. Instead, Morris proposes a positive relationship in which the presence of body in space is conceived as a kind of productive crossing: "Our bodies cross with the world, cross the earth, cross with our development and with our social world. Our sense of space refers to and makes sense of this crossing, it is not the reconstruction of an already constituted spatial order or container into which we have been dropped".[26]

This crossing frames a relationship between body and space that is not simply the addition of one to the other, body to space, but is rather a sense of space that arises from the constructive interaction of body and space. The body is not just in space, it is in a particular location within space that is denoted by a particular body of air – *these* specific particles of air, and not those. As such, the body crosses with space and produces another kind of space in the process, a space that registers the affect of the body through the movement of air. As the body moves, it generates a whole string of spaces, and each space has an effect on the adjacent space. The consequence of this crossing can be measured in the movement of the air (space) as the body inhabits it. It is reminiscent of a chemical

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[25] Levin, *The Body's Recollection of Being: Phenomenological Psychology and the Deconstruction of Nihilism*, 4.

[26] Morris, *The Sense of Space*, 175.

reaction – one substance added to another and a resultant, constructive and irreversible reaction. It is spontaneous, momentary, fleeting – it cannot be recreated, it cannot be fabricated. It is highly individual, is specific to a particular location, time, and particular to a body and to all the things that come with the body including its associated psychological, emotional and spiritual territories. Because the body is integral to this sense of production as it crosses with space, the body cannot be viewed as a purely physical phenomenon – it cannot be separated from its baggage and viewed as a deadened phenomenon or site any more than habitable space can be separated from air. The crossing between body and world creates a lived space that is body-centric – it is an architectural space that emanates from the body as it moves through space.

Morris delves further into this notion of a body-centric lived space to distinguish three types of lived space – lived space itself, in which space is created through the act of a body moving through it; dwelling space, in which space is created through the act of a body dwelling in it, for a length of time; and habitual space, in which space is created through the act of a body dwelling habitually in it, returning to the same movements and postures again and again over a longer period of time. In these lived spaces, a deeper complicity between space and the moving body emerges and we cannot ignore the connection between the two.[27] We can also see that the temporal component of the notion of lived space increases its richness and complexity: a body that moves through space once creates a directional space; a body that dwells in space over a period of time brings with it the associated territories of emotion, spirit, psychology; and finally, a body that dwells habitually in space over a

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[27] Ibid., 181.
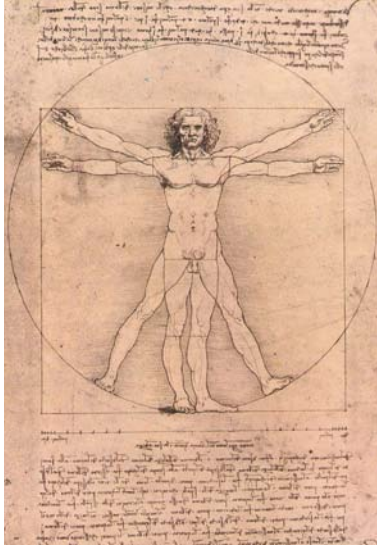
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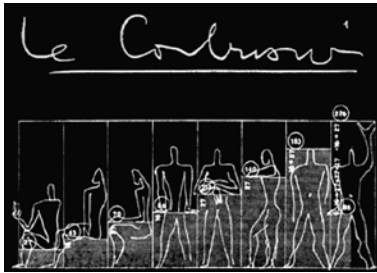
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Parent demonstrating movement on the
oblique plane | Claude Parent | c. 1966

long period of time gathers a momentum of productive patterns and movements that, strung together, begin to make sense as an extended whole – there is a sense of history, of temporal oscillation. That is, over a period of time some structure begins to emerge in which the body flutters between postures, places, moments. As Paul Virilio suggested in a conversation with Sylvère Lotringer, the model to be followed is not Vitruvian man, nor that of Le Corbusier's Modulor – it is the dancer.[28] The dancer is not a geometric phenomenon pitched as a doctrine of proportion and measure, it is a generative, innovative, moving body. It does not measure space nor vice versa, but perhaps, as Henri Lefebvre poses, it actually generates architectural space:

> Can the body, with its capacity for action, and its various energies, be said to create space? …[T]here is an immediate relationship between the body and its space, between the body's deployment in space and its occupation of space. Before producing effects in the material realm (tools and objects) before producing itself by drawing nourishment from that realm, and before reproducing itself by generating other bodies, each living body is space and has its space: it produces itself in space and it also produces that space.[29]

Here Lefebvre suggests that the body is actually an instrument of space-making – not an unnecessary ingredient in space whose very existence corrupts and contaminates, but rather the key creative component within the origination of architectural space. This vision evokes Morris's crossing in terms of the unique relationship between body and space but is different in one key characteristic. Instead of conceiving of the

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[28] Paul Virilio and Sylvère Lotringer, trans. Michael Taormina, 'After Architecture: A Conversation,' *Grey Room 03*, (Spring 2001), 37.

[29] Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith, (Oxford: Blackwell, 1974), 170.

crossing as two components quite independent of each other before their constructive interaction, Lefebvre suggests that the body and its space are in fact unified, one generated by the other over a period of time. Space is produced by the body in the obvious process of physical growth, producing itself in space, but also in the body's active reach, stride, gesture. Here we can see, like the space generated in Morris's productive crossing, that the extent of the space produced by the body is related very obviously to the physical extent of the body. It fits around us like a snug coat and changes as soon as the body is compelled into action. The stretching body generates a space, defined at its outer edges by extended fingertips and the air disturbed by those fingertips. We can think of this as architectural space, the crossing of body and space. Beyond those fingertips, however, the body's effect on the broader space beyond its own is diminished. Beyond the immediate vicinity of the crossing of body with space, the space beyond is vast and continuous. Beyond the zone defined by the potentialities of the body, a gradual dissolution of architectural space takes place, from a region of profoundly affected air to barely affected air, there is a glimpse of a broader and more overarching context in which this architectural space finds itself. The body forms the edges of an architectural space which it either does or does not cross. It is a matter of physical contact of space and body – of air and body – where the body is able to touch the air, to affect the air, the architectural space exists. Architectural space has edges, but they are defined by the potentialities of the body rather than material edges. The result is space that sits in profound contrast to the Cartesian vision of a pristine and predictable space. Instead, we have one kind of space sitting within another, and the relationship between them constantly changing in

response to the moving body. Lefebvre conveys this complex and evanescent space beautifully:

> On the one hand... space contains energies, hidden – even impenetrable – places, areas of viscosity, and black holes. On the other, it offers sequences, sets of objects, concatenations of bodies – so much so, in fact, that anyone can at any time discover new ones, forever slipping from the non-visible realm into the visible, from opacity into transparency.... One truly gets the impression that every shape in space, every spatial plane, constitutes a mirror and produces a mirage effect; that within each body the rest of the world is reflected, and referred back to, in an ever-renewed to-and-fro of reciprocal reflection, an interplay of shifting colours, lights and forms.[30]

Structured Space

Like Lefebvre, Michel de Certeau also describes a less rigid and constantly unfolding kind of space; a flickering space composed of intersections of mobile elements that exist as a product of time and the bodily vectors of direction and velocity.[31] It is surprisingly easy to visualise the body as a generator of vectors; the moving body radiates a furious kinetic energy, carving through space with its intimidating momentum. This visualisation can be traced perhaps to cinematic sequence-images that now consistently penetrate our spatial memory; after the advent of cinema, space could never again be conceived as stagnant.[32] This tendency to immediately confine ideas within a visual language is simplistic, though not least because the space we attempt to visualise does not actually exist

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[30] Ibid., 182.

[31] Michel de Certeau, *The Practice of Everyday Life*, trans. Steven Randall, (Berkeley: University of California Press, 1988), 117.

[32] See Victor Burgin, *The Remembered Film*, (London: Reaktion Books, 2004), 16.

in the visual realm. In *The Practice of Everyday Life* de Certeau bypasses the visual and offers a more evocative acoustic impression of a body-centric, spontaneous space. He likens this space to the word when it is spoken, when it is caught in the ambiguity of an actualisation and transformed according to its context.[33] This utterance, this bringing forth of wordless speech from an unknown and inaccessible place, is akin to the realisation of space – it is mysterious, it is intangible, and it is somehow inexplicable. For the utterer, there is the surprising creation of sound and the sense of production of something meaningful but difficult to pin down. For the listener, there is a silence and then a mysterious disturbance of that silence; then there is a heavier silence following sound that is so rich with the absence of sound that it is altogether different from the previous silence. In architectural terms, the presence of the moving body parallels the utterance, a physical phenomenon that disturbs and enlivens space, which then gives way to an absence that is charged with the lack of presence of the body. Like the silence heavy with the completed sound, architectural space sings to the moving body that was present in the previous moment, collapsing in on itself with its own longing.

In this approach, architectural space is wholly relative to the body in motion and to the fluid interaction with a range of other bodies and forces. It is a space of the physical crossing of body and world, but it is also a space of utterance analogous to driving along a country road at night, where the world exists only where it is illuminated by the headlamps. The lit space is furry at the edges where the light begins to be dissolved by darkness, and then disappears quite suddenly into a vast chasm of not-knowing, a darkness so unfathomable that it has no point of finitude. The

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[33] de Certeau, *The Practice of Everyday Life*, 117.

space is edgeless, underpinned by a sense of surreal astonishment similar to that described by sculptor and architect Tony Smith in his famous account of driving along the unfinished New Jersey turnpike in the 1950s.[34] This architectural space exists for and is created by the moving body; it materialises and then collapses with the passage of the body. It behaves as liquid, quickly moving to seal the gaps in space that the body previously occupied.

One spatial practice that reveals this sense of the crossing and the utterance in a very tangible sense is contemporary *shibori*. *Shibori* is a traditional Japanese textile practice that encompasses a range of approaches to bringing a three dimensional structure to a two dimensional piece of cloth through a process of binding and heat-setting.[35] It is a time-intensive physical interaction with a textile; the body forms a posture in space relative to the textile, the hands flutter over and through it in prolonged acts of stitching, folding, gathering, binding to gradually construct a new structure. This sense of focussed and detailed physical interaction is pivotal to the transformation of the textile prior to the heat-setting process:

> The word comes from the verb root 'shiboru', 'to wring, squeeze, press'. Although shibori is used to designate a particular group of resist-dyed textiles, the verb root of the word emphasises the action performed – the process of manipulating fabric. Rather than treating cloth as a two-dimensional surface, shibori techniques give it a three-dimensional form by folding, crumpling, stitching, plaiting, or plucking and twisting.[36]

12 | *Kikaigumo (spiderweb) fabric*
Hiroshi Murase
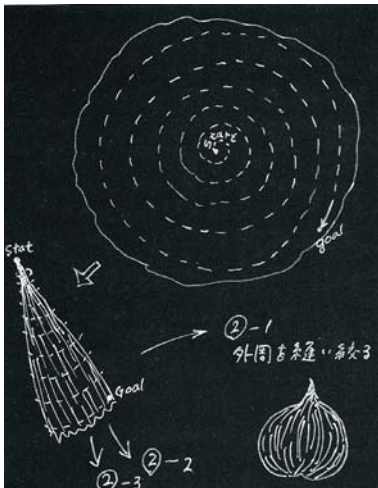
13 | *Process Drawing for One/A Lot*
Masae Bamba | 1995

[34] "Talking with Tony Smith" by Samuel J. Wagstaff Jr., *Artforum*, (Dec. 1966), quoted in Robert Storr's essay, "A Man of Parts," in MoMA's catalogue of the Tony Smith exhibition.

[35] Traditional *shibori* is actually a dyeing technique in which the bound areas of cloth resist dye thereby creating interesting effects of colour – but some contemporary practice skips the dye altogether and utilises the technique purely for its spatial potential.

[36] Yoshiko Iwamoto Wada, *Memory on Cloth*, (Tokyo: Kodansha International, 2002), 8.

After the new structure is in place, the textile is heat-set and the bindings are removed. Here the cloth reveals its new structure, no longer lying flat but instead articulated with peaks, waves and ridges. In the finished piece, each deviation from the uniformly two-dimensional warp and weft can be understood as a crossing of body and space that occurred in a previous moment. The reason for each deviation is gone because the bindings have been removed – and yet there is, in what was previously a flat surface, an entirely new landscape whose presence signifies the absence of what gave it shape. In this sense, each peak, wave or ridge recalls the utterance as de Certeau describes – a form caught in the ambiguity of actualisation.

Issey Miyake's *Pleats Please* (1993/1994), which featured garments made of partially crushed and bound polyester, brought a sense of tactile memory to contemporary fashion and compelled a consideration of processes of production in the wearer.[37] The body, wearing these garments that referenced production processes involving other bodies, thus carried with it – on it – a sense of spatial memory and an acute awareness of transformation. Similarly, Reiko Sudo's jellyfish fabric and Hiroshi Murase's spiderweb fabrics are rich visual references for the consideration of the crossing of body and space in the transformation of a two-dimensional surface into a three-dimensional surface. Yuh Okano's *Epidermis: Ocean* (1998) and Masae Bamba's *One/A Lot* (1995) take these processes even further by using *shibori* to create sculptural – even architectural – three-dimensional forms. The tactile memory that is engaged through each of these textile works and the way in which we can understand them as utterances raises the possibility that there might also be an architectural equivalent – a kind of spatial memory

14 | *Pleats Please* | Issey Miyake
1993 - 1994

15 | *Like Touching with Your Eyes*
Masae Bamba **| 2001**

16 | *Epidermis: Ocean* | Yuh Okano **| 1998**

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[37] Ibid., 80.

that is somehow held in the structure of architectural space.

While the motivation for much of the fashion work utilising *shibori* may be aesthetic, Kyoto-based textile artist Koji Takaki appears to use it as much for its conceptual connotations as for its physical result. Takaki is interested in how processes of transformation reference the invisible, and much of his work is titled *Ma*, a Japanese term without equivalent in English that refers to the interval or pause between two parts; the negative space that in Japan is considered as important as other space-defining elements. By bringing a three-dimensional structure to certain areas of cloth, Takaki presents us with two spatial extremes, the negative and the positive, the raw structure and the imparted structure. Somewhere in between these two extremes we find the invisible and elusive *ma*, which we might, in English, consider as a space of utterance. Takaki's use of *shibori* to reveal this space, and our ability to read how that space came into being through the action of the body, prompts an exciting possibility for architectural space – what if we could imaginatively read architectural space to understand that the body moved this way and then that, just as we can understand from *shibori* textiles that the needle that formed the structure pulled the thread this way and then that, even though both needle and thread are now gone? Could space remember the body as cloth remembers needle and thread, and how could this work in the realm of the non-visible, fluid air?

17 | *Ma* | Koji Takaki | 2001

18 | *Untitled* | Koji Takaki | 2003

Part Two : Air

The Forgetting of Air

Architectural space holds time, as memory, and as we move through space we move through the invisible spatial traces of all who have moved that way before us, and all who will move that way in the future. The air, the physical substance of space, is what links the past to present to future. The air carries the world to us, transporting phenomena: "For how else could the experience of the world – the sight of a ship, the smell, sound, or taste of the sea, or the feeling of the wind – travel through space and arrive in the mind?"[38] With the air in mind, the notion of an empty or unoccupied architectural space appears absurd, irrespective of bodies that may or may not be present. To acknowledge the presence of air as the substance of space, we must engage a different mode of perceiving space. Instead of understanding space as some kind of absence, or indistinct condition of between-ness, we must recognise invisible and often forgotten air as a real and important presence; we must bring it forward from a state of forgetting and tune our senses to register what is not visible or easily registered by our other senses.

> Is not air the whole of our habitation as mortals? Is there a dwelling more vast, more spacious, or even more generally peaceful than that of air? Can man live elsewhere than in air? Neither in earth, nor in fire, nor in water is any habitation possible for him. No other element can for him take the place of place. No other element carries with it – or lets itself be passed through by – light and shadow, voice or silence... No other element is as light, as free, and as much in the 'fundamental' mode of a permanent, available, 'there is'.[39]

19 | *Air currents over ice* | Colombia Icefields | 2007

20 | *Air currents over ice* | Colombia Icefields | 2007

21 | *Air currents over ice* | Colombia Icefields | 2007

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[38] Mallinson, 'Metaphors of Experience: the Voice of Air', 165.

[39] Irigaray, *The Forgetting of Air in Martin Heidegger*, 8.

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Despite its general elusiveness, air *is* material; we feel it, we smell it, we hear it. Our understanding of air from moment to moment is not absolute or self-contained, but rather it surfaces through inference. We engage the air with our senses – the sight of our chest rising and falling, the sound of air rushing into our sinuses, the sensation of a disturbance of the atmosphere near our skin.[40] We also experience the wild turbulence of air and register its visual consequence on the things around us in more extreme weather conditions; watery fields of windblown grass; pine trees arching against the sky; violent blizzards of horizontal snow; silent and deadly-still glassy oceans. We hear the air whistling through parts of the city, smell a good meal being cooked hundreds of metres down the street, taste the salt of the ocean on a windy day, and feel the chill of winter in our fingertips as it settles in across the landscape. Air carries the world to us through all our senses, and in everyday life this occurs in an ongoing series of delicate, half-noticed events. A lack of air also presents itself in subtle ways – we suffer the invisible absence of air in the high mountains, in oceanic depths and in the suffocation of dense urban sprawl, gently drifting off into oblivion without the air we need. Whether or not we are aware of it, we are constantly negotiating our way through a vast and pervasive mass of air; air that is vital and utterly indispensible. Air is the ultimate and elementary space; no part of it may be subtracted or overlooked. Air then, it must be said, is thus is the most critical material of architecture.

Throughout *The Forgetting of Air*, Irigaray's language pulls us into a new perspective in relation to air that concern the phenomenology of dwelling. Most interestingly, we find a consistent use of negative

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[40] Snibe in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 46.

22 | *Nunc est Bibendum* | Advertising poster for Michelin Tyres | O'Galop (Marius Rossillon) | **1898**

23 | *Structures Gonflables* | Display of architectural projects | 1968

24 | *Structures Gonflables* | Furniture of AJS Aerolande, Andy Warhol's Silver Clouds and meteorological balloons | 1968

conditions to fully realise an opposite positive condition – for example, in the above excerpt, in the description of the conditions under which it is impossible for us to live at length, we arrive finally at a point where all elements have been eliminated except air. In this context air becomes some kind of common denominator; the first or the last of a sequence of thoughts, the distilled essence of habitation and life. Indeed this makes an important point about the discussion and conceptualisation of air as a material – to describe it as such, we must first describe what it is not; to physically grasp it we must grasp its effects on our collective senses and understand it by inference; to appreciate its fundamental qualities we must suffer its absences and the impacts of those absences on our bodies. If we can move past our collective 'forgetting', as Irigaray encourages, and consider the air seriously as a legitimate and fundamental architectural material, how might our conceptualisation of architectural space evolve? How might we perceive space and our role within it differently?

Vitrified Air

> ...from the moment pure air was given a vital role during the hospital reform of the Enlightenment, ventilation became a cause as lofty, as intrusive as the revolutionary ideal of universal equality it was to serve. Between the oxygenation of urban space that followed, and the pneumatic imperialism of automobile development, the ways of modernisation and urbanism converged to pump more air into existence, to proceed with a pneumatic penetration of everyday life.[41]

The idea of air in relation to architecture is not new; indeed the 'oxygenation' of architecture through

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[41] Marc Dessauce, 'On Pneumatic Apparations', in Marc Dessauce (ed.), *The Inflatable Moment: pneumatics and protest in '68*, (New York: Princeton Architectural Press, 1999), 14.

25 | *Structures Gonflables* | Section of an ML inflatable shelter | **ML Aviation** Company **| 1968**

26 | *Structures Gonflables* | **Inflatable** house **| Quasar (Nguyen Manh** **Khanh) | 1968**
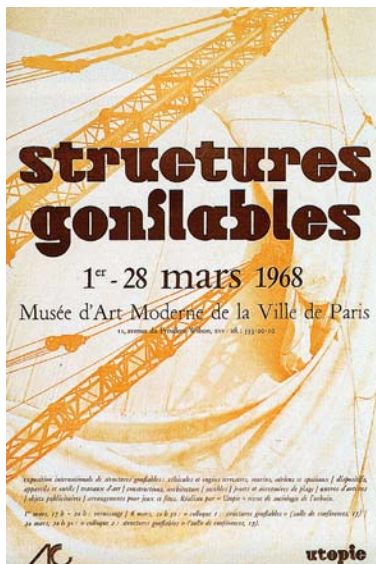
27 | *Structures Gonflables* Exhibition poster **| 1968**

inflatable structures has produced a range of fantastic forms over time and the earliest patents can likely be traced to John Boyd Dunlop's early tyres as well as those of the Michelin brothers.[42] European skies were well populated with massive air-ships by the early 1900s – in which the presence of architecture can hardly be ignored – and Scottish aeronautical engineer F.W. Lanchester's first air-supported building was patented in 1917.[43] Developments in aeronautical engineering led then to Walter Bird's spherical air-supported 'radomes' which were in wide circulation in the US military by the 1950s and since then we have seen an incredible variety of high and low-pressure air-supported structures emerge from Europe, the United States and Japan. The domain of air architecture rested almost exclusively with engineers until the 1960s, when a group of young French architects found themselves at the centre of what we might now reflect on as the politics of inflation.

The group of architects, known as *Utopie*, bore many similarities to the Situationists International in terms of their rebellion against 'repressive' urban planning. For them, the idea of inflatable architecture represented a social and material freedom, a glimpse of a built world in which buoyancy, ephemerality, and mobility would replace the inertia of postwar architectural urbanism. As graduates of architecture, they intended to *avoid* architecture, which they saw as a formalist and bourgeois occupation, and even to be *against* architecture, as the image and agent of social inertia.[44] The three core members of the *Utopie* presented their graduation projects as part of the *Structures Gonflables*

[42] Reyner Banham, 'Monumental Wind-bags', in Marc Dessauce (ed.), *The Inflatable Moment: pneumatics and protest in '68*, 31.

[43] Ibid., 31.

[44] Rosalie Genevro, 'Introduction', in Marc Dessauce (ed.), *The Inflatable Moment: pneumatics and protest in '68*, 7.

28 | *Diploma Defense of Utopie Group*
Ecole Nationale Superieure des
Beaux-Arts | **1967**
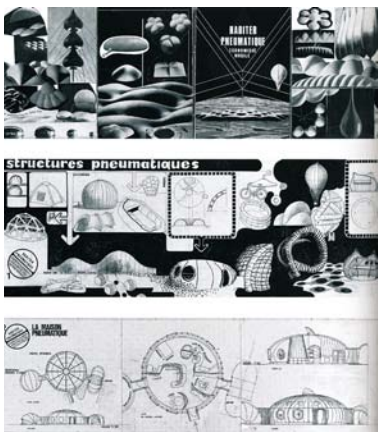
29 - 31 | *Proposals for 1967 Paris Biennal*
Utopie Group | 1967
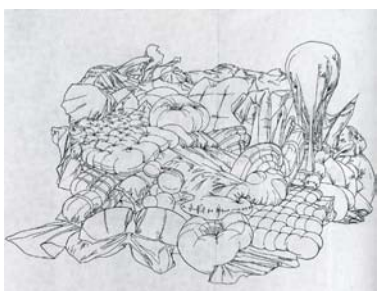
32 | *Pneumatic Still Life* | Jean-Paul
Jungmann | 1969

exhibition at the Musée d'Art Moderne de la Ville de Paris in March 1968, which included a range of inflatable products from manufacturers such as Zodiac, Goodyear, Firestone and Esso, as well as pneumatic furniture, sculpture, and spatial environments. The *Utopie* projects in the exhibition included a travelling theatre for 5,000 spectators by Jean Aubert, the 'Dyodon' experimental pneumatic house by Jean-Paul Jungmann, and Antoine Stinco's itinerant exhibition hall for objects of everyday life. There is little information concerning how these projects were critically received in architectural terms, but it is certain that their vision was adopted – even commandeered – by social theorists and other activists operating in the context of the 1968 uprising. In recent statements, the architects themselves declared that their intentions were more architectural than social and perhaps more closely connected to efforts in engineering than the way the projects were understood in the political climate of Paris in 1968.[45]

Also in the 1960s, Yves Klein proposed a notion of air architecture in which the materiality of dwellings and cities was dissolved and replaced by air. He proposed air of different densities as shelter, suggesting that a stream of rapid air propelled over a city could act as a roof, protecting the area from external elements such as wind, rain, snow. Klein also proposed air as furniture, where bodies came to rest on cushions of air for seating and sleeping. The scheme is fabulously preposterous, but as art commenting on architecture or even suggesting a new direction for architectural thinking, the scheme is worthy of more attention. Klein's project engages the architectural imagination,

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[45] A number of large original drawings by the *Utopie* group now hang permanently in the Pompidou Centre in a gallery dedicated to 'inflation'. Little attempt is made to explain the merits of the work in architectural terms; perhaps the sense of the works being employed for alternative purposes continues to the current day.
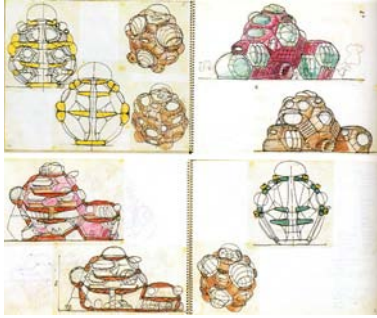
33 | *Studies for the Dyodon* | Experimental pneumatic dwelling | Jean-Paul Jungmann | 1967

34 | *Studies of Inflatable Superstructures* Jean Aubert | 1967
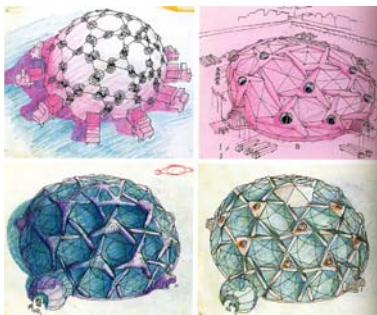
35 | *Travelling Theatre for 5000 Spectators* Studies of tensegrity structure formed of inflatable elements | Jean Aubert | 1967
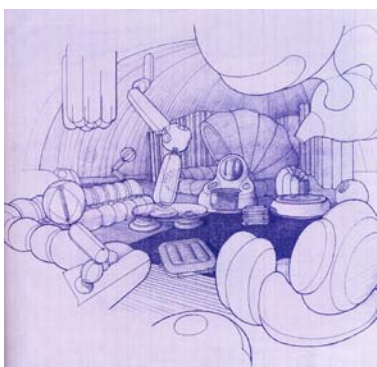
36 | *View of an Inflatable Interior* Jean Aubert | 1967

and encourages us to see architecture a different way. And yet even it was not completely radical, for still the concept of architecture was rooted in the sense of containment, and the creation of a periphery. Klein's architectural peripheries, however, relied on utilizing the different densities of air in hot and cold conditions, and the idea that architectural containment could be achieved without membranous structures was radical indeed – though apparently unpursued. Mark Wigley suggests that the significance of the idea is not rooted in its practicalities and should not be assessed in the same way that we might assess other architectural projects: "The scheme is ludicrous, naked wanderers resting on blasts of air? No, this simply shifts the sense of 'support' from one material (something solid) to another (air, not solid). I am talking about something quite different, a vision, a way of seeing, a way of understanding space, a collapse of time."[46]

In Monika Bakke's excellent *Going Aerial*, several inflatable architectural projects are discussed. Mostly these do not address Wigley's concern – and the concern of this text – of how to reframe the air as a fundamental architectural material that will allow new insight into space.

Firstly, artist Michael Rakowitz's *paraSITE* project (commenced 1998) proves problematic in terms of how air is used architecturally. Conceived as an inflatable shelter for homeless people, the *paraSITE* structures plug into exterior air conditioning exhaust vents. An intake tube is hooked onto the exhaust vent, and the airflow simultaneously inflates and heats the double membrane structure, creating an internal space for a person to sleep beneath the

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[46] Mark Wigley, 'The Architecture of the Leap' in Peter Noever and Francois Perrin (eds.), *Air Architecture: Yves Klein*, (Los Angeles: MAK Centre for Art and Architecture, 2004), 112.

37 | *paraSITE* | Michael Rakowitz | 1998

38 | *paraSITE* | Michael Rakowitz | 1998

inflated structure. Although admirable in its innovation, purpose and construction, and widely published in literature concerning flexible architecture, the *paraSITE* structures trap air so that the plastic that encloses the air can take on structural properties.

Secondly, Argentinian architect Pablo Reinoso's career-long transition from rigid materials such as wood, slate, marble, steel and bronze into 'air sculptures' seems promising in terms of revaluating the architectural potential of air. Laurie Hurwitz tells us that, "this radical shift reflected his [Reinoso's] desire to question the metaphysical and the immaterial in a more palpably symbolic manner – by means of something invisible, amorphous, insubstantial."[47]

Reinoso's air works are understood within three typologies – breathing, persistent and contracting sculptures.[48] The breathing works emulate the rhythm and sound of the human breath by mechanical means, with small electric fans that switch on and off in rhythm with the human breath. The contractible works swell and shrink, again through the use of small electric fans, mirroring the erratic movement of human muscles.[49] The persistent works, the most recent group of works, endeavor to maintain a stable volume of air and focus on containing and separating fixed volumes of air.

A group of breathing works, *Persistante* (1995), comprises organic shapes sewn from sail cloth through which tiny motors push air to create the effect of shallow, rhythmic breathing, "Quietly expanding and contracting, they call to mind UFOs, soft habitats such

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[47] Laurie Hurwitz in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 114.

[48] www.argentine-embassy-uk.org/oh/ah11.htm, accessed 19.12.08. See also www.pabloreinoso.com.

[49] Hurwitz in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 115.

39 | *La Parole* | Pablo Reinoso | **1998**

as cocoons or wombs, or phallic forms, first engorged, then **shrivelling".**[50]

In *La parole* (1998), the first of 'persistent' works, Reinoso, in order to engage two individual visitors in a visual dialogue, uses an inflatable fabric sculpture resembling a blimp suspended from the ceiling. Two orifices, one at either end of the blimp, invite visitors to slip their head inside. Their bodies remain outside the blimp. The visitors look at each other through the blimp, at each other's curiously disembodied heads, supposedly a 'destabilising vision' that transforms their perception of themselves. In the context of air, this project does start to get at the idea of disembodiment or dislocation – participants who put their heads through a valve that prevents the escape of air, thereby transition from one airspace to another. In making this shift, a kind of floating is enabled where body is separated from head, each in their own separate space. However, architecturally it is less certain how this functions. Heads are separated from bodies, and heads gaze across a segregated airspace at each other – but it is unclear as to what actually is the significance of delineation. *This* air is separate from *that* air – but separation does not seem to be the way to engage air architecturally. In fact this project recalls Le Corbusier's proposal of hermetically sealed cruise ships endlessly circling the globe within their own sealed supply of air.[51]

> Through the inherent paradox of using air – a life element that is invisible and impalpable, as the main 'material' in his sculptures, Reinoso leads the viewer to ponder existential questions, to question identity, mortality, the transience and fragility or existence... His inflatables create a sense of uneasiness,

[50] Ibid., 115.

[51] See Helen Mallinson's reflections on Le Corbusier's ideals in relation to airtight architecture in Helen Mallinson, 'Metaphors of Experience: the Voice of Air' 169.

putting the viewer on permanent alert, as if they await the moment that they leak, deflate or explode.[52]

This anticipation of the leak, the deflation or the explosion does not serve to reinforce the idea that the air is all-pervasive, omni-present – it separates, creates a fear of an impending event, creates an other – an *other* material and an *other* condition – it projects a sense of before and after rather than a sense of ongoing connectivity within space through the awareness of the air. The anticipation of the leak also reminds us of our own mortality, in which architecture parallels the shell of the body and the air within it parallels the soul. "**If the soul should escape** through one of the body's orifices, only the empty envelope would remain... every inflation is under the influence of the effect that this meaning implies".[53] It is doubtful that the inference, that every inflatable structure alludes to our own death, embodies the ideals of buoyancy, ephemerality and mobility that the Utopie architects first set out to explore – though in some sense the threat of deflation does represent those ideals in a far more profound way than the architects might have realised. These structures also recall the mechanical devices of the steam engine and the potential for catastrophe held within its highly pressurised air.

Thirdly, Tomas Saraceno's *On-air* project at Pinksummer, Genoa, 2004 presents yet another way to use the air, that divides and delineates rather than unifies.

> Two entrances into the gallery will subject you to two different 'pressures' of air. If you

40 | *On Air* | Tomas Sarceno | 2004

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[52] Hurwitz in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 117.

[53] Claude and Léon Gaignebet, 'Untimely Considerations on Inflatables', in Marc Desssauce (ed.), *The Inflatable Moment: pneumatics and protest in '68*, 30.

go up the stairs you will end up inside the gallery: here the 'pressure' is higher but not high enough to make your ears pop. However, when you take the lift, another staircase will then take you to the roof of a new room inside the same environment as the gallery, with a minor pressure. A transparent PVC membrane measuring 6mm in thickness and 6m in height will make the gallery breathe, keeping you suspended in the air.[54]

This project is not unlike Reinoso's blimp in that it divides architectural space and thus air by means of a plastic membrane, and then positions the body on one side of the membrane. Visitors to the main gallery space gaze up at the ceiling to find other bodies moving about on the other side of the membrane. Those above gaze down through the membrane to the floor below to see others moving about in the space of different pressure. Here again the air is employed as a material to give structure to a flimsy membrane – but the architectural effect is no different from that if the membrane had been built of glass. The visitor is unaware of the differences in air pressure, since they cannot feel their ears pop, and thus the experience, though undoubtedly wonderful and exciting, is reduced to a simple visual exercise of bodies apparently suspended in space with the gaze enacted through architectural space and material from one to the other.

Inflatable architecture continues to have a broad following today, with many contemporary publications highlighting its importance for the growing field of portable architecture.[55] Inflatables certainly do have a place in contemporary architecture – but not because they redefine the relationship between air

[54] Tomas Saraceno in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 151.

[55] See in particular Robert Kronenburg, and Robert Klanten and Lukas Feireiss for a range of texts examining current trends in fleeting/mobile/flexible architecture.

and architecture as was once hoped. Irigaray opens her book with the accusation that Heidegger's metaphysics is founded upon the value of density, and that density is the precursor for architecture. She notes that this attention to density – to vitrification, to petrification – necessitates a neglect of the dimension of air, the principal characteristic of which she believes to be its spreading, nourishing, infinite abundance.[56] In inflatable architecture we become very much aware of the materiality of air and its structural properties if it is properly contained and segmented by a membrane of some kind. Such containment and segmentation, however, runs contrary to Irigaray's arguments about air, and in this context it is clear – as Wigley suggests above – that the use of air in inflatable architecture is, in Irigaray's terms, a 'vitrification' of the air.[57] In this sense, an inflatable structure is ultimately no different from a stone, brick or concrete structure. Air – the abundant, free-flowing, permanent and pervasive air, is vitrified in order to become 'useful' in architectural terms; it is controlled, it is segmented, and it is ultimately contained – not just physically, but philosophically, because such containment is so obviously and so disturbingly opposite to the fundamental nature of air.

Exchange

To consider how the relationship between air and architecture might be reframed, another kind of forgetting must be enacted – a forgetting of 'architecture' in all its closed-in, contained, controlled and segmented forms. To genuinely address Irigaray's notion of an air of spreading, nourishing, infinite abundance, and to thereby come to consider

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[56] Steven Connor in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 119.

[57] Irigaray, *The Forgetting of Air in Martin Heidegger*, 16.

more elusive and spontaneous intangible forms of architecture, we must look to the basics of the air, and to breathing, that fundamental mechanical act of living creatures. It is through our breath that we are each most acutely aware of the constant ebbs and flows of air, and it is through an examination of breathing that we come to an understanding of the enduring state of flux of the air – a state of flux that in fact borders on violence.

Even at rest, we are never entirely still – the split second between the in-breath and the out-breath is as close to stillness as our bodies might ever come – but even it is charged with the anticipation of the imminent exchange. The breath, on average, moves in and out of our bodies every five seconds.[58] By this measure, at rest, we take 12 breaths a minute, 720 breaths an hour, 17,280 breaths a day, and 6,307,200 breaths a year. The constant coming and going of air within us and around us multiplies through time forming a profound and ongoing rhythm that connects every moment of our lives. Yet like the air, the breath is often absent from the consciousness of our bodies.

The process of bringing the breath to presence has been the focus of Hindu and Buddhist meditative and yogic practices for thousands of years. These practices focus on both the precision of posture and the consciousness of breath, and through a brief consideration of these practices we might discover some alternative ways of conceptualizing a notion of the air in relation to intangible architecture. In Zen meditation, the rise and fall of the breath serves as a repetitive and calming stimulus that establishes a neutral focus, allowing customary structures of

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[58] 'Air – Breath of Life', *The Science News-Letter*, Vol. 40, No. 14. (Oct. 4, 1941), 219-220.

thought to be disregarded.[59] As breathing is at the very threshold of the voluntary and the involuntary, and the conscious control of breath is itself an acknowledgement of an automated process, focused breathing offers a glimpse into a rhythmic, unified, timeless space. Lefebvre likens the glimpse of this rhythm to the sound of a seashell:

> He hears the wind, the rain, storms; but if he considers a stone, a wall, a trunk, he understands their slowness, their interminable rhythm. The object is not inert; time is not set aside for the subject. It is only slow in relation to our time, to our body, the measure of rhythms. An apparently immobile object, the forest, moves in multiple ways: the combined movements of the soil, the earth, the sun, or the movements of the molecules and atoms that compose it... To the attentive ear, it makes a noise like a seashell.[60]

Such rhythms and flows have not usually been associated with architecture, but it is possible to visualize architectural structures arising from these flows, structures that form a profound contrast to traditional forms of architecture. Sitting here writing very quietly and very slowly, the world around me recedes into the background as I focus on my breath. I imagine that I track the air in and out of my body. With the out-breath, the air immediately in front of me is disturbed as the current of my breath divides the air in a ridge-like shape, forcing it to curl into eddies that move rapidly away from the seam of disturbance. The reverse happens on the in-breath – the divide becomes concave, a gentle vortex of air pulling into my lungs. In and out, curling this way and that – the rhythm of the breath is not only related to the sustenance of the body

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[59] See Leder, *The Absent Body*, 171-173.

[60] Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life*, trans. Stuart Elden and Gerald Moore, (London, New York: Continuum, 2004), 20.

– it is a rhythm of space in which the body is located. Lefebvre observed the fluid qualities of these rhythms when observing people moving about in a square below his elevated viewing position: "...there is something maritime about the rhythms. Currents traverse the masses. Streams break off … the tide invades… then withdraws: flux and reflux." [61] The awareness of currents of air echoes the currents of people moving about in daily life; the character of the architectural edge shifts from impediment to an active surface – a surface that serves to reflect air or bodies back into space not in an act of frustration or termination, but of multiplication and intensification.

Zen Buddhist texts treat the body less as a system requiring sustenance and more as a vessel in which the breath is fleeting. This line of thought appears to have had a dramatic influence on Drew Leder's notion of the absent body:

> When we practice 'zazen' our mind always follows our breathing. When we inhale, the air comes into the inner world. When we exhale, the air goes out to the outer world. The inner world is limitless, and the outer world is also limitless. We say 'inner world' or 'outer world', but actually there is just one whole world. In this limitless world, our throat is like a swinging door. If you think, 'I breathe', the 'I' is extra. There is no you to say 'I'. What we call 'I' is just a swinging door which moves when we inhale and when we exhale.[62]

Here, the air exists both within and around the body, with no discernable boundary between what is internal and external. We breathe the very same air that we push aside in our movement, breath that has already been within us and within others as a fluid mass in

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[61] Ibid., 35.

[62] Zen master Shunryu Suzuki addresses his students in Leder, *The Absent Body*, 171.

continuous exchange. In a constant and repetitious cycle of sustenance, the act of breathing collapses any remaining sense of separation between body and space, as our bodies depend upon the fluid exchange of air that is both internal and external to the body. By constantly transgressing boundaries, and through that transgression providing sustenance, we see that everything is in and of air, all materialities touching through air, the immaterial materiality, conjured out of air, of breath and breathlessness.[63] This notion provides a startling new precedent for conceptualising a sense of intangible architecture – an architecture that is not concerned with edges, containment or segmentation, but rather, an architecture that multiplies upon itself, is open, continuous, fluid and pervasive. In this context it is clear why inflatable architecture and its strategies of vitrification do not bring us any closer to understanding aspects of intangibility in architecture, let alone architectural structures that might be generated purely from air. Though these inflatable architectures utilise air and generate a series of engaging affects and sensations, they do not address this fundamental notion of exchange and fluidity.

With attention to the breath, we find a body of works that addresses the relationship of air and architecture more successfully than the architectural works described previously. Is it that artists are more prepared to let go of a visible material reality than architects? Or do the different pressures on artists and architects in terms of the apprehension of space enable different approaches?

Colombian artist Oscar Muñoz's powerful work utilises the transience of the breath and our inability to pin it

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[63] Linda Marie Walker,'From Further Away Than I Could Ever Say...', catalogue essay, *Interference, Ainslie Murray and Mimi Tong*, Sydney, 2007, unpaginated.
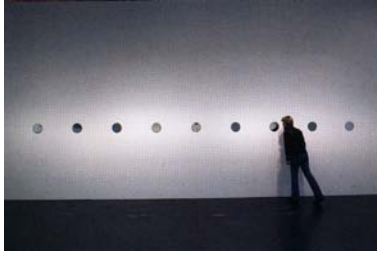
41 | *Aliento (Breath)* | Oscar Muñoz
1996 - 2002

42 | *Aliento (Breath)* | Oscar Muñoz
1996 - 2002
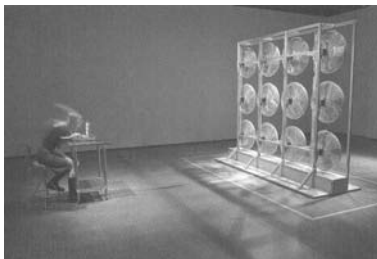
43 | *Blow Up* | Scott Snibe | 2005

down to articulate the plight of Colombia's disappeared peoples. In *Aliento (Breath)* (1996 – 2002), first shown at the Bienal de la Habana in 1997, the artist presented several round concave mirrors, made of polished steel, which were mounted on the wall. The spectator was invited to breathe on the surface of the mirrors, and the condensation on the surface allowed the emergence of a serigraphed archive image of a disappeared person. When the condensation was absorbed by the ambient air, the image vanished, and the disappeared person disappeared once more leaving the mirrors clean and shiny.[64] In this way disappearance is treated as a phenomenon as mysterious and utterly inexplicable as that of air – its presence is not and cannot ever be the phenomenon itself, only a refracted image of it, like looking at a scene through a prism.[65]

Similarly, Scott Snibbe's *Breath Series* used the strategy of amplification to draw attention to the breath and its invisible currents. In *Circular Breathing* (2002), visitors blew into an electronic mouthpiece which recorded and replayed a breath pattern. In *Mirror* (2001) a similar process occurred, but the breath itself was amplified into an artificial wind that highlighted individual contributions to the formation of atmosphere and environment. In *Blow Up* (2005) the same process again recorded, amplified and projected human breath into a room-sized field of wind. The installation comprised two devices – the first was a rectangular array of twelve small impellers, which stood on a table at one side of the gallery. This small input device was electronically linked to a large wall of twelve electric fans, which divided the gallery in half. Each tabletop impeller was spatially and temporally synchronised to

[64] Virginia Pérez-Ratton in *Turbulence: The 3rd Auckland Triennial*, Auckland: Auckland Art Gallery Toi O Tāmaki, 2007, 90.

[65] Barry Blesser and Linda-Ruth Salter, *Spaces Speak, Are You Listening?: Experiencing Aural Architecture*, (Cambridge, Massachusetts: MIT Press, 2007), iv.

a corresponding fan in the wall, so that the speed and relative movements of each impeller were replicated by the fans' speed and movements. When 'senders' blew into the first device, 'receivers' experienced the magnified breathing patterns with their entire body.[66] This strategy of amplification for registering phenomena points to the fact that it is not that air and breath do not have an impact on architecture or on our sense of space, but rather that we are usually unaware of the impact. Just like Oscar Muñoz's breathing piece, the smallest gestures can bring the forgotten air to presence, be it through simple amplification so that we are able to register the air with our skin, or a visual cue that we are able to recognise with our most practiced sense.

Nikolaus Gansterer and Constantin Luser's *Bable.lab* is another work which utilises the occupation of a space and associated respiration to generate a form. Visitors are seated around a central table and encouraged to engage in conversation. Each participant's conversation is 'captured' in individual latex balloons, which 'measure' the amount of air emitted in each conversation. The spatial consequences of the conversations are registered in the enlarging balloons, a phenomenon which then gives way to a complex field of power relations as individuals battle for temporary 'air sovereignty'.[67] This work is not unlike an inflatable form of architecture – but it is more ephemeral in the way it temporarily apprehends utterances and aspirations that are otherwise absorbed into the broader air.

Other projects have investigated the relationship between air and architectural space from a different
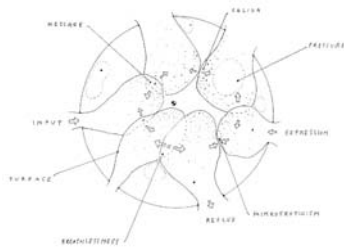
44 | *Bable.lab* | **Nikolaus Gansterer and Constantin Luser | 2001**
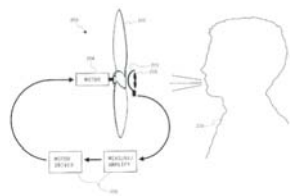
45 | *Mirror* | **Interaction diagram Scott Snibe | 2001**

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[66] Scott Snibbe in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture* 46.

[67] Nikolaus Gansterer and Constantin Luser in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 30.

perspective, without the flavour of measure and control. Monika Bakke points to a collaborative project between London-based artist/architect Usman Haque with Josephine Pletts and Dr Luca Turin goes some way toward suggesting how architecture might be reconceptualised through attention to the air. *Scents of Space* (2002) is an interactive architectural environment designed for the placement of fragrances without dispersion, thus allowing an investigation of the way in which the air, registered through the human olfactory system, can define architectural space.

> 'Scents of Space' posits that if an architectural environment could be precisely 'tuned' with scent collages, it would be possible to create completely new ways of experiencing, controlling and interacting with space. Visitors enter the enclosure and experience digitally controlled zones of fragrance that define areas of space without physical boundaries, encouraging them to encounter an invisible yet tangible smell environment...The installation is a simple translucent enclosure, nine metres in length, that glows inwardly during the day and outwardly at night. Airflow within the space is generated by an array of fans. Moving air is then controlled by a series of diffusion screens to provide smooth and continuous airflow.[68]

As visitors move through the open space along the horizontal and vertical axes of the interaction zones, their movement triggers the controlled release of individual scents in up to twelve discrete zones in a single planar wall. The scents are then dispersed in straight lines through the chamber without allowing the visitor to feel the flow of air. The particular sequence and pace of an individual's movement can then mix the smells by creating turbulence within the air. The visitor grasps firstly the presence of the smell in relation

46 | *Scents of Space* | **Usman Haque**
2002

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[68] Usman Haque in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 67.

to a source point on the wall, and then grasps the impact that their moving body may have in combining particular smells as they move from one part of the wall to another, or as they retreat from or approach the scent source.

Scents of Space is engaging, in that it not only draws in a sense other than vision in the perception of air movement, but actually allows reflection on the role the body might play in stirring the air within a given zone, creating turbulence and instability. In this project, air is treated as an architectural material that is 'free'; it is carefully controlled and monitored, but unsealed and ultimately untethered. Dynamic change is fundamental and inevitable – air, as architectural material, is interactive and actually *relies* upon the body's presence and movement to articulate changing spatial zones. This project comes closer than any described previously to addressing the potential of air to form intangible structures within architectural space.

Site

Our awareness of the air expands our understanding of the crossing of body and space by placing it in a physical medium – in fact air might be understood as place in that it locates the body in a particular space at a particular time. In this sense the air is not only an architectural material, capable of defining and redefining spatial zones in the fluctuating manner discussed above, but is also an architectural site – the fluid site of past, present and future crossings of body and space. As such it presents an infinite number of architectural possibilities given that its flow is not only literal, in a material sense, but temporal too because that flow in any given moment is itself caught in a larger flow – a permanent mass of flowing matter that is neither destroyed nor created, but ongoing

47 | *Scents of Space* | *Diagram of interior airflow* | Usman Haque | **2002**

and in enduring exchange with itself and with the bodies within it. Like a great heaving ocean in which everything is immersed, the air embodies all possible architectural sites as crossings of body and space in the past, present and future. On that dark country road the space lit by the headlamps gives way to an immense and unfathomable darkness, and it is the weight of that darkness that parallels the presence of air in this context. The air is an undeniable presence of immense substance, saturation and pervasiveness; it is like the darkness and also like the ocean, and in some sense we might imagine ourselves in air as being underwater. Architectural space exists for and is created by the moving body; it materialises and then collapses with the passage of the body, and as it does so it creates a series of architectural sites in the process.

As architectural site, the air cannot be understood as yet another architectural material waiting to be harnessed in the way the makers of inflatable architecture propose. It cannot be captured and contained for use as a structural material *and* be an all-pervasive architectural site – the effect of this would be spatially absurd as site and structure infinitely replicate within themselves. The proposition of air as architectural site means that a clear hierarchy is established in which air must come before all else – before place, before material, before body, before architecture.

The air, however, is not a placid site. It does not sit mute as a blank canvas awaiting our magnificent gestures. It is not static and silent, nor is it inert. It is not still, it does not *behave*. The air is in constant motion itself, and also in constant interplay with everything architectural that comes after it. Every molecule of air, every atom that comprises it, is eternally in some

form of motion, whether it be simple locomotive displacement, random molecular bombardments, or unavoidable vibrations of energy transfer.[69] **This** unceasing motion of air affects bodies within it; it conditions us physically, determining paths and patterns of movement; it conditions us psychologically as we interpret the air through our senses and translate this into emotional response; this, in turn, affects particular types of behavior and activity. It also affects the materials that edge it, as architecture, through physical processes of weathering and erosion. The constant movement of the air echoes the constant movement of our bodies – and in this sense our body acts as a vessel mediating the flow of air just as a building does.

The idea of a building **as a 'living organism' is not a new** idea, and has in fact been in wide circulation for some time. **Adrian Forty and Alberto Pérez Gómez are among** many scholars who have articulated relationships between the body and architecture as 'living' systems.[70] The major focus of such research has tended to revolve around the mechanical aspects of buildings and bodies since the 18th century. There are of course obvious parallels between the circulatory systems of buildings and bodies, and architects have consistently relied on the study of the bodily to inform the architectural in terms of spatial hierarchies within a design process. Similar parallels might also be drawn along the lines of 'breathing' – just as a body breathes and is in constant exchange with the atmosphere in which it exists, so too must a building 'breathe'.

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[69] See Joseph Mazur, *The Motion Paradox*, (New York: Dutton, 2007) 9.

[70] Prior to the 18th century there did not appear to be any conceptual distinction between the body and architecture. See Adrian Forty, 'Spatial Mechanics' in Peter Galison and Emily Thompson (eds.), *The Architecture of Science*, (Cambridge Massachusetts: MIT Press, 1999}, and more generally in **Alberto Pérez Gómez**, *Architecture and the Crisis of Modern Science*, (**Cambridge Massachusetts: MIT Press, 1985**).

In Western terms, this has become manifest in the mainstream field of passive architecture. 'Passive' is in fact a misleading term when it comes to describing the intent of such architectural design – rather than referring to the physical interaction required of building users, the word 'passive' actually refers to a desire to minimize or negate energy consumption in order to achieve an appropriate level of thermal comfort within a building.[71] The sense of thermal comfort is a factor of the climate in which a building is built – in a tropical climate, a passive building requires extremely active input from the building user in terms of the management air flows within the building, with adjustments to building apertures and shades needing to be made several times a day in order to accommodate the changing direction of the sun and cooling breezes. In a cold climate, a passive building is less demanding and its thermal comfort depends more on basic architectural decisions such as orientation, building material and construction.

In all buildings – large, small, tropical, and temperate – the air is in fact anything but passive, as buildings function in a similar way to a lung. An otherwise benign structure is activated and made useable with the intake of air, whether by mechanical or natural means. Buildings create and sustain their own climates according to design intent and actual use, and a range of art and architecture practices play with this idea by immersing the body in some kind of 'atmosphere'. Indeed atmospheric and climatic works have become prolific in recent years, with the range of major fog, rain, water, ice, heat and light works multiplying across the globe.

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[71] Thermal comfort is defined fairly universally as the state of mind that expresses satisfaction with the thermal environment.

French architect François Perrin's practice investigates architecture's invisible elements – space, ambiance, atmosphere and how people experience them. In discussing his *Weather Garden* (2004) he asks, "**What** does it mean to generate a climate, to build with air, to create space? When we inhabit a place, we do not live inside the concrete, glass or wood, but in the space that they surround. The project is an 'inverted architecture'; it reveals the condition of the air, the effects of the material, the light."[72]

48 | *The Weather Station*
François **Perrin** | **2004**

The focus on space rather than the elements that bind it is mystifyingly unusual in architecture, and Perrin's practice reveals a consistent attention to this issue. In *The Weather Station* (2004), part of the MAK Centre for Art and Architecture's exhibition *Yves Klein: air architecture* at the Schindler House in Los Angeles, Perrin presented a number of architectural interventions designed to alter the climate – and thus the experience – of the house. Rain, heat, pollution and condensation were all employed to play active parts in the definition of space, ultimately reflecting that climates, controlled or otherwise, can become new instruments of spatial categorisation.[73] Although Perrin states that his work investigates the effects of climate on the people who use his altered spaces, there is unfortunately no qualitative or quantitative data or even reflection on the behaviour of visitors within his spaces – in this sense, it seems that the work might go further by genuinely considering the relationship between climates as architectural interventions and the behavioural responses of the visitors. In Perrin's work we can only speculate that his challenges on 'passive' architecture may or may not result in new reciprocal relationships between the building and the building user.

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[72] François **Perrin in Monika Bakke (ed)**, *Going Aerial: Air, Art, Architecture*, 86.

[73] Ibid.,84.

49 | *The Weather Project*
Olafur Eliasson **| 2003**

50 | *The Weather Project*
Olafur Eliasson **| 2003**

In contrast, comprehensive surveys of building users formed a core part of Olafur Eliasson's seminal climate work *The Weather Project* in the Turbine Hall at the Tate Modern in 2003. In the lead-up to the construction of the project, Eliasson distributed a number of questionnaires to Tate employees seeking responses about the role that weather played in their lives. The results of these questionnaires were then published in the catalogue accompanying the exhibition, together with transcripts from a discussion group that included the artist, architect, director and staff of the gallery. Perhaps more than any other series of images in recent years, the tangible effects of 'weather' on visitors to the gallery are clearly evident in the documentation of *The Weather Project*. The installation, with its combined effects of an enormous, radiant yellow 'sun' and ambient hazy mist, had a profound impact on the way visitors used the Turbine Hall. The images show visitors to the mid-winter show lounging about on the concrete floor as if it were a lush field of grass – basking in the 'sun', as it were, on a lazy summer afternoon. Others just gaze at the 'sun', as if hypnotised by the mystery of such a sight in the depths of a grey London winter. Here, the perception of thermal comfort has a visible effect on the behaviour of visitors – an effect that is in contrast to the actual climate of the Turbine Hall. Eliasson's work shows us – emphatically and indisputably – that climate affects the way we behave in architectural contexts. Moreover, just as a building user is able to control the climate of an architectural space in a 'passive' building, the reciprocal is equally as true, as *The Weather Project* shows, where the climate of an architectural space controls the behaviour of the building user. In both scenarios neither space nor inhabitant is passive – both are caught within a complex reciprocal relationship in which every action incites a reaction. Passivity is nowhere to be found – rather,

what we find is a space of turbulent exchange in which architectural space and inhabitant exert a mutual pressure on each other forcing body and space – and consequently, air – into infinite motion.

Air Architecture

There have been many attempts to build architectures of the air that deal expressly with air in motion – these architectural attempts mostly involve structures whose purpose is to make the wind visible, and as such there is a clear focus on the fundamental condition of violence in the air.

As part of his *Camargue Ecology* (2006) project, British architect Shaun Murray proposed an architectural device that responded to airflow over an isolated rock, battered annually by the infamous Mistral. A series of sensitised ribbons were inserted and compacted into cut slots within the rock, and then automatically released into the air in response to the wind:

> The devices are programmatically triggered at different wind speeds, whereby a release mechanism catapults the ribbon structure out over the rock face. The ribbons are made in an aerofoil shape so as to produce enough lift to support the weight of them. The shape of the aerofoil is determined from the different trajectories of the wind. The ribbons are made up of a series of wind volumes which can expand at various rates of movement, depending on the different wind speed and pressure which is prevalent. Once the device has been catapulted out over the rock face, it calculates wind speed and detects air pollutants and moisture content through a series of filters within the ribbon structure itself.[74]

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[74] Shaun Murray, *Disturbing Territories*, (New York: Springer Wien, 2006), 46.

Murray's work foregrounds matters of ecology in dynamic spatial terms. There are no doubt less dramatic ways to measure wind speed, air pollutants and moisture content and in many ways the apparent functionality of the proposal seems incidental. The most interesting aspect of the proposal is the way that the forgotten air is brought to presence through an architectural gesture – not by making the air visible, but by examining its effects on a series of material elements. The wonder of such a device may not rest in observing the movement of the ribbons in space – as is the visual temptation – but instead in being offered an opportunity to momentarily glimpse the turbulent air-filled space between the ribbons. In this way, we tune our senses to the invisible, and the architecture functions not as container or fortress of that-which-must-not-escape, but rather as a structure that directs attention to its context rather than to itself.

Similarly, Steve Heimbecker's *Wind array cascade machine* (2005) addresses the basic but inescapable fact that we do not actually hear the wind, but rather hear and see objects as they are affected by the wind, such as the wind in our ears, the wind through the leaves of a tree, a field of mature grain blowing in the wind, or even the swirling detritus around a city building.[75] The *Wind array cascade machine* is an array of 64 motion sensors covering an area of 25 x 25m designed to emulate the motion of a mature field of grain while affected by the movement of the wind. Like Murray's project, there is a strong emphasis on data collection, with each sensor collecting information concerning wind pressure and direction. The urge to collect, to quantify, and to explain the wind in these projects is both interesting and disturbing, as if the
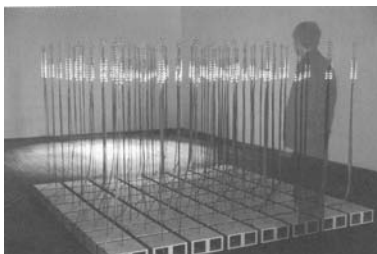
51 | *Wind Array Cascade Machine* | Model
Steve Heimbecker | 2005

75 Steve Heimbecker in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 95.

'measurement' of the air somehow renders it less mysterious.

In profound contrast, Eastern texts appear to celebrate the changeability of the air by attributing different kinds of air to different seasonal cycles. Throughout the *Vedas*, many kinds of winds are differentiated – winds relating specifically to the bringing of rain, the stirring-up of dust, and the arrival of the monsoon – and these have expansionary or developmental qualities in which the wind causes a change of behaviour in other elements (wind fanning a fire that burns a forest, for example).[76] Most significantly, however, the wind is constantly regarded as being mysterious and beyond the realm of quantification: "The wind presents itself as a mysterious element. It wanders where it listeth. Its sound is heard, but no one sees its form… Its origin is uncertain. Once it is called the child of heaven and earth, and again it is said to have sprung from the breath of the world giant."[77]

In the *Rigveda*, the god Prajāpati transforms himself into the wind in order to bring life to the creatures he had created. As there were too many creatures for him to perform this task alone, he divided himself into five different winds – *prāna*, *apāna*, *samāna*, *udāna* and *vyāna*. Each of these winds are translated into the human body as different kinds of breath – the breath of inhalation/expiration or the upward/downward breath; the breath of evacuation of bodily fluids; the breath of digestion and distribution of nutrient; the outward breath of eructation; and the ever-present breath between and beyond all bodily functions.[78] The same

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[76] See H D Griswold, *The Religion of the Rigveda*, (Delhi: Motilal Barnarsidass, 1971), 287-289.

[77] Ibid., 289.

[78] See the extensive discussion in Arthur H. Ewing, `The Hindu Conception of the Functions of Breath. A Study in Early Hindu Psycho-Physics' in *Journal of the American Oriental Society*, Vol. 22. (1901), 249-308.

text also identifies another five 'winds' in addition to those already mentioned – these produce the highly specific bodily effects of vomiting, winking, sneezing, yawning and enlargement.[79] In this sense the breath enables the body to function, not only by filling the lungs with air and transporting oxygen to the brain, but by the sustenance of the varied mechanical aspects of our bodies as fuel sustains a fire. In these attributions there is a clear logic to the thought relating body and air – a mystery founded in the mechanics of breath and in the ongoing exchange that breathing in air-filled space affords.

Most significantly, the *Rigveda* contains a very detailed description of how the five different kinds of breath can be constructed in architectural terms:

> Prāna in front is connected with apāna by laying the rear or western bricks immediately after the front or eastern ones. In the same way vyāna and udāna are connected by laying the bricks of the left or north immediately after those of the right or south. Further… the prāna which is put in the middle is called the intestinal breath. It is said to be placed round the navel lengthwise and crosswise, since the body breaths are in touch with each other lengthwise and crosswise.[80]

Here it is clear that the air is not an afterthought in the act of architectural design, but is used instead in a very direct way to physically locate particular parts of a building so that they are in the same relationship as a series of breaths. This notion is very different from all of the practices discussed thus far, which are generally creative responses fuelled by an intellectual curiosity concerning the air. Here, however, we see an altogether different notion of the air. Rooted in religious belief,

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[79] Ibid., 306.

[80] Ibid., 281.

the air becomes a generative force and through its ability to create new spaces and structures we can glimpse an architecture formed entirely from air. The *Rigveda* clearly expresses the exciting notion that a building might be formed from the placement of bricks in response to the breath, and in doing so ultimately suggests that architectural space may be formed from a series of inspirations and expirations. An architecture of the air begins to take shape – an invisible, intangible architecture that exists somewhere between a smoke ring and a building. Here, perhaps, we have the beginnings of what Haque provokes with his *Scents of Space* project – that architecture, finally, must cease to be a noun and become a verb, and in doing so, allow a redefined relationship between body, air and architectural space.[81]

[81] Usman Haque in Monika Bakke (ed), *Going Aerial: Air, Art, Architecture*, 77.

Part Three : Invisibility

To Write

There is a difficult and perplexing question buried within the space of the crossing, and within the nascent notion of an invisible, intangible architecture. It is a question that must draw on alternative geometries and systems of movement to approach a response: how to write the invisible crossings of space? I can write *of* them and *around* them, but how to actually *write* a crossing of body and space? How to corral the infinite number of fleeting, fragmented, dissolving moments that through their very production resist all forms of solidification and representation? We cannot turn to architectural drawing, since its business is that of visualization and thus of solidification; in fact we cannot turn to any established system of architectural representation because the vast majority of methods of representation deal in architectural space framed through the material rather than the immaterial. And yet there is still a need to write, to somehow meticulously nurture a retention of that which is invisible, to make a gesture of some kind in order to cause a survival, however small, "…to wrest a few precise scraps from the void as it grows, to leave somewhere a furrow, a trace, a mark or a few signs."[82]

Architectural representation by its very nature supposes the absence of dynamism, the absence of spontaneity, the absence of the unknown and the immeasurable. It is itself static and it makes space static through its language, its systems of order rely upon the absence of movement, of body, of chaos.[83] Even the most fluid filmic visualizations are still composed

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[82] Georges Perec, *Species of Spaces and Other Pieces*, (London: Penguin, 1997), 91.

[83] Laurence Louppe, 'Imperfections of Papers' in Laurence Louppe (ed.), *Traces of Dance: Drawings and Notations of Choreographers*, trans. Brian Holmes and Peter Carrier, (Paris: Editions Dis Voir, 1994), 11.

of a multitude of still images, all drawn from what Paul Virilio refers to as *absolutely barbarous* surgical slices of three dimensional space.[84] The barbarism is deepened when one considers that the architectural plan and section – the two principal geometric drawings by which architects describe space – lack any temporal dimension, and through that omission, cannot even begin to account for the body and its productive relationship with space. Yet it is through geometry and the thought that accompanies it, that we comprehend our spatial selves within the world; it is through geometry that we are able to understand the world in spatial terms that might approach some kind of objectivity, and begin to recognize its patterns as if we were observing a marvelous performance within which we ourselves were not intricately entangled. Without subscribing to the Cartesian notion of container-like pre-gridded space, we must seek an alternative way of thinking geometrically about space that references a space generated by the body rather than an abstract system of order; a geometry that can respond to and change with the body, which can in turn be used to conceptualise the writing of the crossing.

The choreographer, one might consider, has much in common with the architect. Each conducts a complex performance of moving bodies within space; each composes a spatial framework for that movement and controls it – one perhaps, more consciously than the other – right down to the very last footstep. Each employs systems of notation that both record and stimulate the thinking around this movement. The choreographer's notation is highly individual, often devised from scratch over a lifetime of practice and

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[84] Paul Virilio describes architectural drawings as 'absolutely barbarous things for measuring space' in Paul Virilio, 'Gravitational Space' in Laurence Louppe (ed.), *Traces of Dance: Drawings and Notations of Choreographers*, 35.

Neigungen der A-Skala

Punkt rz zu tl Neigung R0 (ltv)
  »   tl » vh   »   R8 (hvr)
  »   vh » lz   »   L9 (zlt)
  »   lz » tr   »   L0 (rtv)
  »   tr » zh   »   R5 (hzl)
  »   zh » vl   »   L6 (vlt)
  »   vl » rh   »   R ∞ (rhz)
  »   rh » zt   »   R2 (tzl)

31

Neigungen der A-Skala

Punkt vh zu lz Neigung L9 (zlt)
  »   lz » hr   »   L10 (rhv)
  »   hr » vt   »   L11 (tvl)
  »   vt » rz   »   L12 (zrh)¹

Eine räumlich gleichgeordnete Skala, in der die beiden in d
Anmerkung erwähnten Schrägen vorkommen, ist folgend
rechtsführend (B-Skala) von:
¹ Aus harmonischen Gründen, die wir später näher erörtern werden, fel
in der rechtsführenden Skala die Schräge rhz – ltv, in der linksführende
Skala lhz – rtv.

52 - 54 | *Sketches of the 'Scales'* | **Rudolf
Laban** | **year unknown**

developed as a system for communicating almost solely with the self. It is fluid, improvised and ultimately ungoverned by accepted standards of representation – no one else needs to understand it other than the choreographer herself. The choreographer's notation functions as a prompt; it is a mode of exploration and investigation. The architect's notation, however, is almost always intended for other eyes and is thus more likely to conform to the standard practices of architectural representation. But within these different contexts of operation, is it possible that the informal character of choreographic notation could provoke some alternative thought about the systems we use to represent architectural space? Could choreographic notation act perhaps as a cue for bringing the body to the foreground as the generator of architectural space and in doing so, bring us closer to an idea of how we might write the crossing?

Rudolf Laban, who developed one of the most enduring systems for describing the relationship between body and space in the act of dance, is often at the core of discussions around choreographic notation. Laban's emphasis on the changing dynamics between body, effort, shape and space can be clearly understood in his unique notion of the 'kinesphere', in which the body is conceptualised as the geometric centre of a dynamic, shifting space. The body forms a stable longitudinal axis through its form and around it, the three dimensional kinesphere takes shape as the space defined by the potential limits of the full range of our arm and leg movements. **As the body moves, the axis tilts and rotates, and the kinesphere moves with it.** In essence, the body creates its own space through its own movement.[85] Where the architect might imagine people

85 Steven Spier, 'Dancing and Drawing, Choreography and Architecture' in *The Journal of Architecture*, Volume 10, Number 4, 354.

moving within a three dimensional space that is defined by x, y and z axes composed independently of the body, in Laban's world a dancer is trained to imagine the lines, planes, and vectors emanating from their body such that they always know precisely where they are in a broader three-dimensional space.[86] Importantly, the kinesphere is fleeting and only ever exists where the dancer's body is for the exact moment that it is there – the memory of its changing position could be what prompted Laban to describe the dancer's gestures in space as *trace forms*.[87]

That a dancer should be able to define an invisible form through their movement brings dance and architecture into close proximity. Choreographer William Forsythe has pursued this relationship intensively throughout his career, and in *Limb's Theorem* (1990) he pioneered a technique for the interpretation of architectural drawings through a mode of dance called 'room writing'. With this method dancers translated the incredibly complex architectural information of Daniel Libeskind's End Space drawings into highly individual improvised movements:

> In 'room writing' you're going to imagine a room, its architecture and its contents, and you're going to analyse the architecture and the contents for its geometric content. In other words, a doorknob is a circle, for example, so I might describe this with two points. So I have this imaginary doorknob in front of me and with room writing, in one case, we're going to take this doorknob and knock it off the door.[88]

[86] Ibid., 358. It is noteworthy that Laban trained as an architect prior to his career in choreography.

[87] Preston-Dunlop, Valérie. *Rudolf Laban: An Extraordinary Life*, (London: Dance, 1998), 120.

[88] 'William Forsythe: Improvisation Technologies', eds ZKM Karlsruhe and German Dance Archive, Cologne, CD-ROM, 1999/2003, quoted in Steven Spier, 'Dancing and Drawing, Choreography and Architecture', 359.

In deconstructing the drawing through a process of playful interpretation, and then reconstructing it as a gesture in a three dimensional spatio-temporal context, the dancer undermines the authority of the architectural drawing and even brings a sense of humour to a ludicrously complex series of drawings. The absolute authority of the paper-based architectural drawing is steadily eroded and through the process of 'room writing' is ultimately replaced by a spatial mode of drawing through bodily gesture – the three dimensional field of space replaces the two dimensional paper surface, the ephemeral moving body replaces the indelible pen. Like Laban's ever-changing kinesphere and the invisible trace forms described by the body, the drawing is fleeting; the doorknob that is knocked off the door can only be comprehended in the attention given to that one fleeting and irretrievable momentary gesture.

In an everyday sense, we too might also generate such trace forms through our daily spatial practice – the repetitious and ultimately unremarkable spatial patterns that unfold in our daily business of living can be conceived as a kind of dance that is repeated over and over again with minute variations. As Evelyn Gavrilou suggests, dance itself might even be conceived as a conscious elaboration of the relationships and potentialities manifest in everyday patterns.[89] Unlike Laban's dancers, it is unlikely that we compute our changing position relative to architectural edges from moment to moment because we are wholly internal to our own occupation of space. We live each moment anew and dance through space as if it were eternally fresh and unfettered; a clean slate without history or future, a consistent and persistent forgetting within

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[89] Evelyn Gavrilou, 'Inscribing structures of dance into architecture' in *Proceedings of the 4th International Space Syntax Symposium* (London 2003), 32.

the space of habit, again and again and again. It is not that we have forgotten that we are dancing and that we have danced this way before, but rather that we operate in a subconscious state of suspended disbelief – our awareness of our body and space is 'frozen'.[90] In this state we cannot drift to the usual Cartesian extremes of matter or mind and it is this state of inbetweeness that ultimately renders any kind of habitual space inaccessible to us. As Edward Casey establishes, our internality within the patterns of our own habitual inhabitation engenders an inability to see our own rhythms from a distance, to conceptualise them as a kind of dance or indeed to grasp and address them in architectural terms.[91]

Merleau-Ponty describes our inhabitation of habitual space as a sedimentary process in which layers of present build over and upon layers of past. An action in the present is *laid over* the same action in the past, laid over again and again; it reinforces, strengthens and even rigidifies the past, and through that gradual process of solidification, solidifies the present as well. Merleau-Ponty's habitual space is space that is repeatedly inhabited and attended to, a dance danced over itself; its trace forms are like fossils, caught in a moment of being that is quickly and comprehensively overlaid by a new moment of being. Like a process of papier-mâché, habitual space is space that is *thickened* over time; it is a way of writing space, a kind of spatial inscription that seeks to make permanent that which is fleeting:

> Permanence is a defining feature of inscription. It endows inscription with a character of 'written-ness' that exceeds all other forms of

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[90] See David Morris, *The Sense of Space* for a discussion on habit as 'frozen perception', 90-96.

[91] Edward Casey (1984). 'Habitual body and memory in Merleau-Ponty in *Man and World 17* (3), 280.

writing… In order to function as an inscription, the writing or symbolism must occur so as to leave a lasting mark, one that will withstand the accidents and contingencies of everyday life. It must be one that will continue to signify consistently for an indefinite, even infinite, period of time. In doing so, it enables an 'unforgettableness' with regard to the symbolic content of the mark made. It preserves its meaning by sinking into an unchanging place.[92]

This mode of inscription, as Sally Ann Ness points out, is in fact the utter antithesis of dance. One has only to observe the way in which dancers pour their gestures into space in one moment and in the very next moment observe how those gestures abruptly and completely cease to exist, to be convinced of the absolute impermanence of gestural movement.[93] Similarly, the sense of *unforgettableness* is entirely at odds with a notion of habitual space, since the repeated forgetting (or at the very least suspension of disbelief) is one of its defining characteristics – and unforgettableness is not consistent with the inbetween space Casey describes. The rational process of sedimentation as a form of inscription implies an increase in clarity and comprehension through time – yet our frozen awareness of body and space does not change dramatically with time, nor with each new iteration. Architectural space generated through the dance, through the crossing of body and space is by its nature eternally changeable and utterly dynamic, so the sense of sedimentation as a mode of writing that **emphasises** a sense of permanence and unforgettableness is both inaccurate and unhelpful.

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[92] Sally Ann Ness, 'The Inscription of Gesture: Inward Migrations of Dance' in Carrie Noland and **Sally Ann Ness (eds.),** *Migrations of Gesture*, (Minneapolis: University of Minnesota Press, 2008), 4.

[93] Ibid., **6.**

In contrast Morris says that a habit is a style of movement that is not fully responsive to the world at present, a style of movement that is shaped by a past and/or orientated to the future.[94] He describes this movement as a condensation of the history of movement in which the present movement is *permeated* by a sense of past movement – rather than a process of sedimentation, habitual space is *infused* with what has transpired previously. It is woven in and folded through; it is soaked, it is saturated, and the present cannot be neatly excavated to reveal pristine layers of a past hidden beneath. A danced gesture is never isolated nor referencing only itself; through its very existence it triggers a memory of another gesture, which references that which has been danced before and suggests what might be danced in the future. The sense of permeability is less physical and more psychological in that it is the mind that must strive, futilely perhaps, to sort past from present in a conceptual and intellectual exercise. The sense that the present is permeated by the past calls forth Laurence Louppe's image of the dissolving writing of movement:

> The memory of movement would then be the memory of that which returns in us, of that which makes its return like a wave of life falling back from the shore. The inscription of movement would be memory itself, the shadow cast by experience. It would be the seismography of an intimate unfurling. As the wave is born from another wave, so the body alone can decipher the echoes of a resonance that returns, like a faded percussion in the material of paper, a rhythm that need only be awakened.[95]

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[94] David Morris, *The Sense of Space*, 45.

[95] Louppe, 'Imperfections of Papers' in Laurence Louppe (ed.), *Traces of Dance: Drawings and Notations of Choreographers*, 24.

In architecture the writing directs – almost entirely – what unfolds in physical terms. The writing, be it in the form of architectural representation, specification or even the physical process of building, is ultimately instructive and its business is to lay out the limits of what is possible. The writing – a drawing, a material, a physical edge – limits the body to be here and not there, to look this way and then that way. But the willful body, with its own independent pervasive rhythms, does what it must and not necessarily what is written. As the field of choreographic notation rightly acknowledges, it is through the movement of the body that something may be written in the first place; the body directs the writing, and not vice versa. The notations of a choreographer do not *describe* a bodily reality, nor act as *instruction* (joints to be spot welded or foot to be moved slightly left with pointed toe) – they prompt thinking around particular modes of movement and may be surpassed and erased by the body at any point in the same spirit of fluctuation in which they were drawn.

Choreographic Drawing

The premise of choreographic drawing, in conceptual terms, is fundamentally different from that of architectural drawing and this is revealed in the character, intention and ultimate significance of the line. In architectural drawing the line represents a material edge and the manner in which those edges connect. The line represents a change in built matter – from the subtlest shifts where a floor surface changes from say, timber to tile, to the more obvious shifts between inside and outside. The line is an arresting instrument in architectural representation – it defines, divides and segregates. The lines of an architectural drawing depict what-is-to-be in terms of built matter, inert matter; the drawings themselves articulate what

will be apprehended and bound into a fixed relationship with the body. In choreographic drawing, however, lines represent the vectors of the moving body. They are charged with the possibility of the moving body; they are lines that articulate the dynamic potential of the body, of many bodies, of a space expressed by the body that is yet to unfold. Architectural drawing and choreographic notation are in essence the precise opposite of each other. While dance realises the patterns of movement implied by empty space, architecture restricts potential movement through the imposition of spatial structure.[96] As such, research into the relationship between dance and architecture appears to repeatedly become stuck in facile comparisons between deconstructivist architecture and contemporary dance just as the relationship between choreographers and architects usually takes the traditional form of the latter designing sets for the former.[97]
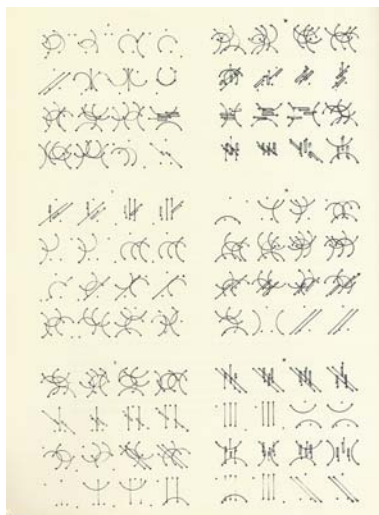
55 | *Melody Excerpt* | **Lucinda Childs | 1977**

Even within the field of choreographic notation however, there are a variety of approaches that range from dances composed in space (with a more 'architectural' mind) to those in which the body moves absolutely independently of built architectural space. American choreographer Lucinda Childs is one such example whose notation is distinctly architectural. She writes, "I like to notate, in simple graphic ways, the patterns that show the relationship of the dancers to each other and to the music... It's an overhead view, a two-dimensional map like a storyboard that shows the dance rectangle by rectangle."[98]

[96] Evelyn Gavrilou, 'Inscribing structures of dance into architecture' in *Proceedings of the 4th International Space Syntax Symposium*, (London 2003), 32.2.

[97] Steven Spier, 'Dancing and Drawing, Choreography and Architecture' in *The Journal of Architecture*, Volume 10, Number 4, 349

[98] http://chicago.timeout.com/articles/dance/79440/lucinda-childss-dance#ixzz0UhUMbFbr, accessed October 15 2009.
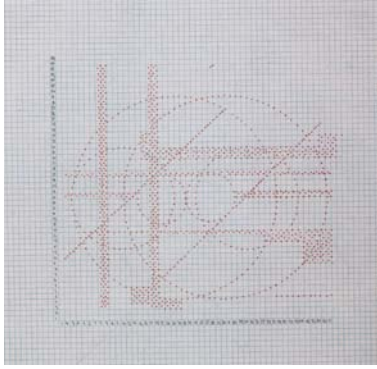
56 | *Calico Mingling* | **Lucinda Childs** | **1973**
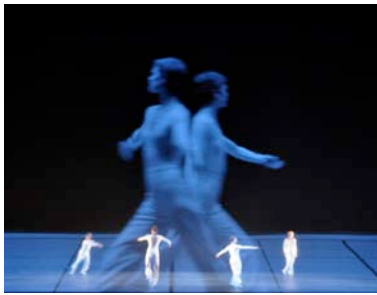
57 - 60 | *Dance* | **Lucinda Childs** | **2009**

In *Dance* (1979 and 2009), Childs locates her dancers on a neatly gridded floor, which functions as a full scale realisation of her rectangle-by-rectangle method of notation. In the 2009 performance, the literal relationship between the drawing and the dance was played out in a monumental change of scale as her dancers moved in front of a scrim upon which Sol LeWitt's 1979 film of dancers performing *Dance* was projected. The dancers moved within the unforgiving gridded floor space – their fluid movements formed a profound contrast to the structure in which they moved. The work, particularly the 2009 performance, reinforced the sense of a strong visual link between the dance itself. The form of notation, and a characteristically architectural awareness in the way the audience's viewpoint was manipulated through the juxtaposition of the actual dance and the filmed dance.

In a similar way, Louis Kahn challenged the Cartesian space of his own architecture by animating his architectural floor plans with sinuous lines that anticipated the trace of the body moving through the space. In spaces that are almost always true to the formality of Euclidean solids, Kahn confronted the Euclidean formality of his architecture as Childs confronted the formality of her floor grid. Unlike Childs' drawings, which are highly coded and symbolic, Kahn's animations breathe life into a formal representational system and allow us to imagine the prospect of invisible traces within an architectural setting. Unlike Childs' choreographic notation, however, Kahn's lines do not appear to be generative – rather, they are illustrative, in the formal two-dimensional architectural drawings at least – the architecture generates the pattern of movement and the lines added to the architectural drawing indicate the limited range of possibilities within the defined spatial structure.
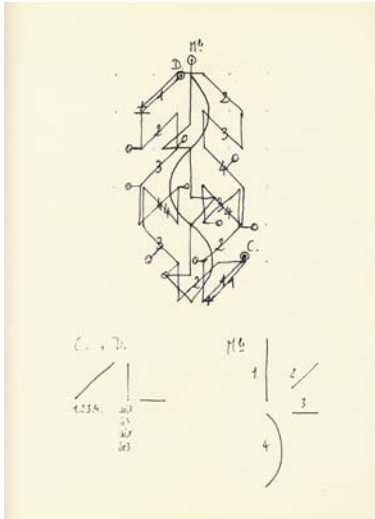
61 | *Déserts d'Amour* | **Dominique Bagouet** | **1984**
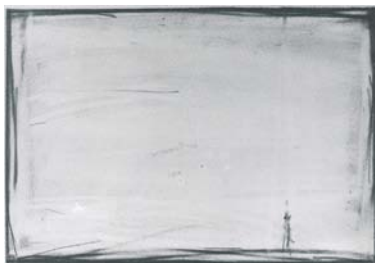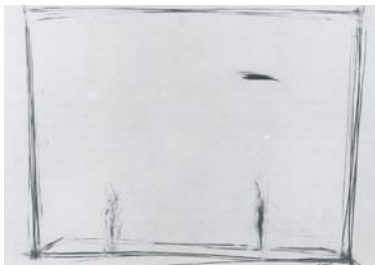
62 | *Einstein on the Beach* **Bob Wilson** | **1976**

62 | *Einstein on the Beach* **Bob Wilson** | **1976**
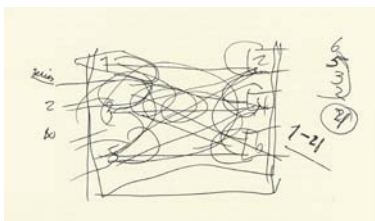
64 | *Space Patterns from Summerspace* **Merce Cunningham** | **1958**

French choreographer Dominique Bagouet's drawings function in a similar way to those of Childs, but rather than operating in the 'overhead' (plan) view, they are three dimensional oblique projection drawings. The bodies of the dancers appear to form planes through their movement, thus constructing an invisible, immaterial spatial structure as they move. Bagouet's notation actually resembles architecture itself; the movement of bodies defines invisible, immaterial planes and zones of rectilinearity and perpendicularity to which other bodies then respond. Further, the drawings are constructed by the choreographer in the 'impossible' viewpoint of the oblique drawing,[99] which indicates that there is a highly refined architectural spatial sensibility to Bagouet's work. Similarly, Robert Wilson's drawings operate typically as section-perspectives, which locate the body within the sliced-open container of the stage. Although the section-perspective is not an 'impossible' drawing like an oblique drawing, it is often conceptually difficult to grasp. In Wilson's work this mode of drawing serves to perfectly play out the oppositional dynamic between the body and the stage. The fragile body is dwarfed in perspectival space, overwhelmed by a bold and blackened section line that renders the setting as monumental and highly dramatic.[100] Merce Cunningham's comment on his realisation of space as non-hierarchical moveable points that are articulated by the moving body is revealing here:

> …it was the statement of Einstein's which I read at that time, where he said there are no fixed points in space. And I, it was like a flash of lightning, felt well that's marvellous for the

[99] In oblique drawing, lines are projected vertically from a true plan or section, and are thus a 'measurable' three dimensional drawing, unlike perspective drawing which considers the distortion of the seeing eye in its construction.

[100] Wilson was trained in architecture, so the sophistication of his drawings is less surprising than that of Baguoet.
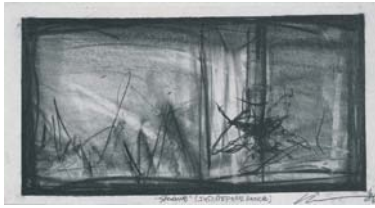
65 | *Salome (just before dance)*
Bob Wilson | c.1987

stage. Instead of thinking it's front and centre, a, a point, to allow any point, very Buddhist, any point in the space to be as important as any other. It opened the way one could think. How, not just that you face the way that you might think is unfamiliar, but how do you get to that? How do you get from wherever you were before instead of using ways that are familiar to you, your physical behaviour, you know, you have to really find out how to get the dancer, in beginning cases, myself, how do I get from here to here.[101]

66 | *Untitled* | Trisha Brown | 1976

In contrast, the drawings of Trisha Brown possess an internal energy that is clearly derived from the body and not from any sense of the built architectural space in which her bodies move. From the frenzied 'nodal' drawings such as *Untitled* (1976) and *Untitled* (1980), in which an infinite number of rays emanate from various nodes embedded in background texts, to the more austere line drawings, the notation captures a sense that the body generates its own space independently of the material edges that contain it. There is a kind of furious energy to the drawings, a restlessness to the movement of the body, and an uncontainable sense that its energy might obliterate any impediment it encounters. In *Untitled* (1976) the lines of the body are laid over a text that describes 'pure movement', as if the lines themselves seek to permeate the text, to unpick it and penetrate it, and to then reform it in the three dimensional space of the moving body. Brown's approach echoes and reinforces Laban's thinking in relation to the kinesphere in the sense that the body itself continually forms the space in which it operates.

67 | *Untitled* | Trisha Brown | 1980

German dancer and choreographer Mary Wigman's notations draw attention to the space-making potential

[101] The John Tusa Interviews, "Interview with Merce Cunningham," http://www.bbc.co.uk/radio3/johntusainterview/cunningham_tran-script.shtml, accessed 12.04.10

68 | *Totenmal* | **Mary Wigman** | **1930**

69 | *Field Papers* | **Dana Reitz** | **1983**

of the dance in terms of gesture. Although more illustrative than the other notations discussed so far, the sense of space produced by the body in movement is palpable – the body is located in free and undefined space and moves, arms extended, in repetitious motions, pulling from the air cocoon-like structures that are held around the body. There is a sense that the air that the body moves within is a part of the dance, a part of its space, and that body's movement is the enactment of some sort of hollowing-out of the air, as if the air were a solid entity.[102] This sense of space-body relationship is significant in that air is both invisible and impermanent in its constant movement, and the 'writing' in air is considered to be somewhat frivolous because the writing is neither visible nor enduring.[103]

Like Wigman's drawings, Dana Reitz's drawings also rely upon the gesture of the body to produce a fleeting trace form in space. Reitz's drawings have a distinctive calligraphic nature, as if her dancers are literally writing in air. The spontaneous gestures of the dance and the mark-making that corresponds to the gesture is calligraphic in style, which is unsurprising considering Reitz has studied Japanese calligraphy extensively and speaks about *ma* in relation to her work. In this context, the calligraphic gesture corresponds to the processes of *shibori* in that it can be considered as a space of utterance – the making of the gesture brings a new spatial structure to the air in the same way that the needle and thread bring a new topography to cloth. Like Takaki's textiles, a spontaneous moment of physical

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[102] Janet Frame describes a similar sense of air in *Scented Gardens for the Blind*, (London: The Women's Press, 1982), 17: "When people moved about me I found that they left their shape in the air, as if they had been wearing the air as clothing which stayed moulded even after they struggled out of it, for make no mistake, one struggles out of air because always it fits too tightly..."

[103] Ness, 'The Inscription of Gesture: Inward Migrations of Dance' in Carrie Noland and **Sally Ann Ness (eds.)**, *Migrations of Gesture*, 4. Ness states that endeavouring to make some kind of inscription in the air is a fruitless exercise, as the air denies the sense of permanence that the act of inscription seeks.

70 | *Field Papers* | Dana Reitz | 1983

71 | *Graffiti Analysis* | Evan Roth | 2009

72 | *Graffiti Analysis* | Evan Roth | 2009

expression creates an interval in space and time that is structurally transformative; the gestural utterance of the dancing body is directed by Reitz's own gestural utterance in the brushstrokes of her choreographic drawing.

In a similar vein, but with an entirely different attitude, Evan Roth's *Graffiti Analysis* (2005) is an example of a gestural act of writing being treated as a choreographic act, generated from the process of making an actual physical inscription on the surface of a building. The project followed the act of tagging urban surfaces, and then, using motion tracking, computer vision technology and custom-made software, analysed the making of each tag to reveal the unperceived movements of the graffiti writer's body as a kind of choreography of mark-making.[104] The movement tracks of the graffiti writer's hand were analysed using a similar methodology to the analysis of traditional forms of calligraphy – information that concerns the order, weight, direction, and velocity of each stroke was collated and reassembled without any imagery of the body or surface to accompany the appearance of the tag. The mysterious and enigmatic result showed the gradual writing of the body-less and surface-less tag in unmarked space, which on its own served to prompt our imaginative understanding of how the body might have moved in order to generate such writing.
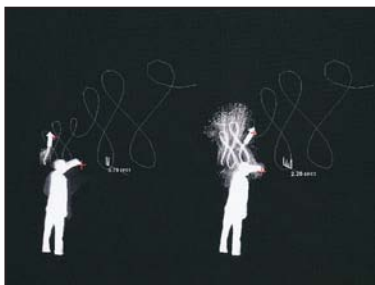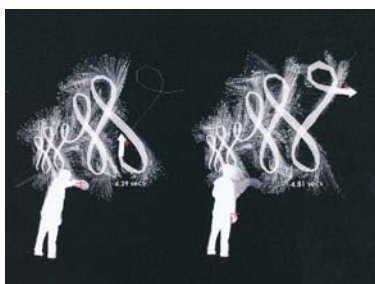
In the latest incarnation of the *Graffiti Analysis* project at the Foundation Cartier in Paris (2009), the animation of the body-less, surface-less graffiti included the multiple trajectories of airborne paint particles in the act of spraying the tag. Tiny particles of paint could be seen to accompany the appearance of the tag, and

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[104] See Evan Roth, *Available Online For Free*, (Hong Kong: Ni9e Factory, 2009).

73 | *Graffiti Analysis* | Evan Roth | 2009

then be seen to be flying beyond the writing itself in a fleeting continuation of the writing gesture in air. The inscription itself thus formed only part of the gestural movement – the particles of paint beyond the writing charted the further possibility of writing in the three dimensional field of air through the act of making a gestural inscription on a two dimensional surface. At the conclusion of the gesture, the writing hung on the screen for several seconds as the camera panned around it in three-dimensional space. The writing then suddenly dropped away as if falling out of the air, like rain falls out of the sky or shattered glass falls from a frame. The dissolution of the writing of the body seemed to illustrate the absolute reality and inevitability of our bodies writing invisible, dissolving trace-forms in air with every movement in every moment.

The Invisible Trace

Just as we can conceptualise the writing of a tag as a composition that can be analysed and reframed as a deeply evocative and gestural act, so too can we consider the range of our ordinary, everyday patterns of movement as a choreographic sequence that continually, if quietly, evolves from day to day. Today's patterns of movement, for any individual, are unlikely to differ greatly from those of yesterday, or those of tomorrow – although they are neither strictly nor precisely the same, they are, on the whole, not altogether different either. Grosz has spoken of this difference and repetition as being a kind of shimmering in which patterns of movement and gesture that are thought to be the same turn out to be quite different within a structure of similarity.[105]

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[105] Elizabeth Grosz, public lecture, "Art, Territory and Chaos", at the University of Sydney, 2005.

Near-identical movements that are repeatedly, perhaps blindly, enacted are in fact sufficiently different from each other to affect a kind of oscillation between one movement and the next. The result of this oscillation, this shimmering, is that the past, present and future moments in which repetitious movement takes place cannot be isolated from each other in any meaningful way. The enacting of movements that are similar but not the same causes a sense of almost-remembering – or almost-forgetting – that is at the core of habitual space and the sense that our ability to perceive our own repetitious patterns of movement is somehow frozen.

If we endeavor to thaw our perception of ordinary movement in order to try to understand the patterns of our movement in space, we could perhaps come up with a range of graphic traces that function as choreographic notations, to distill and focus our thought in relation to everyday movement and space. If we consider, say, a particularly ordinary domestic scenario involving a number of bodies moving about in a constrained space, we can imagine a great tangle of interwoven lines of movement being generated through hours, days, years:

A man rises slowly from the bed and descends the stairs to the living room. There, he crosses paths with a child, who is on their way across the living room to the kitchen down the hall. In the hall, the child ducks and weaves in order to avoid a smaller child, who runs in curiously constant rapid lines up and down the hall. In the kitchen, a woman darts between the dishwasher and cupboards in an efficient early morning ritual.

In this scenario each individual forms an architectural space as they move, their bodies crossing within a

specific space in the moment they inhabit it. As the man moves down the stairs the space of the staircase is agitated and becomes an unstable zone of swinging, descending limbs, each moving repeatedly in an almost-identical manner over and over again; once he is at the bottom of the staircase the inhabited space stops shimmering and once again becomes silent and inert as the body vacates the space. We can conceive of this movement as a kind of dissolving trail that forms behind the moving body, similar to the vapor cloud left by planes in the sky. It is a distinct line formed in response to movement; it then drifts and dissolves entirely. Each encounter with another person generates a kind of vanishing knot – the crossed spaces collide and react to form a new space that itself then drifts and dissolves.

In a second scenario the dissolving trails and vanishing knots become more complex as they are drawn into a close relationship with each other in an extended temporal context:

A pilgrim ascends a quiet mountain path. Very occasionally, she encounters another pilgrim who, having already made their ascent, now descends. The ascending pilgrim and the descending pilgrim approach and pass each other. The ascending pilgrim feels a rush of air on her face as the descending pilgrim passes, and is acutely aware that she is walking in previously-walked space.

In this scenario the crossings become more complex as they are consciously woven in a space that is extruded between one temporality and another. The awareness that the ascending pilgrim has of walking in space that was previously inhabited by the descending pilgrim leads to the awareness that she herself will re-walk,

in the opposite direction, her own walk on the way
back down the path. The act of walking up and back
along the same path brings a temporal complexity to
the dissolving line described in the first scenario; here
the line is drawn and dissolved in the ascent, and then
re-drawn and re-dissolved in the opposite direction
some time later. It is a repetition of a near-identical
movement with directional and temporal differences;
a revival, in a reverse order, of a space that previously
shimmered with movement in the opposite direction.
It is both an erasure and a reiteration, perhaps like
pulmonary ventilation in which a new breath is forced
into the space of another body, erasing that body's
own space but simultaneously filling it with its own
potential. The line of the first scenario is now imbued
with multiple directional possibilities – it connects,
quite literally, one moment and the next, making a
space between erasure and reiteration. Indeed such
connection would mean that we cannot conceptualise
it as a simple line, but rather as a plane or region
between the formation and dissolution of multiple
lines. When we overlay this idea with the sense
of many pilgrims and many intersecting planes we
can imagine a more complex and fractured zone of
collisions and spatial mutations.

In a third scenario the sense of collision and mutating
planes becomes even more complex and reflects multi-
directional fields of crossings and knots:

*Hundreds of people compete in an ocean swim. The
first swimmers contend with the ocean's currents and
the oncoming waves. The second swimmers contend
with the ocean's currents and the oncoming waves,
and also with the wake of the first swimmers. The field
approaches a buoy and turns back toward the beach.
Now the first swimmers contend with the ocean's*

currents and waves in the other direction, as well as the disturbance of their own wake and the wake of the second swimmers behind that. The superimposition of waves is endlessly multiplied until all sense of action and reaction is lost.

In this scenario all sense of carefully constructed geometrical trails is lost through a process of superimposition in which all the geometries generated by the body are multiplied with each other to create an unpredictable field of chaos in all directions. All sense of line and plane is lost and there is only a three dimensional zone of disturbance extending above and below the water. Here, we understand that the traces of our movement must be conceptualized not as a line or a plane, but as a field that extends in all directions and that is continuously impacted and reshaped by all manner of movements and gestures. By grounding this image in water we can begin to grasp that air might also be treated as a disturbable liquid. Here we understand that air is a highly charged space in which our movements continue to shimmer in the slight gaps between today, yesterday and tomorrow.[106]

Conceptualising a geometry of how the body occupies space does not however, equate to illustrating such inhabitation through graphic traces. Although an incalculable number of artists are concerned with generating graphic traces of movement, it is doubtful that such practice sheds much light on those aspects of the inhabitation of habitual space that are not immediately obvious. For example, Sandra Selig's evocative thread installations such as *Synthetic Infinite* (2004), can be understood as graphic traces of the artist's repetitious movement in the space of the

74 - 75 | *Synthetic Infinite*
Sandra Selig | 2004

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[106] It is revealing that in Hindi, the word for yesterday and tomorrow is the same – *kal*.

76 - 79 | *Installation Documentation*
Sandra Selig | 2004

gallery. Line by line we are able to imagine the artist's movement from here to there, as she pauses to wind thread around a nail in the wall, and then moving away again. We can imagine the many repetitions of these movements over hours and days as the installation slowly takes shape. Over and over, the unwinding thread quite literally trails the artist's movement. Similarly engaging are action drawings such as Tom Marioni's *Walking Drawing* (2004), in which the artist taped a long horizontal sheet of sandpaper to a wall, then attached pencils to his waist and repeatedly walked close enough to the wall to create a series of overlapping lines. They illustrate movement, but are simultaneously confounding because they do not reveal anything that is not already obvious about the way the body moves within space. [107] Both these approaches can be understood in geometric terms, but the proposition of them as enduring traces over-simplifies the nature of the body's inhabitation of space. Selig's temporary web installations must be dis-assembled at some point, perhaps slowly wound up in the reverse order from which they were unwound, and this is itself another trace act just as meaningful as the first – but this is neither acknowledged nor documented in her practice. In essence, the 'infinite' quality that the work promises is, in fact, curiously finite.

Hannah Bertram's approach, in which the dissolution of a habitual space is an integral part of the work, is perhaps closer to an acknowledgment of the role that absence and invisibility must play in the serious consideration of the ways in which the body inhabits space. The artist routinely cites her materials to include what is not there – for example, *ash*, *concrete floor*, *absence* in *Now They Are Gone, I Hold Them* (2009).

[107] For an account of Marioni's action process, see Stuart Horodner, 'Walk This Way', in *Walk Ways*, (New York: Independent Curators International, 2002), 34.
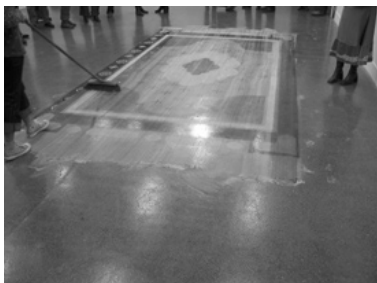
80 - 84 | *Swept Under the Rug*
Hannah Bertram **| 2006**

Similarly, the erasure of her work is often an integral part of it, particularly with her dust carpets installed on gallery or studio floors. In these works, Bertram creates ornate oriental carpets from a mixture of dust and dry pigments, which in themselves trace the particular patterns of artist's movements in over the floorspace. We can imagine her moving slowly and carefully over the plane of the floor with a little bag of dust and a stencil. Then, at the conclusion of the work, she carefully sweeps up the carpets using ritualistic strokes of the broom from one end of the carpet to the other. The purposeful dissolution of the carpet, performed with as much care as the creation of it, captures the fragility and futility of the graphic trace which, despite so many attempts to fix it, must ultimately be understood as fugitive. Here we understand that the performance works to bring us closer to a more comprehensive understanding of the way the body inhabits space than more static visual or sculptural practices.

The absence of the graphic trace is a reality for most movement most of the time, particularly as we consider our movement in terms of geometric fields rather than lines. In art and architecture, however, it presents the viewer with a significant cerebral challenge as the natural inclination to fixate upon the visible is purposefully denied. Michel de Certeau proposes the non-visual space of the utterance, he also describes the field of our movement as forests of gestures, and insists that these forests cannot be flattened into images despite the multitude of visual sensations that they call forth:

> These 'trees of gestures' are in movement everywhere. Their forests walk through the streets. They transform the scene, but they cannot be fixed in a certain place by images. If

in spite of that an illustration were required, we could mention the fleeting images, yellowish-green and metallic blue calligraphies that howl without raising their voices and emblazon themselves on the subterranean passages of the city, 'embroideries' composed of letters and numbers, perfect gestures of violence painted with a pistol, Shivas made of written characters, dancing graphics whose fleeting apparitions are accompanied by the rumble of subway trains… If it is true that forests of gestures are manifest in the streets, their movement cannot be captured in a picture, nor can the meaning of their movements be circumscribed in a text.[108]

As de Certeau points out, the articulated thought of body, space and gesture itself unleashes a series of involuntary images that appear purely through the mental verbalisation of the word 'forest' or 'gesture' or, indeed, any apposite word. Vivid images, whether we invite them or not, flick in and out of our consciousness in a constant and unrelenting stream – and yet, with each image, some critical part of the crossing between body and space is lost in the moment the image materialises. The image, even the stream of achingly beautiful luminous fluidity that de Certeau describes, can only ever refer to a moment that is immediately past and thus to the absence of what is now gone. As such, any image of movement lacks currency and refers only to its own inadequacy in endeavouring to describe what, through description, it will invariably deaden.

The reading of absence that dance or a performance such as Bertram's facilitates, however, allows a more optimistic position with respect to the conceptualisation of the movement of the body. Absence as a positive, legible spatial component is integral, for example, in the tracking practices of

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[108] de Certeau, *The Practice of Everyday Life*, 102.
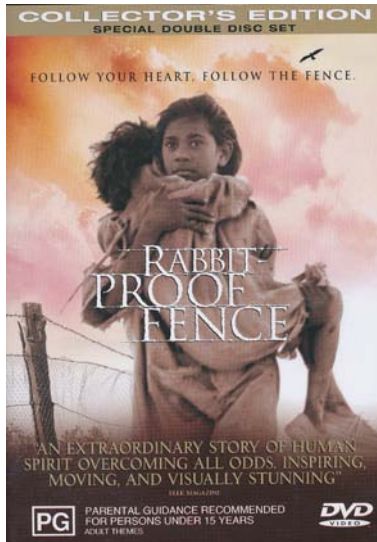
85 | *Rabbit-Proof Fence* | DVD
poster | 2002

85 | *The Tracker* | Advertising
poster | 2002

Australian Aboriginal people. In Philip Noyce's film *Rabbit-Proof Fence* (2002), a tracker traces the path of three girls by following the tangible signs of their passage – footprints, disturbed river reeds and campfire debris. At times the tracker is seen to be gazing into space in deep concentration, as though he is reading something more than these obvious signs, something to be detected in the absence of the girls from this place in which they once were. We can appreciate the fundamentals of the tracker's work in the reading of a disturbed landscape – a broken twig hanging askew on a tree, for example, easily allows us to understand that the passage of a body has disturbed it because we can mentally reconstruct the twig before it was broken. The broken twig is itself what points to its former condition of being unbroken – it is a clear sign, a tangible physical trace that we are able to follow.

In Rolf de Heer's film *The Tracker* (2002), absence plays a greater role. The tracker and his party walk silently through a dry creek bed strewn with innumerable river stones. Without any sign made obvious to the audience, the tracker states that the fugitive is several hours ahead. When one of his party expresses doubts about the tracker's assertion, the tracker is asked to explain the signs. He describes how one stone, in a vast area of seemingly identical stones, has been shifted almost imperceptibly from its place by the prior movement of the fugitive. The stone has been moved slightly from its place by a hurried footstep, leaving behind an indentation of where it previously rested in the sand of the creek bed. The indented sand that was earlier shielded from the sun by the stone has dried out, and by considering the relative dryness of the sand compared to the sand under other stones, the tracker can say how many hours ahead the fugitive is, with reasonable accuracy. This practice is more remarkable

than the simple following of a series of footprints in the earth, because the tracker's ability to follow the trace relies upon his interpretation of absence. He reads the absence of the stone rather than the stone itself.

In Rachel Perkins' film *One Night the Moon* (2001) another tracker reveals an even more complex dimension of his practice with a declaration that he can track the shadow of the moon. This is altogether different from reading footprints, debris, and broken twigs, which are each the tangible and relatively permanent traces of a transitory body. It is also more complex than reading the absence of river stones and the temporal dimensions of a spatial disturbance. Tracking the shadow of the moon is immediately more complicated because it involves the tracking of intangible elements that are in themselves fleeting traces of a fleeting body. In a similar vein, in the *Rigveda* the god Varuna is said to read not only the tracks of terrestrial creatures, through footprints and other tangible traces, but also the trails of birds and the passages of winds:

> Knowledge of the flight of birds is especially indicative of insight, because the path or trail which they leave across the sky is invisible. Similarly, the trail of a ship across the waters of the sea is a transient phenomenon, the trace which it leaves behind being much more impermanent than the tracks which terrestrial creatures leave behind. Knowledge of the procession of the months and the other units by means of which time is measured was surely considered a special knowledge – a science of intangible or fleeting things, just like the course of the winds. We can readily see why a god, or a priest for that matter, who has mastered such esoteric sciences would seem to be omniscient: these sciences require the

87 | *One Night the Moon* | **DVD** poster **|** 2001

interpretation of the signs of invisible, or at least transient, things.[109]

It is here, in the practice of tracking a moving body via an *invisible* trace, that the body is liberated from the deadweight of image-based graphic traces and from the silent obligation to be corralled within some kind of representational system. Here we might begin to imagine an architectural equivalent of the absent river stone by considering the range of impressions our moving bodies leave in space. There is, of course, a collection of tangible impressions in the earth in the form a vast series of footprints – the visible traces of our movement from which we can forensically describe our movement through space. There is also a collection of constantly evolving intangible impressions in air that our bodies leave as we endeavour to wrest a space for ourselves in the three-dimensional field of fluid air. Tracing these impressions is perhaps as mysterious and as difficult as tracking the shadow of the moon because they are invisible, intangible and in eternal motion, and each impression is constantly altered and erased by new impressions. In the face of such complexity, and in the spirit of Evan Roth's concurrent appearing and disappearing images of gesture, we might be content *not* to record, notate, draw or trace – but rather, like the tracker and the dancer, to sense, imagine and speculate.

[109] George Thomspon, 'The Pursuit of Hidden Tracks in Vedic', in *Indo-Iranian Journal* 38: 1--30, (1995), 13.

Part Four : Walk

Gravitational Space

In the act of an architectural space-making, that is, in a physical *doing* of the body and breath, the physical movement of the body might itself be what generates and constitutes architectural space. As our bodies cross with the world in the fleeting space of utterance, we simultaneously generate and inhabit a series of architectural spaces that disappear with our passage. As such, architecture ceases to be constrained by its edges, its materiality and its function, and instead becomes a choreographic score:

> This score is within all of us: it is the ensemble of breathings, pulsations, emotive discharges or mass displacements which are focused by our bodies. It is the geography of the influxes diffused around us by the imaginary vision of space, it is the quality of the relations that we can have with the objective givens of the real – the very givens that movement 'sculpts', embraces or disperses according to its own axes of intensity.[110]

Walking, in its most fundamental terms, is a score that can be read precisely as Louppe describes. It provides a way of understanding sites in flux in a manner that questions the assumed logic of making architecture in response to a series of static viewpoints,[111] so in order to investigate the prospect of architecture as a verb, a detailed consideration of walking practice is both logical and fruitful. Walking is movement, it is a doing of the body and breath; the body moves within space to the rhythm of the walking inspiration and exhalation, and as such focuses a relationship between the moving body, air and architectural space. In the practice of walking we may also find the practice of

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[110] Louppe, 'Imperfections of Papers' in Laurence Louppe (ed.), *Traces of Dance: Drawings and Notations of Choreographers*, 15.

[111] Rendell, *Art and Architecture: A Place Between*, 188.

architecture tends not towards the traditional and static conceptualisation of frozen music, but rather to more spontaneous, dynamic, interrelated and responsive structures.

As an everyday practice, walking is a basic form of human movement that enables a reasonably universal and unassisted method for the negotiation of space. Elements of repetition, pace, direction and intent come into play as we move through even the most uncomplicated spaces. As art practice, additional political, social, historical and geographic elements bring an added complexity that transforms everyday walking into a potentially powerful mode of expression, communication and space-making. Different modes of walking produce different modes of movement and breath, and these accordingly have different implications for the production of architectural space.

Movement analyst Jarmila Kroschlova states that walking is the most complex movement in the human body, as well as the most difficult to learn, and the most difficult to change.[112] Jan Zrzavy describes the three successive movements of walking, the 'peeling off', the 'swinging' and the 'double support'. Although the description is correct in its physiological facts, one is left feeling that walking is ultimately a mysterious act even when it is described so precisely:

> During 'peeling off' the leg, which is just behind, bends in the ankle joint towards the forefoot and stretches in the knee joint. The heel lifts first and then the whole foot peels gradually off the floor. By pressing the forefoot and the toes on the floor, this leg pushes the body forward and transfers the body weight onto the forward leg. The forward leg continues to place itself into a more

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[112] Jarmila Kroschlova, *Movement Theory and Practice*, trans. Olga Malandris with Zora Semberova, (Sydney: Currency Press, 2000), 273.

vertical position and eventually becomes a weight-bearing leg. The phase of the 'swing' begins after the complete 'peeling off' of the propelling leg from the floor. At the same time, the propelling leg is partly bent in all joints so that the vertical fluctuations are as small as possible. The leg swings forward, then gradually stretches and touches the floor, first with its heel and then takes over the support of the body from the other leg which starts to peel off the floor. When both feet touch the floor the phase of double support begins. The front leg (the supporting leg) touches at the heel and the back leg (the propelling leg) at the tip of the toe.[113]

In a similar vein, Paul Virilio discusses movement – and walking in particular – as a maintenance of instability.[114] For the most part, walking is a graceful act, a fluid and rhythmic movement that we hardly notice. We are blissfully unaware of our own instability as we negotiate pavements, slopes, staircases. We catch glimpses of this instability only rarely in the shock of a sudden fall. The realization of instability is lengthened significantly in the rhythmic wobble of someone about to fall out of a boat, or the arching stagger of a child who is dizzy from twirling around. These instabilities have a particular kind of inevitability about them – the person invariably ends up in the water and the child eventually falls to the ground. In these instabilities we see the inevitability of a catastrophe in which the loss of control of the body is so complete that the body appears almost as a foreign and unknowable mechanism. The runner, whose graceful and fluid instability is interrupted in the clipping of a hurdle, abruptly loses her stride and falls so slowly and so cataclysmically that her disheveled mass of limbs lies mute for a moment before summoning the coordination necessary for recovery.

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[113] Jan Zrzavy quoted in Jarmila Kroschlova, *Movement Theory and Practice*, 274.

[114] Paul Virilio, 'Gravitational Space' in Laurence Louppe, *Traces of Dance: Drawings and Notations of Choreographers*, 48.

In these examples it is clear firstly that instability is extremely difficult to maintain – perhaps *impossible* – once we become conscious of it. The moment when the child stops twirling is the moment in which she becomes conscious of her own instability, and from that point the stagger commences and the fall becomes inevitable. For the same reason, the physiological description of walking seems to describe an act remote and foreign, rather than the movement that comes easily to the majority of able-bodied people. Secondly, a complex rhythm is extremely difficult to re-establish without reverting to the beginning of the rhythmic cycle and starting again. It is perhaps akin to the recitation of the alphabet. We have a broad sense of which letter goes where, but to establish precisely the location of any particular letter, we must revert to an automatic recital from beginning to end, taking into consideration the rhythm and relative placements of all the letters. In this sense, the fundamental movement of walking is in fact a complex composition of forgetting and remembering - not just an automatic physiological act. Walking is an intricate choreography that draws together the conscious and unconscious body in movement within space – as such, walking practice becomes a testing ground for the detailed discussion of architecture as verb.

Virilio expands the sense of movement as the maintenance of instability into a notion of 'gravitational space' in which walking is conceptualized as an ongoing, rhythmic series of falls. Within the idea of gravitational space, the mass of our body – that is, the volume and the physical weight – constructs space through a continual series of physical displacements in three-dimensional space. Laurie Anderson's lyrics to *Walking and Falling* capture this cycle in its paradoxical continuity:

You're walking. And you don't always realise it, but you're always falling. With each step you fall forward slightly. And then catch yourself from falling. Over and over, you're falling. And then catching yourself from falling. And this is how you can be walking and falling at the same time.[115]

The displacement that results from the ongoing cycle of falling and catching oneself from falling, in turn, implies a temporal dimension in the sense that a mass that was *here* is now *there*. A space then opens up between these two positions, a space that has been carved through the liquid mass of air between *here* and *there*, and quickly closes over such that it can be overwritten with a subsequent mass displacement. Walking is thus a rhythmic disturbance of space caused by the displacement of mass – in walking, we enact a folding-through of the viscous air that after our passage eventually returns to its original continuous and pervasive state of being.

88 *Tripping Photo* | **Martin Kersels** | **1995**

By deliberately tripping in public, Martin Kersels, whose *Tripping Photos* (1995) appeared in Stuart Horodner's Walk Ways exhibition,[116] played on this sense of gravitational space. As the significant mass of the artist tumbled spectacularly to the ground, a wave of horror appeared to pass over the onlookers' faces, showing the shocking impact when the rhythm of walking is compromised. In Kersels' work, this shock is intensified because the bodily mass of the artist was particularly weighty. In witnessing the fall of a corpulent body, the sense of a space that was once occupied and then unoccupied is clear – as if in falling, air and space are somehow displaced. A gap between this moment and the last, and the body being there before being here, opens a gap in space – a gap that is fleeting, that

[115] Laurie Anderson, 'Walking and Falling' lyrics.

[116] See Stuart Horodner, *Walk Ways*.

dissolves as the shock of the fall eases and its memory recedes.

Francis Alÿs has also explored the idea of bodily displacement in a series of works in which the artist's usually brisk stride was interrupted with an 'accident'. In *Choques* (2005), nine hidden cameras on a street corner recorded nine points of view of one such accident. In this case, the staged accident is that of the strolling artist falling suddenly to the pavement, apparently after tripping over a dog. The first image in the series shows the artist, in focus, serenely walking along the street toward the camera, when he encounters the rapidly moving dog, which seems to cut across his path from left to right. Observed by a man sweeping a driveway, several pedestrians, a number of randomly wandering dogs and a garbage collector pushing a trolley, the moment of the fall appears strangely suspended in seven of the nine images. People and dogs seem to pause and watch as the body of the artist falls to the ground. In the eighth image we see the street from the dog's perspective – the fallen artist is not in the shot, but the dog is motionless and seems to be contemplating what has just happened. In the ninth image the artist lies deadly still on the pavement observed by the people in the street who seem – still – suspended in time in frozen open-mouthed postures of disbelief. The series of images capture a palpable spatial transformation in the sudden and shocking displacement of the artist's body. Moreover, the images compel a collective memory of the forgotten maintenance of instability necessary for the act of walking; the re-membering is registered through the shocked expressions on the observer's faces.

Just as Irigaray described the negative condition of airless space in order to realise the opposite and positive condition of air-filled space, so too must we

89 - 94 | *Choques* | **Francis Alÿs** | **2005**

95 - 97 | *Choques* | Francis Alÿs | 2005

conceptualise the forgetting and remembering of walking. The forgetting of walking – that is the rhythmic maintenance of instability – may be best communicated through the remembering which results in the physical fall, leap, stumble or trip. In that remembering, we come to terms with the notion of gravitational space. The gap between the fall and the avoidance of that fall is a displacement within gravitational space. One fall and the avoidance of it, followed by the next fall and the subsequent avoidance of it too creates a complex series of linked momentary spaces, carved from air with the moving body. As Laurence Louppe points out, the space-generating foundations of dance can be traced precisely to this notion of gravitational space – the fall is the generating movement, triggering a subsequent transfer of weight. The foundation of dance, or indeed of any movement, is therefore found within the quality of the vector of movement.[117]

William Forsythe has often engaged with the fall in his compositions. Just prior to the *Room Writing* project in which Forsythe's dancers challenged the authority of the architectural drawing, his 1988 work *In the Middle, Somewhat Elevated* compelled dancers to project all their movements towards an imaginary elevated object – a task that was ultimately beyond the physical capabilities of the body:

> With the shifting of the centre of gravity outwards the axis of the classical dance is also thrown off balance. As it falls, the body seeks to compensate gravity in order to try out the upright gait again from out of the position of the actual fall. While the trained body is still seeking its position, the hips begin to move in a circle; and in the middle of the movement the flow is interrupted abruptly.[118]

117 Louppe, 'Imperfections of Papers' in Laurence Louppe (ed.), *Traces of Dance: Drawings and Notations of Choreographers*, 39.

118 Johannes Odenthal, 'Danced Space: Conflicts of Modern Dance

The sudden transfers of weight, and the precariously oblique positions of the body in this piece bring an unprecedented dynamism to classical dance. By shifting the centre of gravity of the dancing bodies, Forsythe instituted a new rhetoric through the fall – a new space opened up, which like a vortex drew the spectator into play with gravity.[119] The fall of the trained body in ballet is, however, an infinitely more precise and disciplined fall than the fall of the ordinary walking body – the quality of the vector of movement is controlled in a way that it is not in a spontaneous fall. Where the bodies of Kersels, Alÿs, the dizzy child and the falling hurdler lose their sense of grace or control and carve a jagged space through air in their displacement of mass, Forsythe's bodies fall with such remembered precision that the space they carve through their dislodgment is in contrast a smooth and fluid space.

As in dance, the fall in walking is not always spontaneous or uncontrolled. Walking meditations have always been integral to Hinduism and Buddhism and these practices typically involve slow, extended walks in which the walker becomes extremely conscious of the act of walking. In meditative walking, the relationship between the mind and the body in motion comes into close focus. It is not that one attempts to have control over the physiological aspects of walking, but rather that one achieves some kind of forgetting of the body through the act of becoming acutely conscious of it. Drew Leder notes that if he attempted to walk by consciously manipulating all the proper muscles, he would soon find himself incapacitated – and further, if he tried to initiate his stroll by sending out certain nerve signals from the cerebral cortex, he would not

Theatre,' *Daidalos*, v 44, (1992), 45.

[119] Ibid., 45.

even know how to begin.[120] The rhythm found in meditative walking comes firstly through the focused awareness of the physical connections and sensations of walking, and the subsequent attention to mental and emotional states. In a walking meditation, it is only possible to access the mental and emotional states once the rhythm of the walking body has been established. In this sense, the conscious remembering of the physical processes of walking induces a kind of forgetting akin to a meditative state. Similarly, novelist Haruki Murakami writes of long-distance running that acts like a catalyst in the acquisition of a meditative state. Often asked what he thinks about when he is running, he answers that he runs in a void. He quickly corrects himself however, noting that the void does not come before the run – rather, the run enables the void: "I just run. I run in a void. Or maybe I should put it the other way: I run in order to acquire a void."[121]

In each of these scenarios, from Forsythe to the meditative walkers to Murakami, there occurs an opposite process to that of Kersels, Alÿs, the twirling child and the hurdler. Rather than the sudden remembering within the state of forgetting that dramatizes their falls, the dancer, the meditative walker and the runner engage in a conscious process of remembering in order to forget. In these processes, the awareness of the body is so heightened that through time it actually engenders a state of forgetting. The maintenance of instability, the fall, and ultimately the notion of gravitational space are what characterize the configuration of walking as a mode that generates architectural space. The walking body, caught within the controlled and the uncontrolled fall, crosses space in a dynamic way – it transcends the Cartesian

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[120] Leder, *The Absent Body*, 20.

[121] Haruki Murakami, (trans. Philip Gabriel), *What I Talk About When I Talk About Running*, (London: Harvill Secker, 2008), 17.

grid through gravity and disallows any sense of objective movement within predetermined space. In the consideration of the walking body, any sense of a predictable and pristine space is comprehensively banished in **favour of a dynamic and instantaneous** space in which the moving body, with its gravity-controlled trajectory, takes precedence over any spatial system that is conceived independently of the body.

The Production of Nothing

Aspects of forgetting and remembering penetrate other elements of walking beyond the physical act of walking itself, and it is worth discussing these in some detail in order to conceptualise the possible 'products' of architecture – if it can indeed be understood as a verb (a physical doing of body and breath). One of the major points of misunderstanding of the practice of walking artists, has been what is or should be presented in a gallery context, and what relevance that context has when it is a walk that has been 'made', and not an enduring or tangible art product. The notion that an act of production can lead to nothing, and that the 'nothing' is actually of worth, is pivotal in considering how walking generates architectural space.

Architecture, perhaps more so than art, has traditionally relied upon tangible outcomes to communicate its core concerns – not least because the provision of shelter is thought of as being the primary purpose of architecture.[122] Built works are quite obviously located within the realm of material realities, and unbuilt works typically aspire to the same. Even the most conceptual works of architecture are constantly framed within questions of buildability and functionality, not only by architectural critics, but by

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[122] Mallinson, 'Metaphors of Experience: the Voice of Air', 152.

architects themselves. But how appropriate are the assumptions between architecture and tangibility in the contemporary climate of immateriality, when the term 'architecture' is used to describe any number of structural systems, including intangible structures such as the World Wide Web? New media theorist Lev Manovich takes the view that the currency of tangible products is rapidly changing, and that the augmentation of space to somehow include intangible data and information structures is essentially an architectural problem.[123] For architects, the production of nothing – that is, nothing *tangible* – must necessarily involve a substantial shift in logic. It is crucial to grasp the idea that if architecture is to be understood as a verb, as a doing of body and breath that doesn't necessarily result in a tangible product, then it must emanate from the crossing of the body in space in the first instance. Through that understanding, architecture is let loose from the demands it places on itself. By adjusting the expectation of what constitutes production in architectural terms, we may come to realise that if architectural space can be produced from a crossing of body and space, then it may not ever necessarily result in a physical, material product.

Francis Alÿs is an architect by training, yet has found fame through his work as a walking artist. Much of his work might be understood in terms of the production of architectural space through the movement of the body. As Alÿs negotiates urban environments on foot, he choreographs the movements of people through space, establishes and questions territories with the passage of his body, and attempts to corral fleeting phenomena and experiences. *Paradox of Praxis 1* (1997) is very explicit in the communication of the fact

98 - 99 | *Paradox of Praxis 1*
Francis Alÿs | **1997**

123 Lev Manovich, 'The Poetics of Augmented Space', www.manovich.net.

100 - 105 | *Paradox of Praxis 1*
Francis Alÿs | **1997**

that perplexes so many about walking practice, that "sometimes making something leads to nothing."[124] In the work, Alÿs pushed a large block of ice around Mexico City for an entire day until the ice was completely melted. Images show that at the beginning of the day, at 9.15am, the artist was hunched over the ice and pushing it along the street with tremendous effort. His walk at this time was almost horizontal with his arms and shoulders straining as he set his own bodyweight against the weight of the ice. As he pushed the block of ice the increasing air temperature and the friction over the ground surface caused the ice to slowly melt, and as the shape and scale of the ice changed so too did the walking posture of Alÿs. By mid-afternoon the block of ice was halved in volume and the artist was able to push it with his feet. By late afternoon it was reduced to the size of a small ball, which Alÿs seemed to gaily kick along the footpath as if it were a football. The trace of the passage of the ice had changed throughout the day too. What was a thick wet line along the pavement earlier in the day became a staccato series of splashes where the ball of ice made contact with the ground. The final image at 6.47pm, is that of a misshapen wet puddle. The walk had been made; the ice had melted completely. The residual water, which had formed the trace, had also evaporated and all traces of the walk were gone with the exception of the documentary images. A whole day of working with *something* had eventually concluded with its slow and complete erosion; a whole day of production had resulted in *nothing*, in the transformative absence of what was previously there. We can understand this intriguing practice as the production of architectural space through the body: it is the fleeting space of Morris's crossing and of de Certeau's utterance, the

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[124] Cuauhtémoc Medina, Russell Ferguson, Jean Fisher, *Francis Alÿs*, (London: Phaidon, 2007), 46.

106 - 109 | *Paradox of Praxis 1*
Francis Alÿs | **1997**

110 | *When Faith Moves Mountains*
Francis Alÿs | **2002**

space that forms and then collapses with the passage of the body.

Another work by Francis Alÿs that establishes his use of walking practice to produce nothing, or at least very little, was the monumental project *When Faith Moves Mountains* (2002). In this project, the artist's motto was "maximum effort, minimum result."[125] Five hundred people were engaged to form a line five hundred metres long along the top of a sand dune in Peru, and to then each move one shovel of sand ten centimetres forward of the line. The project involved an enormous amount of labour in coordinating numerous collaborating artists, filmmakers, and hundreds of voluntary participants, as well as a significant walk to get everyone to the top of the sand dune in order to perform the work. *When Faith Moves Mountains* is a small but powerful gesture with an enormous effort of production behind that collective single step with one shovel of sand. Although the actual physical outcome is minimal, there is not, as Russell Ferguson suggests, an inherent futility in such gestures.[126] Again, we see that sometimes the intensive making of something leads to nothing, or almost nothing, but within that process a significant spatial transformation has taken place. Architectural space has been spontaneously produced through a series of gestures and then lost as those gestures cease.

In his pursuit of the interstitial conditions between something and nothing, Alÿs consistently locates his practice at the edge of the unknowable or unattainable. In the ongoing project *Tornado* (working title, commenced 2000), Alÿs chases down the small tornadoes that spontaneously form in the corn fields on

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[125] Francis Alÿs quoted in Cuauhtémoc Medina, Russell Ferguson, Jean Fisher, *Francis Alÿs*, 48.

[126] Ibid.

111 - 116 | *Tornado* | **Francis Alÿs** | 2000

the south-eastern edge of Mexico City after the annual burn and harvest in March. In an effort to photograph their interior space, Alÿs sprints across the landscape but remains constantly aloof as the ashy tornadoes spin away from him. There is a distinct quality of impossibility in his pursuit of the tornadoes, especially considering that the project is now in its tenth year. Similarly, in *A Story of Deception* (2003 – 2006), Alÿs pursues horizon mirages in Patagonia. Again, the work has the distinct flavour of impossibility and a sense that the artist aspires to something that cannot be defined or captured:

> While one approaches it, the mirage eternally escapes across the horizon line, always deceiving or eluding our progress, inevitably preceding our footsteps. It is a phenomenon of constant disappearance, a continuous experience of evasion. Without the movement of the observer, the mirage would be nothing more than an inert stain, an optical vibration in the landscape.[127]

In Alÿs's work we find a persistent crossing of the body and space that is precisely the kind of dynamic and unfolding space that de Certeau describes in *The Practice of Everyday Life*. It is the architectural space created by the body with its intersecting mobile elements of vectors of direction, velocities and time variables. As such, in Manovich's terms, Alÿs's practice augments the urban space of Mexico City and as such could be considered to be an architectural practice. Indeed Alÿs fits the model of the architect as Virilio describes it in *The Aesthetics of Disappearance* – that architecture must now be found not in the classical realm of revered objects, but rather in the space-time of vectors.[128] Both Manovich and Virilio anticipate a

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[127] Ibid., 52.

[128] Paul Virilio, *The Aesthetics of Disappearance*, trans. Philip Beitchman, (New York: Semiotext(e), 1991) 64.
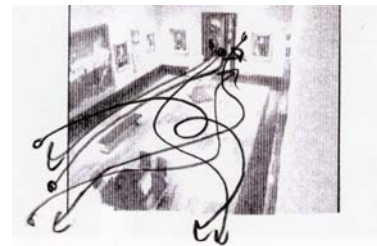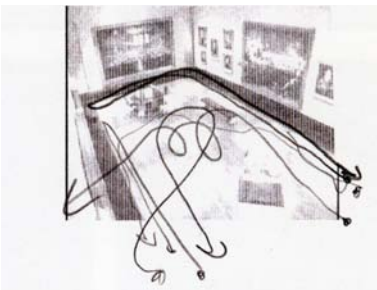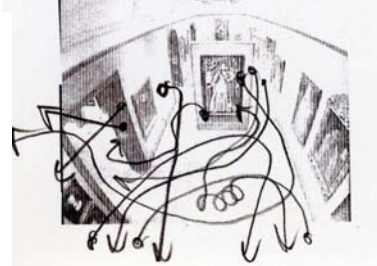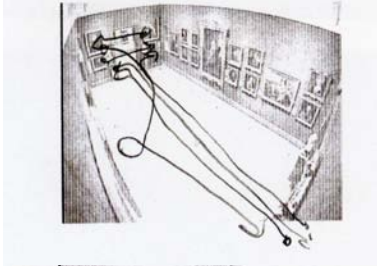
117 - 120 | *Nightwatch* | Analysis of CCTV footage | Francis Alÿs | 2004
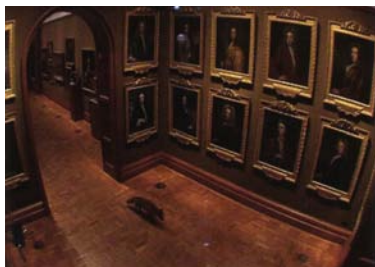
121 | *Nightwatch* | CCTV image Francis Alÿs | 2004

fluid material-less space of directional information and data, and of spatial happenings that have no particular physical site or tangible dimension. The anticipation of such a space forces a confrontation and a reconsideration of tangibility and intangibility in architectural space as the tangible cornerstones of architecture, such as material and site. In the absence of actual material exchanges and constructions there can only be a memory of what has transpired – in the case of Alÿs it is the memory of a vector as articulated in his 2004 project *Nightwatch*; a mysterious, absent, traceless presence that moved from one point to another.[129] For what does Alÿs produce if not vectors?

Most notably in her audio walks, Janet Cardiff is another artist who deals in vectors. Listeners are provided with headphones in which Cardiff's voice issues sets of walking instructions that enable the listener to navigate through particular sequences of spaces. The spaces the listener passes through are filled with ambient sounds such as footsteps, traffic, ringing phones, the sound of rain, and snippets of other people's conversations as they walk past. These sounds, create new spaces within the space of the recorded walk. As with Alÿs's walks, the space of the city is augmented through the walking practice of the artist, which is in this case, enriched through the subsequent walk of the listener:

> Turn left onto the main road. Now there's peanut sellers, and the squatters are doing tightrope walking on lines drawn across between the trees. Do you hear that? They're shooting the scavengers, the wild goats and pigs. They were supposed to eat the garbage in the city streets, but they keep coming into

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[129] On the night of April 7, 2004, Alÿs released a fox in the National Portrait Gallery in London. Its movements were reconstructed using the institution's CCTV footage. See Cuauhtémoc Medina, Russell Ferguson, Jean Fisher, *Francis Alÿs*, 60.

the park to eat the grass, so they have to shoot them. At this very moment there is an organ grinder in the street. It is wonderful. It is the accidental and insignificant things in life which are significant. Kirkegaard wrote that. He was a walker. Every day for many hours he would wander through the streets of Copenhagen. I want to show you another of my experiments. Stop. Turn around. And now slowly walk backwards, one foot back and then the other. Very slowly. It feels like you're in a video and being rewound in slow motion, doesn't it. You can turn back now, and then keep walking. There's a lot of strollers here. It must be the time of day when the nannies come out.[130]

The works demand patience, a letting-go of object and end-point, a surrender to the sounds of the city and a slowing of pace incited by the sound of Cardiff's footsteps in the recording. Slowly the actual sounds of the walked space are layered with Cardiff's own reflections on the spaces of passage, and then often layered again with fictional interpretations of real sounds and other random narrative fragments. For Lev Manovich, Cardiff's walks present the most comprehensive realisation of how physical space is consistently overlaid with intangible layers of information that enrich and expand architectural space:

> They [Cardiff's walks] demonstrate the aesthetic potential of laying new information over a physical space. Their power lies in the interactions between two spaces – between vision and hearing (what the user is seeing and what she is hearing), and between present and past (the time of the user's walk versus the audio narration, which, like any media recording, belongs to some undefined time in the past).[131]

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[130] Excerpt from 'Her Long Black Hair' (2004), www.cardiffmiller.com.

[131] Lev Manovich, 'The Poetics of Augmented Space', www.manovich.net.

The layering of fiction and reality in Cardiff's walks creates altogether new experiences of physical spaces – the impartial physical space of the city is activated through the fourfold crossing of the listener's bodily walk and their intake of present ambient sound, the sound of Cardiff's walk and her intake of past ambient sound, her random narrative fragments, and the location of the bodies of both the listener and Cardiff in one particular space at two particular times. This complex crossing creates a unique architectural space that exists only for an instant as the constituents of architectural space align. There is no record of this complex space that emerges – just the strange sensation of having experienced an intricate confluence of fleeting moments that cannot be repeated or represented. In this sense, Cardiff's walks can be understood as fables, where the impossibility of replicating the confluence of moments transforms the experience into a contemporary spatial myth. Once again, aspects of impossibility, absence, forgetting and remembering are at the core of this walking work.

Francis Alÿs has also been said to engage in the production of contemporary fables through his walks, and sometimes leaves a legible trace as part of his walks. In the same way that Cardiff's voice layers a literal narrative through her audio walks, the trace in Alÿs's work also functions as a plot or storyline that brings a particular shape to his walks. In *Fairy Tales* (1995-1998) Alÿs walked through Stockholm wearing a blue knitted sweater with a loose thread. As the walk progressed the sweater slowly unravelled, leaving a neat track of blue thread articulating the walk and simultaneously revealing more of the artist's upper body. When the sweater was completely unravelled and the walk was finished, Alÿs retraced his steps to document the journey. Midway back to the starting

122 | *Fairy Tales* | Francis Alÿs
1995 - 1998

123 | *The Green Line* | Francis Alÿs | 2004

point, he met an old lady who was patiently rolling a ball of the blue thread, possibly to knit a similar sweater at home.[132] Similarly, in *The Leak* (1995) Alÿs set off from a gallery carrying a can of paint with a small hole in the bottom and followed a random meandering path through the São Paulo. When the paint had completely leaked away, he followed the trail back to the gallery and hung the empty paint tin on the wall of the exhibition space.[133] This relatively benign action takes on a new meaning depending on the environment in which the action is performed: in *The Green Line* (2004) a similar gesture is played out in utterly different circumstances with a profoundly different meaning. Again carrying a tin of leaking paint, Alÿs walked through Jerusalem along the municipal divide between Israeli and Arab territories known as the Green Line. What was an innocent, playful act of marking a drift in São Paulo had now become a poignant political statement concerning the arbitrary division of territory between warring neighbours.[134] In changing just one of the components of the walk – in this case, the geographic location – the confluence of body, space and motion is dramatically altered and an altogether different kind of architectural space emerges. A playful, whimsical spatial narrative is turned into a bold territorialisation.

Some of Domenico de Clario's walks could also be classified as contemporary fables. Though not re-enactments as such, two walks in 2003 and 2004 were carried out in order to remember the walked passage of Biagio, an Italian migrant, who walked from Fremantle to Kalgoorlie in 1956. Distressed at the loss of his homeland, and inconsolable throughout the long ocean

[132] Cuauhtémoc Medina, Russell Ferguson, Jean Fisher, *Francis Alÿs*, 29.

[133] Ibid., 74.

[134] Ibid., 40.

journey from Trieste to Fremantle, Biagio left the ship and set off on foot to walk inland to Melbourne. In the walk entitled *Breathing for Biagio Walking* (2003) de Clario walked 200km from Perth to Kellerberrin in an act of homage to Biagio:

> The reason I'm doing this walk is to try and understand what Biagio saw and how he might have died. I'm walking to Kellerberrin to retrace the steps that took him inland into the great South. I will be wondering as I walk just what he might have seen, what he might have felt walking through this country, in some ways not unlike the great South in his own country, the great wheat fields of Sicily's central plateau where the Romans over two thousand years ago had planted the wheat that was to fill the empire's granaries for centuries.[135]

In 2004 de Clario performed the second part of the walk, titled *Terminal (Breathing for Biagio Walking)* at the Sydney Myer Asia Centre at the University of Melbourne. In the performance, de Clario walked continuously for twelve hours on a figure-eight circuit throughout the building. The next day, barely able to walk after the performance, de Clario stood and told a large gathering of people about Biagio and about his walk. There were no photographs, no videos, just an artist who'd clearly been through an intensely physical process, and the telling of a story reflecting the interrelationship of temporal and geographic spaces brought together through a walk. The parallels between Biagio's walk in 1956 and de Clario's in 2003 and 2004 resonate through time and space, causing the vector-space of the walks to oscillate between past and present. The augmentation of space enacted through Biagio's walk, and the subsequent augmentation of an already-augmented space by de Clario creates what

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[135] Domenico de Clario, text accompanying the performance *Terminal (Breathing for Biagio Walking)*, Sidney Myer Asia Centre, (University of Melbourne, 2004).

Deleuze refers to as a spatial 'perplication' – a complex folding through or folding across reminiscent of *shibori* processes: "...the fold creates a different kind of 'flow' – the flow of an energy that the bounded space seems to be impeding, that is spilling over into its surroundings, interrupting the calm narrative of its context and so opening new readings in it."[136]

Werner Herzog's introspective text *Of Walking in Ice*, made during his three week solo walk from Munich to Paris in the winter of 1974, reflects a similar spatial possibility of folding through or folding across. Herzog made the walk to see his friend, Lotte Eisner, who was terribly ill, and did so in the belief that the walk would somehow save her. The text is deeply personal in a way that Cardiff's and Alÿs's walks are not, and reflects with confronting honesty the intense cycles of elation, misery, connection and loneliness of a walk. Herzog's philosophical musings and conversations with himself are interspersed with whimsical cinematic descriptions of people and situations observed or encountered along the way. Each line reads like a filmic scenario suggesting a plethora of possible spatial situations, none of which are played out beyond the single lines of text that trigger a series of imagined images:

> Today I have often said 'forest' to myself. Truth itself wanders through forests.[137]

> I won't stop walking until I am there.[138]

> A blind beggar played the accordion, his legs covered with a zebra-striped blanket below the knees.[139]

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136 John Rajchman, *Constructions*, (Cambridge, Mass.: MIT Press, 1998), 26.

137 Werner Herzog, *Of Walking in Ice: Munich – Paris 11/23 to 12/14 1974*, trans. Martje Herzog and Alan Greenberg, (New York: Tanam Press, 1980), 48.

138 Ibid., 53.

139 Ibid., 56.

Herzog's text reads as a kind of rural *flânerie* in which the privileged, thoughtful and detached observer witnesses certain events and happenings in society during his passage through an unfamiliar territory.[140] These observations have a surreal quality and the oscillation of the vector-space of the walk is not between past and present as it is in de Clario's work, but rather between the present and an imagined narrative or spatial sequence. In locating the vector-space of the walk between the present and the innumerable imaginings of the reader that are fed by alluring fragments describing the present, Herzog forces a break within a banal physical reality and instead offers an alternative of a vast and untethered spatial experience. A folding-through or folding-across becomes a folding-open, an unfolding, in which three-dimensional space is completely unbounded and released from the pressures of a material reality.

Simon Pope's *London Walking: A Handbook for Survival* also reads as a form of *flânerie* that reconfigures our perception of the ordinary spatial landscape. Throughout the book Pope offers the perceptive and often humorous observations of a contemporary wanderer, and presents himself as someone who delights in the trivial amusements of the city:

> Late at night, especially in the more leafy, residential areas of London, you may hear the plaintive tone of the blackbird or robin. Under normal conditions, you would expect them to be in full song at 5.00, but they have been known to start to sing in the very early hours, often as early as 2.00, confused by the orange glow in the sky as to whether it is nature's dawn. Their song can be used to generate

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[140] See Rebecca Solnit, *Wanderlust: A History of Walking*, (New York: Penguin, 2000), 199, where she discusses the fact that Benjamin never fully defined the **flâneur, but rather only associated him with** certain things such as the negotiation of once-familiar urban territory that had become increasingly novel as a result of industrialisation.
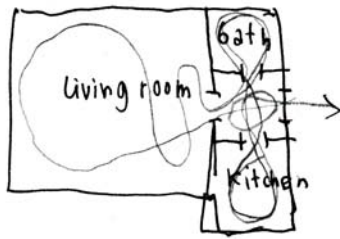
124 | *Walk Your Flat* | Simon Pope | 2000
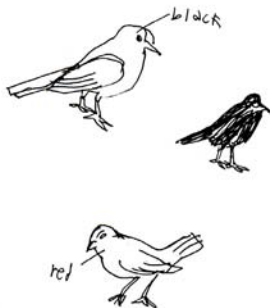

125 | *Zoned Walk Illustration*
Simon Pope | 2000
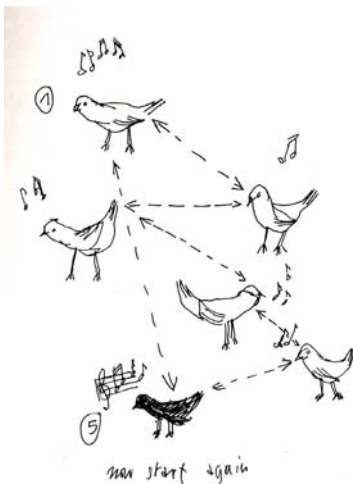
126 | *Zoned Walk Illustration*
Simon Pope | 2000

a zoned walk: these birds are aggressively territorial and keep strictly demarcated areas for themselves. Listen to them in the early hours of the day when they might be the only birds singing and you will be able to hear one local bird, and, calling in response, one distant bird.

Rules:
1. Find a local bird. Walk towards it, until it sounds louder than any other bird.
2. Listen as it calls. There will be a distant reply from a neighbouring bird of the same species.
3. Walk towards the neighbouring bird and away from the local one.
4. Keep walking until the neighbor becomes the new local bird.
5. Repeat 1.[141]

The image of Pope's walking game is not unlike the image of Alÿs's determined but ultimately futile chase of tornadoes in the Mexican cornfields. Here again, the pursuit of the unattainable in walking practice points to the existence of traceless vector-spaces that exist beyond the world of material architecture.

Pope's work goes further than mere observation in the sense that it comprehensively documents the different modes of walking found in London; as such it is an engaging record of pedestrian movement within the city in the early 21st century. Pope makes connections between particular districts of London and particular kinds of walking – walking too fast through heritage properties, for example, is likely to draw the ire of other walkers, just as walking too slow in the red light districts is highly likely to land the innocent flâneur in some trouble. In contrast, Benjamin's *flânerie* is perhaps less of a reflection of Paris and more of a portrait of a state of mind useful in its navigation. Distinctly European, the

[141] Simon Pope, *London Walking: A Handbook for Survival*, (London: Ellipsis, 2000), 49.

flâneur is intrigued by the mysteries of a city growing more and more unfamiliar. If we use Alÿs's practice of relocating a walking act to a different time and place, we find that transplanted in an American city, the *flâneur* becomes somehow combative, as he stalks the fast-paced streets of decentralized cities, defending a territory. Transported to Mexico, he changes again and becomes more like a scavenger, feeding on the observation of a raw and unrefined humanity.

Like Benjamin's *flâneur*, the Situationists were also concerned in discovering something of the mystery of the industrialized city. In particular they were fascinated with the derelict, the subverted, the hidden, and the gruesome aspects of the city. Where perhaps the product of the *flâneur* was a reflective reading of the city, the Situationists were much more active in their cartographic constructions. "Rather than float above the city as some sort of omnipotent, instantaneous, disembodied, all-possessing eye, situationist cartography admitted that its overview of the city was reconstructed in the imagination, piecing together an experience of space that was actually terrestrial, fragmented, subjective, temporal, and cultural."[142]

The aimless open-eyed drift through the city for the Situationist International, (the *dérive*), was more focused on encounter than other modes of urban walking discussed so far. It was very much directed towards 'conquering' unknown or untamed facets of the city. Aspects of endurance and intensity were at play as drifts became longer and longer, sometimes engulfing the itinerant walker continuously for months at a time. The desire for some kind of power born directly of this sense of endurance and intensity

127 | *The Naked City* | Guy Debord | 1957

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[142] Simon Sadler, *The Situationist City*, (Cambridge and London: MIT Press, 1998), 82.

separates a Situationist from most other walking artists, and though the spirit of protest runs through many walking practices, the drive toward urban and spatial revolution is a core component of Situationist activity. It is clear they desired political power, but within some Situationist texts there are also overtones of power as it relates to violation – indeed in one of his texts Guy Debord likened the *dérive* to the rape of a city,[143] a metaphor which is not only in extremely poor taste but which also utterly erases the sense of egalitarianism that is so characteristic of most walking practices. In a Situationist's walking, and most particularly in the practices that sought to disrupt, breach and defile, the vector-space becomes less of a folding-through, folding-across or folding-open, and instead becomes a folding-under, as if the act of walking in the city is analogous to the scratching of a surface which conceals a space of inestimable depth. Constant's drawings and collages go some way in revealing this space with their complex layers, geometries and experiential spheres.

Vito Acconci's *Following Piece* (1969) also had a flavor of violation to it, albeit in a quieter, more anonymous and less aggressive way. In the month of October 1969, Acconci followed a random individual every day for twenty-three days, selecting individuals on the street and following them until they moved from the public sphere into the private sphere. The followings lasted from a few minutes to a few hours depending on the individual's activities – if they got into a car the following was over in a matter of minutes, but if they went into the cinema the pursuit could last for many hours. At the conclusion of each pursuit Acconci typed up accounts of each event and each time sent them to a different member of the art community. The accounts are strictly minimal and factual, describing only the

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[143] Ibid., 80.

barest features of the individual who was followed and her/his particular itinerary:

Oct 18 1969

12:12PM, 10th St & 6th Ave, SE corner: Man in tan jacket – he walks S on 6th Ave.
12:23PM: he goes into Whelan's Drug Store, 6th Ave & 8th St.
12:38PM: he leaves Whelan's and walks E on 8th St, N side of street.
12:40PM: at McDougal St, he crosses to other side of 8th St and sits on ledge outside Paperback Booksmith's, 30 W 8th St; he spends next few hours there, looking around and talking to passers-by.
4:28PM: he and woman in b lack cape walk E on 8th St, S side of street.
5:05PM: they turn S on Ave B, E side of Street.
5:09PM: they turn E on 5th St, N side of street.
5:12PM: they enter apartment building, 725 E 5th St.[144]

The short daily texts and very occasional photographs of the followings reveal that the Following Piece was a form of *dérive* directed by the movements of a total stranger. There is nothing to indicate that the individuals being followed were ever aware of the situation, which to some extent mediates the predatory tone of the work – but the piece was nevertheless predicated upon the violation of the sphere of anonymity that was common to all occupants of cities. Interestingly, the *Following Piece* was never presented publicly as an artwork, a fact which aligns this work with the work of other walking artists who produced negligible records of their practice. Like Alÿs's *Leak* works and Pope's walking game, *Following Piece* can also be seen as a zoned walk in which the artist established a number of parameters which governed the shape and outcome of the walk. These zoned walks

128 | *Following Piece* | **Vito Acconci** | **1969**

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[144] Vito Acconci, Following Piece text, www.designboom.com/eng/interview/acconci_followingtext.html, accessed 08 March 2009.

are much easier to read in terms of their architectural languages than some of the other walks discussed so far as they tend to focus on some of the conventional dualities which architects so favour – here/there, inside/outside, public/private.

Many relatively recent walking practices reveal a strange fixation with locational media. Although spatial exploration and description relative to the body are central the idea of defining a 'location', these practices seem to aspire to some level of objectivity and as such tend to offer more simplistic spatial possibilities than those practices discussed so far. Where Acconci's neat and precise descriptions of the geographic position of his subjects played out in great lists of words, artists who employ locational media technologies increasingly turn to devices such as Global Positioning Systems (GPS) and conventional cartographic methodologies, in order to reflect upon the spatial dimensions of walking.

As participating members of the public walk within their community, Jen Hamilton and Jen Southern (Canadian and British collaborative art practitioners) use GPS devices to generate live maps. Their central concern revolves around the performative aspects of place, and how the GPS does or does not imbue that place with a sense of individual meaning. Emma Posey notes in her catalogue essay for a Hamilton/Southern exhibition that the exclusive use of GPS methods in walking practice conveys very little meaning beyond what is immediately obvious in terms of geographic location. "GPS is an objective device, determining co-ordinates to denote a location. Co-ordinates present locations as if they are uninhabited – their configuration eludes an individual's perception and recollection associated with locations."[145]

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[145] Emma Posey, 'Memory Maps', in *Distance Made Good*, exhibition catalogue, The Gallery, Stratford-on-Avon, UK, 2002.

In their exploration beyond the geographic location, Hamilton and Southern endeavour to remedy the shortfalls of their own methodology in order to examine relationships between the local walker, the GPS track and the interpretative position of the artist. As the participant sets out with her GPS, Hamilton and Southern read and record the live tracks in the gallery through empathetic mapping acts of stitching, drawing and threading that simultaneously acknowledge and interpret the path of the walkers. The GPS tracks themselves are ineffectual in articulating anything more than a rational geographic position via coordinates, but the synchronised actions of the artists draw out broader patterns of urban walking behavior across a community. In theory this is potentially an interesting mode of practice, as the vector-space of the walker is interpreted through the empathetic movement of the artist, and through this, one vector-space enfolds another – and yet the resulting maps are strangely impartial and unmoving in temporal, spatial and imaginative terms.

At the core of all contemporary walking practices, there are two key British figures who commenced in the 1960s without the aid of GPS devices, video cameras, film crews, vehicles and entourages and who are widely regarded as having shaped the field of walking art. Hamish Fulton and Richard Long harboured no delusions of grandeur, territorial aspirations or notions of power over people or landscape – in the early days of their individual works, they simply walked alone and unaided. In 1967, in the midst of a journey between his home in Bristol and St Martin's School of Art, Long stopped in a field in Wiltshire and walked backwards and forwards in the grass until a line of flattened grass became visible. He took a photograph

129 | *A Line Made by Walking*
Richard Long **|** **1967**

130 | *Little Big Horn Battlefield*
Hamish Fulton **|** **1969**

131 | *Karoo Line, A Fifteen Day Walk in
South Africa* **|** Richard Long **|** **2004**

of the grass and called it *A Line Made by Walking*.[146] Simultaneously, Hamish Fulton made a hitch-hiking journey from London to Andorra and back again with two classmates from St Martin's, travelling continuously and documenting places reached and the time taken to get there. Then, in 1969 when he was asked to leave the Royal College of Art for non-attendance, Fulton travelled to the United States where he pursued an interest in the Sioux and Cheyenne Indians and walked in South Dakota, Wyoming, Utah and Montana. Here, in Montana, Fulton made his first decisive moves into walking art with the image *Little Big Horn Battlefield*, which showed his body in relation to the landscape beyond.[147]

Each of Fulton's walks ever since has been a conscious journey of repetitious physical movement conducted in a number of geographic contexts throughout the world. Fulton adheres to a 'leave no trace' wilderness ethic and does not make interventions in the landscape. It could be said that Fulton aims to leave no memory of himself in the landscape, as an acknowledgement of his transitoriness and the temporary crossing of body and space, as if the forgetting of his passage is an important part of the act of making a walk. He says,

> Walking is not about recreation or nature study (or poetry – or 'stopping' to make an 'outdoor sculpture' or 'take' photographs). It is about an attempt at being 'broken down' mentally and physically – with the desire to 'flow' inside a rhythm of walking – to experience a temporary state of euphoria, a blending of my mind with the outside world of nature…. I walk on the land to be woven into nature.[148]

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[146] www.tate.org.uk, accessed 13.03.09.

[147] Ben Tufnell and Andrew Wilson, *Hamish Fulton Walking Journey*, (London: Tate Publishing, 2002), 113.

[148] Ibid., 27.

132 | *Boulder* | Hamish Fulton | 1969

133 | *Borderlines* | Hamish Fulton | 1999

134 | *Slowness* | Hamish Fulton | 1999

Fulton's gallery works act as signposts or allusions to an impossible other – a pile of rocks, a view of the path ahead. One could understand only the barest things about the walk from the images – they are not intended to describe or document the walk. Rather, it seems the images are only intended to, and only can, hint at a particular geographic context. The images, when presented in conjunction with the bare, descriptive texts that Fulton writes in his notebook enroute, serve to stir the imagination rather than to communicate particular things about that particular walk. The walk is his, it is unknowable to us, but through occasional images and words, we can construct a walk in our own minds, triggered by these offerings that Fulton presents. The distance created through this impossibility forces an acknowledgement of an individual, transitory and ultimately private experience that in turn incites our own reflection on our own individual experience. In this movement, between the impossible other and the knowable self, Fulton deftly shifts the focus from 'the artwork' to the self, the viewer of the work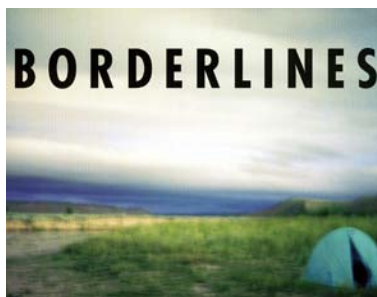, by asking us to consider our own walks and modes of being in the landscape. Through this logic, it is clear to see why Fulton constantly rejects the title of 'land artist' or 'environmental sculptor' in favour of the term 'walking artist'. Things are of little consequence.

While Long and Fulton may have started their careers with a significant sense of commonality concerning minimal documentation and representation, the recent work of Richard Long has shifted toward a sense of the material and its symbolic properties. Fulton has often been referred to as 'the poor man's Richard Long', a comparison that is both unfortunate and incorrect as there is now in fact a profound disparity between

135 | *UK Coast to Coast Walks Map*
Hamish Fulton | **1971 - 2001**
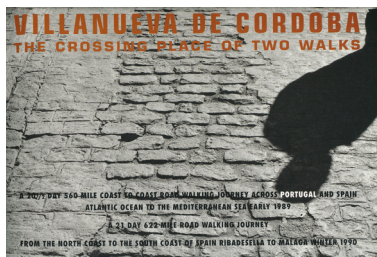
136 | *Villanueva de Cordoba, The Crossing of Two Walks* | Hamish Fulton
1989 - 1990

137 | *Ontake Summit Clouds*
Hamish Fulton | **1988**

the two practices.[149] Long still walks within landscape, but shifts attention away from the experience and onto objects that he makes along the walk, or into the gallery where he works with materials gathered from the walk. Some of the work responds to the very gesture of walking, but this attention to the physical gesture is subsequently lost through the larger body of work of lines and circles constructed of stones, sticks and mud that speak more of a conscious gathering and arranging process.[150] In Long's work the walk shifts from being unknowable or impossible and becomes something that is shared with an audience through material expression. Therefore, in this sense, Long's work has obvious resonances with the terms 'land art' and 'environmental sculpture' – resonances that are entirely absent in the work of Fulton whose central mode of practice has not evolved or become more complex in the past forty years. In Long's work, to mark the landscape during a walk has always been a core component of his practice. In this sense, *the experience* and *the thing* are innately connected; one contextualises the understanding of the other, and physical material signifies another parallel and more internal experience.

In the broader context of the 'production of nothing', which is so common among walking artists, Fulton's conscious choice to consistently withhold and to internalise is as intriguing today as it was the late 1960s. If the immaterial can be construed as the unsaid or unsayable arising out of individual experience, then ultimately, Fulton's practice can only be understood as a

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[149] James Hall, 'Hamish Fulton, in *Artforum*, Volume 40, Issue 9, (New York: May 2002) 192.

[150] For example, see the constructed stone lines made in on walks in Japan (1974), Australia (1977), Scotland (1981), Iceland (1982) and Nepal (1983). Water lines made in Ladakh (1984), also draw attention to the object and the orchestrated gesture of making rather than moving – even more dramatically illustrated in the arrangement of material lines of chalk, slate, sticks, stone and marble in galleries from the 1970s on.

138 | *Richard Long in the Field*
photographer unknown | date unknown

reflective and internal journey that in its true dimension cannot be shared. In this sense, Fulton is a monk-like traveller abandoning himself to a journey within the world in which a sense of product or endpoint is unimportant, or at the very least is secondary to the internal, invisible experience of the walk. This is no less true of his recent 'assisted' walks than of his rambling backcountry walks of the 70s, 80s and 90s.[151] In Fulton's work, perhaps more so than in any other contemporary walking practice, we find that the making of the walk is essentially the making of nothing except the walk itself. It is not and does not need to be more than that and in this sense is as close as we may come to a pure space-time vector produced by the walking body.

Another walking practice that produced a pure space-time vector and engaged a profound sense of absence comes from the more unlikely figure of architect Albert Speer:

> In 1954, after eight years as a prisoner, Speer began, in his mind, a walking tour of the world. In the courtyard of Spandau he walked endlessly in circles, keeping a careful record of the mileage covered each day. Step by step, in meticulous detail, he trekked across the continents, viewing and studying the eclectic wonders of nature and culture.[152]

This walk is extraordinary in the sense that the quantitative steps traced in the courtyard parallel the qualitative steps of the mind – Speer's walk is an empathy walk for himself, a cerebral journey to mourn the impossibility of a physical one. Speer was fastidious with the measure of his walk, and kept

[151] In his lecture at the Banff Centre in 2007 Fulton briefly discussed several recent walks he had made as a paying client of adventure travel operations including the pilgrimage circuit at Mount Kailash. In 2009 Fulton completed an assisted climb of Mount Everest.

[152] Tom Dean, 'Albert Speer Meets the Buddha' at www.ccca.ca/c/writing/d/dean/dea002t.html, accessed 14.01.05.

detailed notes about the distance walked each day. He walked, on average, nearly three thousand kilometres each year and when he was released in 1966 he had walked a total of 31, 816 kilometres. His account of his walk contains fine-grain descriptions of the places he imaginatively walked to, and these descriptions form a kind of evidence of production – in Speer's case, however, the production of nothing through walking takes on a new meaning because the walk which he documented is not the walk that took place. The physical kilometres traced in circles within a small courtyard seemed to incite a shift in Speer's mental state – qualitatively, at the end of twelve years, he appeared to believe that the ephemeral architecture of light he created with 150 searchlights at the Nuremburg rally paralleled the architectural achievement of one of Buddhism's most revered sites at Bagan, Myanmar. In 1966, 13 days before his release, Speer wrote, "Today I completed the last year of my walking tour of the world. Probably it has been the greatest athletic achievement of my life, and at the same time the only tangible result of the Spandau years. At the last segment of my life there is nothing left but statistics, production figures."[153]

Speer's walk is the culmination of walking as the production of nothing – not only does the walk produce nothing in the sense that there are no art or architectural 'products', but the walk is situated so completely within the sphere of absence that there are in fact no parallels between what Speer actually did and for what his statistics and production figures account. Unlike Francis Alÿs, who commenced his day-long walk in Mexico City with a block of ice that slowly disappeared, Speer's entire walk – including his

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[153] Ibid.

detailed statistics and production figures is born of that same absence that Alÿs had to work to 'produce'. Speer's walking practice operated entirely within the sphere of absence that other walking artists discuss as an inevitable outcome of a walk. Here, the cycles of forgetting and remembering within walking are so polarised that Speer's intricately detailed remembering of the outside world appears to enable a complete and comprehensive forgetting of his actual circumstances – and this, to begin with no doubt, was the unspoken intent of his walk.

Speer's walk is indeed an architectural practice in the sense that Virilio describes – it is a space-time vector extending well beyond the physical boundaries of Spandau itself. The prison walls – that is, the material architecture of brick and barbed wire – do not negate Speer's space-time vector and do not thwart his practice in any way. In fact without those impermeable edges, Speer's architectural evolution would not have taken place.

Speer's walking tour of the world is an example of a truly augmented space in which layers of the material and the immaterial work within each other. An architecture of the most unyielding and impermeable kind is overlaid with an astonishing sequence of intangible architectural spaces that Speer moves through with the utmost bodily precision, in which case Manovich presents a critical question concerning the role of architecture: "Does the form become irrelevant, being reduced to functional and ultimately invisible support for information flows? Or do we end up with a new experience in which the spatial and information layers are equally important?"[154]

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[154] Lev Manovich, 'The Poetics of Augmented Space', www.manovich.net.

Part Five : Wake

Trajectory

In a context of absence and invisibility, the forgetting of air, human movement, spatial displacement and the production of nothing, architectural form must be reconsidered as the primary currency of architectural space. Where architecture has until now signified endurance, certainty and refuge, it must now be questioned in light of the understanding of architecture as verb – as a *doing* of body and breath that is an act in space-time. Further, the presence of the body necessitates a more fluid approach to understanding how architectural space is produced because the body is not a remote, objective, untouchable element in the spatial equation – its very presence dispels abstract grids and geometries and anchors architectural space in the experiential realm of the body. Virilio's call for an architecture that addresses the space-time of real experience, *our* experience, reveals the moving body, its time in passage and the architectural space that it generates as 'crossings' as the new architectural space. It is architectural space that accelerates with the body and its cumulative experience; it is architectural space that is specific to individual bodies moving in individual ways.

The trajectory of the body – the moving, walking, dancing body – presents us with a series of architectural spaces carved out of air through gravitational mass displacement. These spaces are related to each other in time, they are sequential and inherently entangled; they are anchored to the body in this moment, the previous moment and the next moment; an unravelling thread that cannot be broken or viewed as a series of discrete moments. Moreover, the trajectory of the moving body pulls us into an understanding of movement and space in which we

involuntarily understand the inherent relationships between past, present and future moments. It is, as Arjen Mulder suggests, a rhythmic spatial force of logic that runs deeper than the rational mind:

> Time happens as in the rising of a wave that then subsides, like a wave that comes from the sea. Time is a dynamical process. In every trajectory… you have a point that moves, and this moving point has a trail, which is the immediate past states of the trajectory. This trajectory is in a context, a landscape, and you know where it's heading. It's like seeing a ball rolling down a mountain: although it has many options, you can see that it is already geared to go this way and not that way.[155]

The moving, walking, dancing body establishes a trajectory as it casually gestures with an open hand, strolls along a street, and leaps defiantly through the air. In each and every movement of the body there are trajectories of all scales occurring all of the time. There is the dominant trajectory that forms the general direction of movement, but there are also smaller trajectories of individual body parts – the splay of the fingers, the rise and fall of the wrist, the swing of the hips and knees, the slapping confrontation and retraction of feet and floor surface. The vector that marks our movement is thus not a simple line from here to there, but rather a complex of multi-directional forces that embody the series of smaller intertwining vectors, which in turn represent the compound nature of our movement. Just as we understand that the ball is geared to go this way and not that way, we must also understand the moving body enacts a trajectory that is more complex than a condition of being here and then there – rather, it is an overall trajectory, which carries
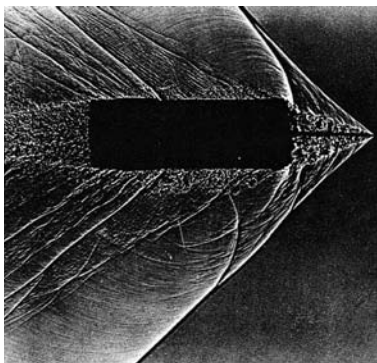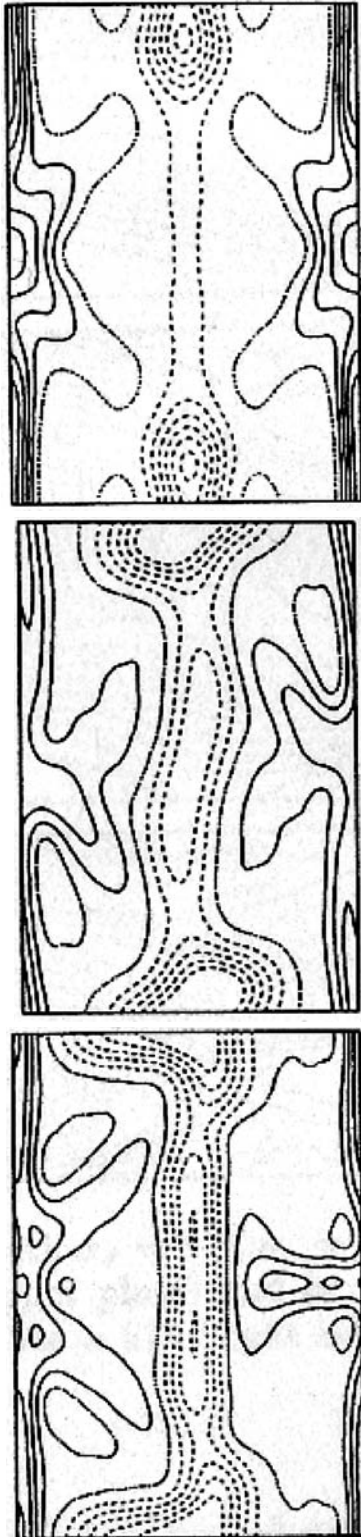

139 | *Image of Wake*

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155 Arjen Mulder, 'The Deep Now: An Interview with Francisco Varela' in Joke Bouwer (ed.), *Machine Times*, (Rotterdam: NAI Publishers, 2002), 13.

within it a series of intricate knots and kinks as all the parts of the body move in their own particular manner.

The trace of our trajectory is thus incredibly complex in itself, and when we consider that this trajectory is unfolding within the material space of air it becomes even more complex as every miniscule movement of our body causes a chain reaction. As air itself is a physical substance comprised chiefly of nitrogen and oxygen, our movement within it has a real and tangible consequence on actual physical matter. Just as water responds to the passage of a ship by forming a region of turbulence immediately behind the vessel, so too is air similarly disturbed and displaced as our bodies move through it. We understand this physical phenomenon as a wake – a region of turbulence in air or water behind a body, caused by the motion of the body and/or by the flow of air or water around the body. Thus, the conceptualization of our movement in space cannot be limited to the tracks and traces of our bodies alone, but must also expand to include the subsequent tracks and traces of air as it, in turn, is set in motion by the trajectory of the body. In this way, the notion of still, silent and pristine architectural space is utterly false and misguided. The reality is that architectural space that is inhabited by moving, walking, breathing bodies, is teeming with invisible, unstable air in motion, and that motion has a clearly discernible structure.
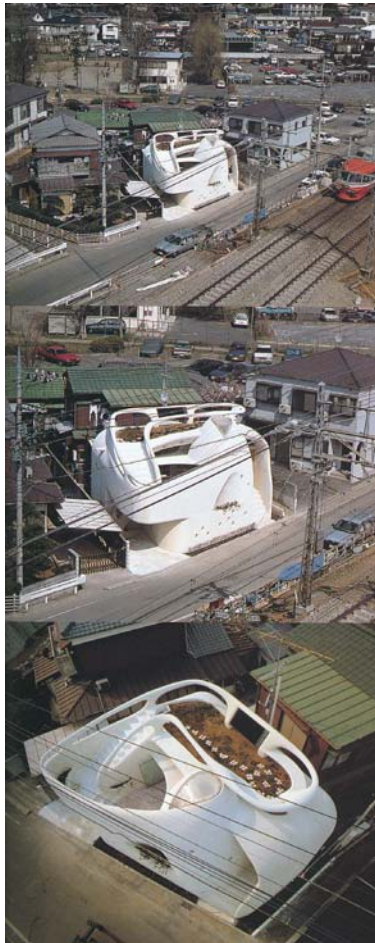
The Architecture of Motion

Many contemporary architectural practices address the notion of the moving body, and actively seek to use this as a generative design tool. Their buildings are regarded as being among the most innovative in the context of contemporary architecture, and provide us with stimulating spatial environments in which to consider

140 - 142 | *Wake Diagrams*

the body in motion. The practices of Ushida Findlay (UK), UNStudio (Netherlands), Zaha Hadid (UK), Daniel Libeskind (USA), Coop Himmelb(l)au (Austria), Foreign Office (UK/Spain) and Toyo Ito (Japan) have completed projects all over the world, and share a common vocabulary that consistently utilises the language of mobility: continuity, dynamism, flexibility, flow, flux, instability. These practices also share an enduring common interest in inventive and often non-rectilinear geometries that appear to liberate architecture from its own weight. Accordingly, their buildings frequently soar into the atmosphere with sharp edges and cut into the earth with voluptuous curves; they defy gravity and utilise oblique forms of structure which enable inclined wall, floor and ceiling surfaces. Spaces tend to bleed into one another through gentle mutations and folds, encouraging and enabling a continuous trajectory for the moving body. In these practices it is often geometry that stages the relationship the way the body is to move through space – it propels the body forward, off balance, and then tugs it backward; it calls the body into interstices, and compels its upward and downward movement through space. These spaces challenge the predictability of Cartesian space and thrive on surprise and often, especially in Libeskind's buildings, leave the inhabitant exhausted from the intense spatial engagement.

Eisaku Ushida and Kathryn Findlay operated as a UK/Japan collaboration in the 1990s, when their innovative use of organic geometries enabled them to create distinctively fluid domestic spaces. Though the temptation may be to understand their sinuous and ethereal architecture as sculpture – a beautiful object which compels and persuades – their buildings are conceived as spaces to be lived in rather that looked at. The architects describe the conception of their *Truss*

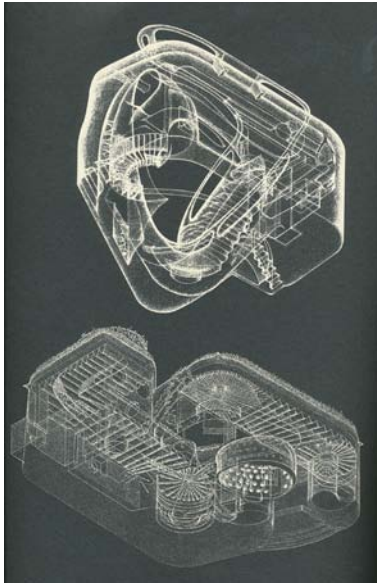

143 | *Truss Wall House* | Aerial views
Ushida Findlay | 2003

144 | *Truss Wall House* | Street view
Ushida Findlay | 2003

145 | *Truss Wall House* | Transparent isometric drawings | **Ushida Findlay** | **2003**

146 | *Truss Wall House* | Interior view Ushida Findlay | **2003**

147 | *Truss Wall House* | View toward roof Ushida Findlay | **2003**

Wall House (1993) in Tokyo as a series of connected volumes carved out of a solid 'blob' by the movement of the human body:

> The internal spaces were generated by using movement as an active mechanism, digging into the potential space as if it originally existed as vacant, solid entry. Rooms become attached to the armature of the route and carved out a notionally solid blob... representing the potential building volume. Fluid space is thus generated by a confluence of the static and dynamic factors and predetermined formal similarity becomes redundant as a result.[156]

The building swells and shrinks in response to the body, pushed out here to accommodate the sitting posture, elongated there to adapt to the standing posture. The smooth reinforced concrete surfaces of the house enable a distinctive fusion of surface and structure, in which the house seems to enfold not only the human body, whose proportions in movement have directed the design in its entirety, but also the more flexible aspects of furniture, fittings and fixtures. Cocoon-like interiors quietly spill into an enclosed courtyard that in turn fluidly transforms into an open roof terrace via a sculpted stair. The transition between spaces appears so easy and so fluid that it is difficult to imagine how the body could conceive of itself as being separate to the house. The architects describe this sense of connection between space and body as being the frozen flow of pliable viscera[157] – but the description of it as being 'frozen' seems at entirely at odds with the house itself and with the bodily trajectories it enables. As Usman Haque notes, the notion of architecture being 'frozen music' is both tragic and melancholic, and

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[156] Leon van Shaik ed., *Ushida Findlay 2G*, (Barcelona: Gustavo Gili, 1980), 130.

[157] Ibid., 30.
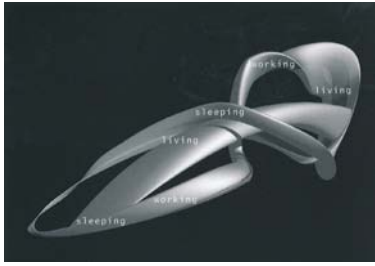
148 | *Möbius House Diagram*
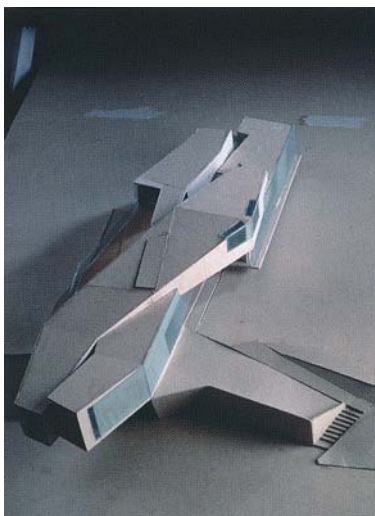UNStudio 1993 - 1998

149 | *Möbius House* | View into kitchen
UNStudio | 1993 - 1998

150 | *Möbius House* | Model
UNStudio 1993 - 1998

151 | *Holiday Home* | **UNStudio** | 2005

in the case of the *Truss Wall House* the metaphor seems to undermine its vivacious and sensitive response to the moving body.[158]

UNStudio is another practice that has consistently used the motion of the body as a generating design tool. Many of the spatial strategies that the studio has utilised in recent major buildings seem to originate in the relatively small *Möbius House* (1993-1998) in Het Gooi. In the *Möbius House*, the daily life cycle of the clients quite literally forms the organisational strategy of the building, and spaces are classified as being predominantly focussed around the activities of sleeping, working or living. The daily progression through these activities is then established in spatial terms and the fluid movement through the house is governed by the transitions from one state to another. Though the geometry is angular rather than organic, the seamless folding of one activity into the next is enabled by continuous planes and sight lines in which there are no clear demarcations between spaces and surfaces. The profound fluidity through the house is accentuated by the fact that the cycle of inhabitation is not a cycle of moving backwards and forwards in a mechanical, repetitive way. Instead, the inhabitants continuously move forwards through the house and in a circuitous fashion move through the cycles of sleeping, working, and living in that precise order. The spatial organisation and mode of occupation is literally like that of a Möbius band – it is a continual cycling-through and within that establishes a sophisticated reiteration of the bodily trajectory rather than one-dimensional repetition.

This sense of reiteration was further explored in UNStudio's installation *Holiday Home* (2005) at the

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[158] See Haque in Bakke, *Going Aerial: Air, Art, Architecture*, 64.

152 | *Holiday Home* | **UNStudio** | **2005**

153 | *Holiday Home* | **UNStudio** | **2005**

154 | *Mercedes-Benz Museum* | **Interior** view | **UNStudio** | **2001 - 2006**

Institute of Contemporary Art in Philadelphia. In this work the continuous planes and surfaces of the *Möbius House* began to fracture and become more complex in terms of scale, accentuating a sense of ongoing space and confusing the edges between inside and outside. The richly coloured interior planes of the installation cascaded within one another both enveloping and disorientating the body; perception of distance between bodies was broken down and all surfaces begin to hold potential as possible sites that the body might occupy. This sense of enveloping the body was taken further in their installation *The Changing Room* at the 2008 Venice Biennale where the angular planes melted into continuously fluid curvaceous surfaces without any hard edges. A multi-faceted projection of a man tying and retying a necktie seemed to suggest that the architectural space of the room could be understood as a flexible and reconfigurable space of potential. In the same way that the Möbius band is continuously forming and reforming itself, so too could the architectural space form and reform itself in relation to the patterns of movement of the human body. In this way, walls could be understood as floors, floors as walls, walls as ceilings.

The buildings of UNStudio are not containers of a pre-structured, pre-determined space into which the mute body is simply dropped. Rather, they are spaces that respond to the ongoing entanglements of form and movement and in so doing, create spaces that seem to change their architectural character depending on the movement of the body. Architectural form and the movement of the body do not dictate the other – rather, they are constantly caught in an eternal interaction that is changeable and open to reconfiguration. The complexity of such an interaction must be understood in temporal rather than literal
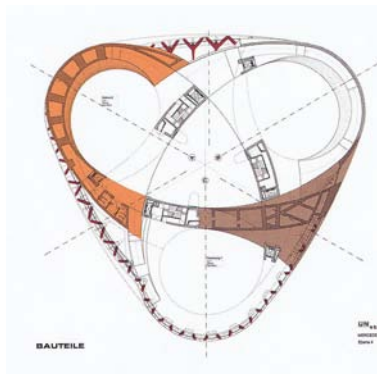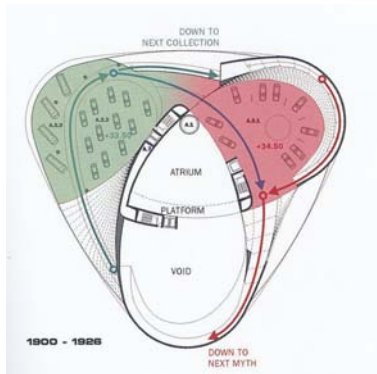
155 | *Mercedes-Benz Museum*
Architectural plans | **UNStudio**
2001 - 2006

156 | *Mercedes-Benz Museum* | *View from
Autobahn* | **UNStudio** | **2001 - 2006**

terms – in the same manner that the projection at the Venice Biennale prompted us to consider not the perfectly fastened necktie, but rather its construction and deconstruction relative to the movements of the hands, so too must we also understand the architecture of UNStudio speaks of its own processes of realisation relative to the body and could, by that same logic, enact its own erasure. The depth of the relationship between architectural form and human movement can only be understood by looking at past, present and future moments of the interaction.[159]

In the significantly larger *Mercedes-Benz Museum* (2001-2006) in Stuttgart, UNStudio uses the more visible mathematical model of the double helix to allow visitors a clearer opportunity to appreciate the simultaneous construction and deconstruction of architectural form. Gently curving ramps encircle the interior spaces and enable the visitor to perceive their spatial trajectory before they actually enact it. The visibility of the ramps enables visitors to concurrently reflect upon their past and anticipate their future trajectory through the building – a spatial strategy that removes a great deal of architectural mystery, but does heighten the sense of bodily motion within the interior space. The architects clearly intend visitors to be acutely aware of their movement through the building, and this type of self-conscious strategic passage seems peculiar to the emerging type-architecture of automotive museums. UNStudio's approach is not unlike parts of Coop Himmelb(l)au's *BMW Welt* (2003-

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[159] Interestingly, this notion of spontaneous construction in response to the movement of the body is best illustrated with materials that do not carry the weight of architecture's perceived stability and endurance. In an act similar to the tying of a necktie, the traditional Japanese rite of binding a sacred rope is well understood as an act of constructing temporariness. Though this parallel has been used to describe aspects of contemporary Japanese architectural practice, it is also what is occurring in the work of UNStudio – although perhaps on a bigger and bolder scale.

157 | *BMW Central Plant Building*
Exterior view **| Zaha Hadid |** 2001 - 2005

158 | *BMW Central Plant Building*
Interior view **| Zaha Hadid |** 2001 - 2005
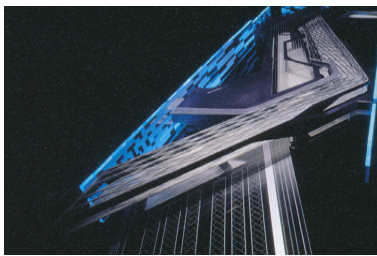
159 | *BMW Central Plant Building* **|** Model
Zaha Hadid | 2001 - 2005

2007) in Munich, which uses a similar spiralling path through both the major and minor exhibition spaces. Here a general sense of self-conscious movement is extended with spiralling projection screens that draw the eye deeper into the descent and accelerate the passage of the body. The trajectories that both these buildings encourage have obvious parallels to the motion of engines; the continuity, endurance and revolution of the engine is simply a mechanised version of the Möbius band, and in enacting this the body both reinforces and perpetuates that continuous motion.

In another example of an automotive museum reflecting exceptional relationships between the moving body and architectural form, Zaha Hadid's *BMW Plant Central Building* (2001-2005) in Leipzig reflects the parallel dynamism differently. Rather than adhering to spiralling forms of movement evident in the UNStudio and Coop Himmelb(l)au buildings, Hadid's building generates a sense of dynamic movement through the use of shear forces. Rather than moving the body in curves or circles, Hadid's building instead moves bodies and forms against each other in vibrating, parallel motion; one plane shears over another allowing the encounter between architectural form and bodily movement to occur in an oscillating, analogous relationship. The sense of shear force between body and building again recalls the moving parts of an engine, but its references seem to extend beyond the mechanical to the geological – tectonic plates slide past one another, molten rock flows over an impermeable surface, a slow-moving glacier inscribes its passage on the floor of a valley. The sense of shear force is evident in the vast majority of Hadid's built and unbuilt schemes, and even in the more gentle forms of her furniture and other products it is still there even if it is softened by curves. Within this language of shear
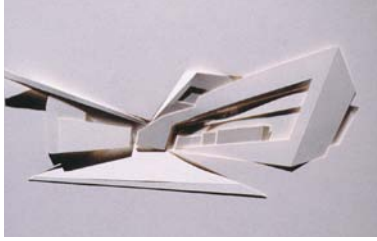
160 | *Vitra Fire Station* | Model
Zaha Hadid | 1990 - 1994
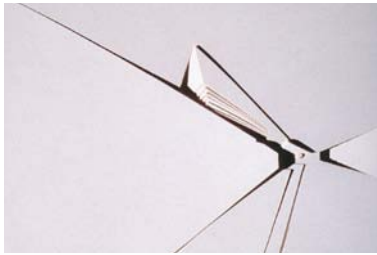
161 | *Vitra Fire Station* | Model
Zaha Hadid | 1990 - 1994

162 | *Vitra Fire Station* | Exterior view
Zaha Hadid | 1990 - 1994

163 | *Landesgartenschau* | Aerial view
Zaha Hadid | 1996 - 1999

force, a different kind of circularity or sense of motion is achieved – floor surfaces in particular are articulated into ramps linking vertical space, often moving parallel to each other in the reinforcement of a dramatic sense of directional space:

> The circularity lives in a transitory state between fullness and emptiness and makes Hadid's architecture an unstoppable stream, a sequence of points and viaducts, of volumes and surfaces that flow into one another, juxtaposing mutability and stasis. Entering it, one has the impression of a variable space with no destination, something contingent on the vicissitudes of the lives of the inhabitants and visitors. No direction is given, as though it is left up to our impulses and desires, which can always change their objects and destinations, to determine which path to take. Vitra Fire Station is a network of interconnected canals full of liquid matter that is not static but mobile.[160]

Indeed the *Vitra Fire Station* (1990 – 1994) at Weil am Rein, Hadid's first built work, and its near neighbour the *Landesgartenschau* (1996 – 1999) both embody a tremendous sense of energy in the way that volumes slide past one another in the language of shear force. The sense of mystery that was lost in the clear circular trajectories of UNStudio's *Mercedes Museum* and Coop Himmelb(l)au's *BMW Welt* is restored in these two buildings of Hadid's because the buildings constantly invite passage along inclined planes without any clear conception of destination. In this sense the buildings, though strictly conceived within the confines of parallel geometries, might be referred to as 'circular', because the spatial organisation demands intrepid exploration and trust. The motion of the body is required to understand the organisation of the building, which is

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[160] Germano Celant, 'Zaha Hadid: Adventure in Architecture' in *Zaha Hadid*, (New York: Guggenheim Museum, 2006), 21.

164 | *Landesgartenschau* | Model
Zaha Hadid | 1996 - 1999

165 | *The Jewish Museum* | Aerial view
Daniel Libeskind | 1999

166 | *The Jewish Museum* | Aerial view
Daniel Libeskind | 1999

167 | *The Jewish Museum* | Interior view
Daniel Libeskind | 1999

entirely hidden until the body begins to negotiate the building. At Vitra, the mode in which the body is asked to contemplate its own passage is made obvious in the upward sloping roof deck. The movement to the high point of the building after all the other spaces have been explored, is a carefully considered spatial finale – a denouement, in fact, in which one might finally understand the nature of the trajectory that the body has just made through the building.

The inclined plane as an architectural device for compelling and reflecting upon movement is also highly visible in Daniel Libeskind's work, and in particular in his first built work – the *Jewish Museum* (1999) in Berlin. Libeskind uses the inclined plane very consciously as a device for the physical and emotional unsettling of visitors to the building. He capitalises on the ongoing sense of falling that is characteristic of walking:

> Emerging upward from the tunnel connecting the old building with the new, you enter a crisscrossed nexus of corridors with slightly sloping floors that wholly subvert the stability and the regularity that we customarily associate with architecture. The three-degree pitch of the walkways is not pronounced enough to feel like a ramp, and yet it is clearly not a normal surface either. You literally begin to lose your footing, and the physical and psychic displacements of the Holocaust become palpable.[161]

Indeed much of Libeskind's subsequent architecture thrives on the sense of vertigo generated by the inclined plane. The manner in which the space prickles the skin and unsettles the bodily sense of balance is particularly appropriate in his numerous Jewish museums and other memorials, as he establishes

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[161] Martin Filler, "Into the Void", *The New Republic*, vol. 225 no. 14 (2001), 26-31.
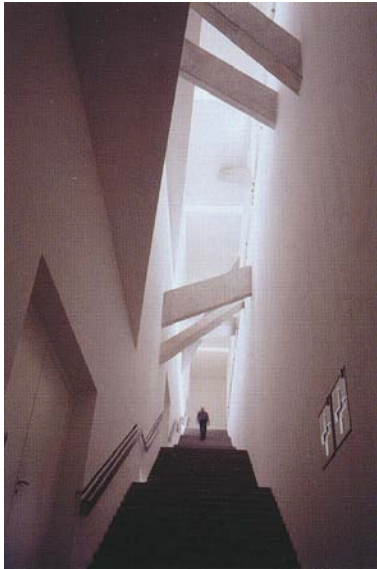
168 | *The Jewish Museum* | Interior view
Daniel Libeskind | 1999

169 | *Denver Art Museum* | Exterior
perspective | Daniel Libeskind | 2006

170 | *Denver Art Museum* | Interior
perspective | Daniel Libeskind | 2006

171 | *Yokohama International Port
Terminal* | Aerial view
Foreign Office | 2002

a relationship between the unstable trajectory, the bringing forth of inaudible voices and a sense of bodily danger. This architectural strategy has received wide acclaim throughout the world and has transformed Libeskind from a highly criticised 'academic' architect into something of an architectural celebrity. This transformation has in turn affected some curious architectural proposals and outcomes such as the striking extension to the *Denver Art Museum* (2006) and the *Royal Ontario Museum* (2007). In these two buildings, the angular geometry is reminiscent of the *Jewish Museum* and evokes a similar sense of violence and trauma – but it is unclear why Libeskind should set out to create a condition of anxiety through his use of the unstable trajectory when anxiety appears quite unrelated to the purpose or spirit of the building.

Foreign Office's use of inclined planes is much more delicate and flexible, particularly in their renowned project *Yokohama International Port Terminal* (2002). In the building, the inclined planes function as a device of inclusiveness rather than intimidation, calling the inhabitant forward in the spirit of exploration and negotiation. Jutting out into the sea like an enormous finger wharf, the *Yokohama International Port Terminal* reads as an undulating crafted landscape in which the 'architecture' is difficult to locate. Inclined floor planes are constructed from wonderfully detailed timber decking that gently directs certain trajectories over others, though none are explicitly excluded or impossible. The trajectory alters when the floor planes quietly fold into themselves to become walls or ceilings or cavities for entering hidden underground volumes; the body understands what is possible and what is not in terms of gravity and responds to these shifts accordingly. The sense of bodily trajectory here is so fluid that it creates a sense of adventure.

172 | *Yokohama International Port Terminal* | Aerial view
Foreign Office | 2002

173 | *Yokohama International Port Terminal* | Interior view
Foreign Office | 2002

Where Libeskind's inclined planes collide abruptly and catastrophically, resulting in sudden terminations of space and movement, Foreign Office's planes fold in on themselves and appear unending, and there is a clear sense that the only thing halting the body's exploration of these planes is gravity itself. The planes, in this sense, function as a Möbius band in much the same way as it did in UNStudio's *Möbius House*; the possibility of the form, and thus the possibility of passage and inhabitation, is infinite, limited only by the physical constraints of the body.

Toyo Ito's *Grin Grin Park* (2005) in Fukuoka echoes this sense of fluid trajectory within a landscape of inclined planes. Rather than conceiving of the site as a flat landscape that is then shattered into a series of angular fragments, Ito describes a method of 'rippling' the landscape, as if the site is imagined as a mass of fluid into which an object is dropped. Upon impacting the fluid site, the object sends out a circular wake that Ito then 'solidifies' into a series of rolling craters and mounds. The craters and mounds are then formed from a lightweight concrete shell roof structure, obscuring the architectural cavities below. The undulating roof is planted to create an inviting green urban landscape in which the body has free reign. That the scheme should be conceptualised in the first instance as a liquid mass reveals much about the intended trajectory of visitors to the space. Just as the form undulates in the image of a rolling wave, so too does the body's trajectory not only as it negotiates the rhythmic crests and valleys as it moves perpendicularly to the wave, but also as it crosses the landscape obliquely. Like the circular trajectories established by UNStudio and Coop Himmelb(l)au and the shear trajectories of Zaha Hadid, Ito's wave trajectory is yet another architectural strategy for compelling the body to movement. The

174 | *Grin Grin Park* | Conceptual diagram
Toyo Ito | 2002 - 2005

175 | *Grin Grin Park* | Sketch
Toyo Ito | 2002 - 2005
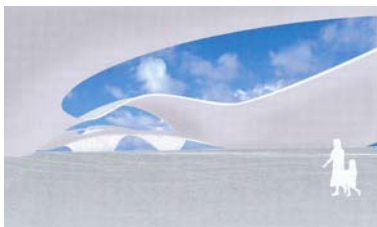
176 - 179 | *Grin Grin Park* | Conceptual
Perspectives | Toyo Ito | 2002 - 2005

wave, however, possesses a temporal dimension that is lacking in the simpler circular and shear strategies, and this enables the bodily trajectory to definitively surpass a preoccupation with the present moment:

> The structure of the wave is a structure of motion, of perpetual becoming, of forces pushing and pulling against each other, breaking out, sucking back. Gradually, particle by particle, atom by atom, each force wins ground, then loses it again and the wave begins all over, but different. A wave never exists in the singular or in isolation; its constitution is determined by the waves that come before and after. The structure of the waves is one of contrasts; the propelling force behind each wave is insinuated with the turmoil of reversing, the strong currents of ebb blending and swirling with each move to the fore.[162]

The complexity of the wave's movement opens a temporal context for the bodily trajectory through architectural space and allows a deep understanding of the connectedness of past, present and future moments. The connectedness extends beyond the realm of the cerebral as each moment is inherently entangled with another – the simultaneous pushing and pulling between past, present and future – and this entanglement evokes our actual experience of everyday space that we negotiate over and over again.

In *The Aesthetics of Disappearance* Virilio speaks of a notion of 'extensive' time versus 'intensive' time, in which an extensive, inclusive, connective, and sensory mode of thinking about the world is contrasted with an intensive, exclusive, and singular mode.[163] In architectures of motion, our awareness of

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[162] Ben van Berkel and Caroline Bos, 'Fluid Mass', in *A + U Architecture and Urbanism*, Vol 296, (May 1995), 4.

[163] Virilio, *The Aesthetics of Disappearance*, 136.

our own trajectory enables our spatial experience to transform from an intensive mode of time where we are concerned with matters of form and materiality to an extensive time where we are able to reflect on the relationship between our moving body and architectural space. Extensive time is a time of historical and spatial continuity, a viscous, slow time inextricably linked to physical acts – the motion of the human body, transformation, geography and interpretation.[164] It is, to go back to UNStudio's *Möbius House* once again, a continuous and convoluted sense of space without a solid core:

> The project does not unfold in time like a scenario. Instead spatial arrangement and programmatic components are intertwined, like the double helix of DNA, with each strand developed simultaneously. On the one hand the project is defined as a family house, with the biography of the four family members as its programme; their daily lives, adversities and good fortunes, their hopes and enjoyments. The other strand consists of the architecture developing almost of its own accord, certainly on its own terms. In the case of the Möbius House there is no stiff core, around which such programmatic and architectural properties fly in variegated orders... No solid core upholds and protects the various vulnerabilities of the house; instead the house is rooted by the loop, the Möbius belt... It is an identity without solidity, an identity of multiples, of wave-like movements going back and forth – an unresolved question.[165]

Diller & Scofidio's *Blur Building* (2002) at Yverdon-les-Bains, Switzerland, is another example of architecture without a solid core which, like the *Möbius House*, depends upon the wave-like coming and going of its

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[164] See Joke Bouwer. 'Introduction', in Joke Bouwer,ed. *Machine Times*, (Rotterdam: NAI Publishers, 2002), 4.

[165] Ben van Berkel and Caroline Bos. 'Fluid Mass', in *A + U Architecture and Urbanism*, 6.

180 | *Blur Building* | Night time view from shore | Diller & Scofidio | 2002

181 | *Blur Building* | Aerial view
Diller & Scofidio | 2002

182 | *Blur Building* | View from bridge
Diller & Scofidio | 2002

inhabitants to give it form. Situated on a lake and little more than a skeletal structure, the *Blur Building* consisted principally of a vapour cloud, which visitors approached via a bridge. Visitors could witness their own disappearance as they left the clear light of the bridge and were suddenly engulfed by the cloud, which hung quietly over the structure in the lake. With the path of past movement lost from sight, and the prospect of any future movement obscured by vapour, movement became an unresolved question. The question itself, however, was very legible in the sense that the vapour could visually register the movements of the body. The moving body disturbed the vapour, and could literally be seen to 'stir' the architectural form. In this sense, the *Blur Building*, as a habitable medium that is formless, featureless, depthless, scaleless, massless, surfaceless and dimensionless is one of the few works of architecture ever built in which inhabitants could visually and then conceptually register the consequences of their own movement on architectural space.[166]

Toyo Ito, whose work has always had a very strong focus on the presence of the body within his work, has insisted for many years that in fact 'architecture' comes after 'body', which in turn comes after 'purpose', and never the other way around. This is not a functionalist philosophy, but a pragmatic one concerning what draws people together in space. Although the practices and works discussed so far show profound sensitivity to the manipulation of the body within architectural space, it would not be true to say that the body takes precedence over the architecture – rather, in the practices of UNStudio, Coop Himmelb(l)au, Hadid and Libeskind, the body is used as a generating design tool and as an animating force within the built work.

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[166] See www.dillerscofidio.com

It is not inconceivable that these buildings should
be uninhabited, for they are still able to function as
sculptural works despite the importance that each
places on the role of the body. This key difference in
approach between the Western architects and Ito is
highlighted by the fact that Libeskind's *Jewish Museum*
in Berlin was such a bold architectural statement
that it could actually open – for several years, at
that – prior to assuming its main purpose of actually
displaying museum exhibits. It is certainly a remarkable
architectural achievement that Libeskind was able to
create such a powerful spatial experience that spoke to
millions of visitors about the horrors of the Holocaust at
a time when the building was not yet 'functional' – but
it is simultaneously curious that a building should be so
vocal when it is essentially 'empty' of the thing which
gave it shape in the first place. The same could be said
of much of UNStudio, Coop Himmelb(l)au and Hadid's
work – in being so concerned with the poetic of the
body in motion, these works gain a sculptural identity
that, if we follow Ito's thinking, compromises their
architectural identity in that they become somewhat
self-referential. In profound contrast, Ito describes his
approach to architecture and the body through the
story of a cherry-blossom viewing party, an event that is
common throughout Japan in the spring:

> The scene of a cherry-blossom viewing party,
> where people drink sake with friends on a red
> carpet under the trees and paper lanterns, or
> inside open tents, represents the fundamental
> character of Japanese architecture. First of
> all, people come together to see the cherry
> blossoms in full bloom, and then primitive
> architecture (ie. the carpet and the tent)
> is built for the event. It is not that the
> architecture is there at the beginning; on the
> contrary, it is the human act of getting together
> that exists first. It is only afterwards that
> architecture comes into being to envelope this
> action... It may be said that architecture here

is evoked by something extremely transient; like a piece of film wrapping the human body, it does not have much substance nor does it imply significant weight.[167]

The sense that the architecture would not – and *could not* – exist without the presence of the human body is absolutely central to Ito's approach, and echoes the sense that architectural space is actually produced through crossings of the body and space it moves through. Ito draws directly from the body's transience, precariousness and instability to engender in his work a sense of flux that is essentially the hallmark of his practice. Frequently in collaboration with structural engineer Cecil Balmond, Ito works with the instability of the body to affect a corresponding instability within architectural space itself. The instability of architectural space is ultimately conducted by its structure, and here Balmond plays a crucial role in suggesting that structure abandon the classical determinism of Newtonian physics in which force is conceived as an arrow, straight and true, and instead consider it a minimum path through a field of potential.[168] In this way, Ito has been able to bring a level of dynamism to his architecture that has allowed a revolutionary sense of programmatic and spatial spontaneity; gaps are able to open within space creating flexible sites for the body to inhabit and determine at will.[169]

In one of his most compelling texts, Ito describes how flexible architecture must be understood as an eddy within a continuous flow. This vision of architecture, as a fleeting concentration of phenomena that emerges and dissolves from one moment to the next with

[167] Toyo Ito. 'Vortex and Current: On Architecture as Phenomenalism' in *Architectural Design* no 9 issue 10 v 62 (1992); 22.

[168] Cecil Balmond. 'New Structure and the Informal', in *Architectural Design* no 9, 10 volume 67, (1997 September), 88.

[169] Toyo Ito. 'Interview with Toyo Ito: In Pursuit of an Invisible Image', in *A + U Architecture and Urbanism*, 2004:05, No 404. 15.
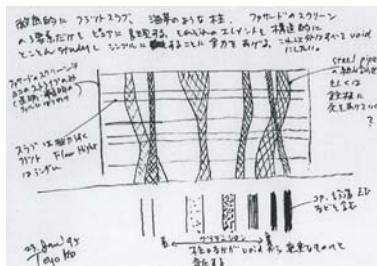
reference to both people and purpose, is tremendously powerful not only in contextualising Ito's practice, but also in terms of clarifying the relationship between the bodily trajectory, air and architectural space:

> Designing architecture is an act of generating vortexes in the currents of air, wind, light and sound; it is not constructing a dam against the flow nor resigning itself to the current. For instance, if a pole is erected in the river, changes are caused in the current and around the pole. If two poles are placed at a short distance from each other, the movement of water changes complicatedly due to their synergetic effect.[170]

This idea of architectural space as vortices within the air suggests firstly that architectural space may be a temporary phenomenon that emerges and dissolves only in response to the movement of the body – an idea not dissimilar to that of the cherry-blossom viewing party. As Ito describes the scenario involving a pole placed in a river and the consequent impact on the flow of water around it, so too can we imagine a similar effect if a body is placed in a volume of air that is through natural forces, eternally in motion. Like water, the flow of the air is interrupted by the body and is immediately set into a complex pattern of vortices, of positive and negative spaces, of contrasting rotations, of slippages and leakages. What is also apparent is that the air immediately around the body is not the only air affected by our movement – the change in movement patterns of air close to the body causes an extensive series of chain reactions such that air particles that are some distance from the body also react, and those particles subsequently cause others to react.

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[170] Toyo Ito. 'Vortex and Current: On Architecture as Phenomenalism' in *Architectural Design*, 22.

Ito's notion of architecture as vortices in the air enables a conceptualization of how we actually shape the air through our movement and cause a subsequent sequence of movements within the air that leave it in an eternally turbulent condition. If air is the substance of architectural space as discussed previously, then it is clear that architectural space is actually activated through the movement of the body by forcing the transformation of the stagnant air into a dynamic state of flux. In this sense, architecture is clearly a verb, it is a physical doing of the body that agitates air-filled space and furthermore, the creation of architectural space actually depends upon the moving body because without the moving body, there can be no crossing of body and space, and without the crossing, there can be no architectural space – only a dull, lifeless shell of a building.

Cecil Balmond conceives of this interconnectivity between flows of bodies and matter as a viable basis for determining the structure of architectural spaces. In contrast to the notion of a pre-gridded, compartmentalised Cartesian space of horizontals and verticals, Balmond designs structural systems that are based on the invisible or barely perceived forces that exist within the flows of phenomena. His notion of structure as trace, described at length in his paper *New Structure and the Informal*, transforms what could be considered as a highly abstract idea into a tangible approach and form, and this is ultimately what enables the flux of several of Toyo Ito's spaces to take shape:

> I prefer structure as trace rather than as skeleton, with pathways that attempt to interpret space. If the trace is continuous and explicit, well and good, the continuum is celebrated; if fragmentary and intermittent, then the discrete is allowed a say. Borders vanish and boundaries travel in this new

183 | *Sendai Mediatheque* | Section sketch
Toyo Ito | 2001
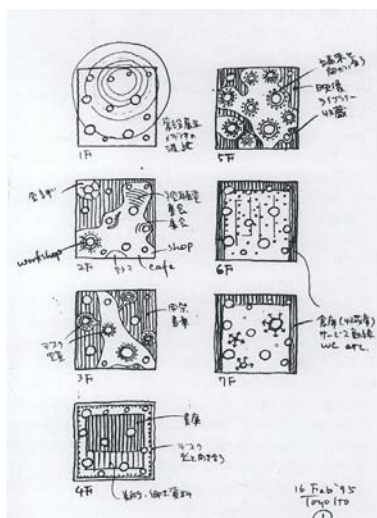
184 | *Sendai Mediatheque* | Floor plan
sketches | Toyo Ito | 2001

185 | *Sendai Mediatheque* | View into structural column | Toyo Ito | 2001

186 | *Sendai Mediatheque* | Interior view Toyo Ito | 2001

187 | *Sendai Mediatheque* | Interior view Toyo Ito | 2001

188 | *Sendai Mediatheque* | Aerial view Toyo Ito | 2001

paradigm, they become lines of passage and phase points of transition.[171]

In Ito's *Sendai Mediatheque* (2001) space is treated as a fluid entity that the body inhabits differently according to the particular momentary conditions of body, time, and intent. Conceived as a unifying shell structure with maximum spatial and visual flexibility, the building hinges on a remarkably fluid structural system of steel tubular lattice that is treated, like every other part of the building, as a habitable space. The majority of interior spaces are not defined or tied down to a media-based particular activity and as such a sense of architectural function comes and goes with the passage of visitors to the building. Because the potential crossings of body and space are purposefully left open to the moment and to the whim of the visitor, the architecture itself is fleeting and its form borders on being incidental. With this building, Ito has constructed a shell that supports an infinite number of momentary crossings that constantly emerge and dissolve with the specific movements of visitors. In this sense, the *Sendai Mediatheque* is a building that through its own construction, simultaneously constructs a temporariness that allows another mode of architecture open within it – an architecture of body, air and movement. If, as Balmond suggests, such flexible structures are conceived as lines of traces and/or as points of transition, then the usual order of architectural process is thrown into disarray – does the structure condition the architectural outcome, as is usually the case, or does the reading of the potential architectural possibilities (crossings) condition the structure?

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[171] Cecil Balmond. 'New Structure and the Informal', in *Architectural Design*, 89.

189 | *Sendai Mediatheque* | Model
Toyo Ito | 2001

In a similar vein, Vladamir **Krstic discusses the notion** of 'constructing temporariness' with reference to the traditional Shinto rites of the ceremonial binding of rope around an object or place. The act of binding conceptually embodies the inscription and creation of territory, as well as its occupation (by a divine presence) through a highly specific and gestural signification.[172] The construction of temporariness is, by its nature, paradoxical because it implies a simultaneous deconstruction precisely as the construction occurs, and this contradiction could be construed as contrary to the purposes of architecture. As we see, however, the construction of temporariness as an idea is not about harnessing built matter but rather about sensing and momentarily articulating what is always just beyond our reach:

> The attempt to construct transience, to make a stage for something temporary to unfold in this case, is not based in the quest for the revelation of a divine presence, it seeks something equally elusive and invisible – the etherealised effects of technology and nature. However, what matters here is the idea of anticipation: the desiring and sensing of that which is not defined in advance and has no known form, nor is measurable.[173]

This mode of construction recalls the practice of walking artists discussed earlier. Specifically, the practice of Francis Alÿs could be similarly described as being paradoxical or futile in the contradictory nature of his *production of nothing*, but as discussed the production of nothing is not futile and does in fact lead to an alternative understanding of body, movement and space, and in particular exposes a temporal dimension

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[172] Vladimir Krstic. 'Constructing the Ephemeral: The Notions of Binding and Portability in Japanese Architecture', Robert Kronenburg, ed., *Architectural Design Profile No. 135 Ephemeral/Portable Architecture*, (London: Academy Editions, 1998), 11.

[173] Ibid., 15.

190 | *Mur Island* | Acconci Studio | 2003

in the relationship between these components. On the one hand we have Alÿs 'constructing' flows of body and matter through the resonant processes of melting of ice and the unraveling of thread, and on the other hand we have more literal projects like Acconci's *Mur Island* (2003), a building physically placed within a flowing river. These works are at either end of the spectrum of constructing temporariness, but both fit within Balmond's notion of architecture employing the structure of trace. In both cases, the structure of trace is concerned with reading an absent or prior condition and deducing from it a hidden flow or pattern. That hidden flow or pattern then brings an order to architectural space that is entirely independent of its material form or boundary.

With the construction of temporariness in mind, and the relative opportunities for bodily trajectories to unfold, we must critically reassess the 'architectures of motion' discussed earlier. The *Möbius House*, *Mercedes-Benz Museum* and the smaller installations by UNStudio, the *BMW Plant Central Building*, *Vitra Fire Station* and *Landesgartenschau* by Zaha Hadid, and the *Jewish Museum*, *Denver Art Museum* and *Royal Ontario Museum* by Daniel Libeskind are certainly all spectacular buildings in their form and architectural ambition. They are stimulating and dynamic and give precedence to the human body that is sorely lacking in many other kinds of architecture. If, however, we consider the patterns of movement within these buildings in light of the discussion around the structure of trace and the construction of temporariness, we see that through their strategies of moving bodies through space in circular or shear paths of movement, these buildings actually leave little room for innovation. The paths of movement are so specific that they in fact constrain the body's ability to explore and

construct architectural space by limiting the number of potential crossing of body and space. That diagrams of movement within these buildings almost precisely mirror the line work of diagrammatic floor plans and sections is evidence that within their innovative and persuasive form, these buildings still make the same old demands of the body by requiring it to move in a manner almost wholly prescribed by the architect. The prescription of movement ensures that the hidden flow or pattern of movement within these buildings is hardly different from that of a corridor – in the end, the movement becomes cold, mechanical and prohibitive of unique or innovative bodily trajectories.

In contrast, Foreign Office's *Yokohama International Port Terminal* and Ito's *Sendai Mediatheque* and *Grin Grin Park* allow the body an almost infinite number of trajectories for the body to enact. As no specific trajectory is excluded and the body is subject only to the constraints of gravity, the hidden flow or pattern of movement is considerably more fluid than those in the buildings of UNStudio, Hadid and Libeskind. With a largely undefined and non-prescriptive trajectory of the body, the body is able to move in such a way that is almost entirely independent of the architectural form, and as such the potential crossings of body and space are innumerable and unique. These buildings are the true 'architecture of motion' because by providing flexible sites for innumerable and unique crossings of body and space they allow for the spontaneous construction and collapse of architectural space relative to the body's passage. This spontaneity and multiplicity is key in the construction of temporariness and these buildings by Foreign Office and Toyo Ito provide us with examples of tangible architecture that precisely capture Morris's ethereal crossing of body and space, Lefebvre's proactive production of space and de

Certeau's utterance. These buildings are particularly remarkable because to build a material form that offers such possibility requires the anticipation of what might unfold before it is actually built or even before it is conceived. This anticipation is perhaps what grounds Balmond's idea of the structure of trace. In a usual architectural process, structure rationally defines and divides space into comprehensible components and architectural space then happens around it, between it and within it – often beautifully, often not. When structure is conceived as the structure of the as-yet-unmade trace, however, a series of spatial possibilities are envisaged and then worked backwards, in a reverse order, to determine a trace of what has not yet occurred. In this way, the structure of trace is thus a structure of bodily trajectories that have not yet unfurled this way or that way, of landscapes that are yet to be thought or formed, and of hidden patterns or flows that are not yet in existence.

The Wake

The wake – that is, the hidden airborne pattern or flow emanating from bodily movement – is inherently more fluid and varied in buildings where the possible trajectories of movement are not wholly dictated. The wake of individual bodily movement registered in the air of the UNStudio, Hadid and Libeskind buildings is reasonably straightforward as bodies are confined to particular pathways and directions. One can imagine the wake of bodily movement within these buildings as parallel to the orderliness of a shipping channel in which the vector of each vessel is carefully controlled – even with a multitude of moving vessels the order is still maintained. In the Foreign Office and Ito buildings, however, the sense of order completely vanishes as individual bodies are able to move in a multitude of directions at varying speeds,

and so the wake that emanates from their individual movements is unpredictable and changeable. When that unpredictability and changeability is multiplied by the number of bodies moving within these buildings at any one time, the result not is not at all orderly or even – it is profoundly turbulent and unruly.

In endeavouring to visualise precisely how the air moves in response to the moving body, and to thus come closer to articulating a notion of intangible architecture, the discussion turns here to the various attempts that have been made within photography to capture the movement of air and other unseen elements within the body/space exchange. Etienne-Jules Marey was among the first photographers to capture images of air movement in the 1890s and these images are very much concerned with visualising what we cannot see but what we know exists. Marey's early photographs focus on physiological locomotion in both humans and animals and his methods in chronophotography were shaped by a desire to understand the nature of bodily movement in space. In the early photographs we see an enormous number of detailed studies of the human figure – the human figure walking, the human figure jumping, the human figure picking up a vase, the human figure setting down a vase – and subsequent diagrammatic studies of the movement of limbs in relation to each other. While these images were no doubt of immense interest to physiologists, they are spatially impoverished, as Marey went to great lengths to remove any sense of depth from the images by photographing the sequences of movement against a black background. This, in combination with the very nature of chronophotographic technique, produced images that emerge as idealistic, pristine and static to the point where we might believe that the walking,
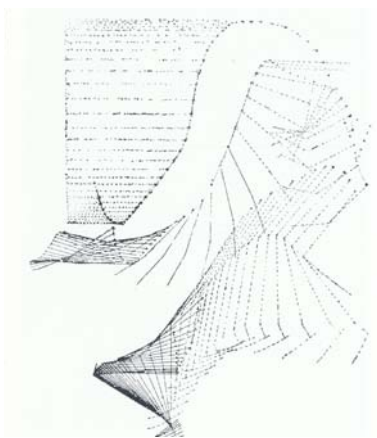
191 | *Analysis of the Jump* | High jump preceded by a run | Etienne-Jules Marey 1883

192 | *Joinville Soldier Running* | Etienne-Jules Marey | 1883
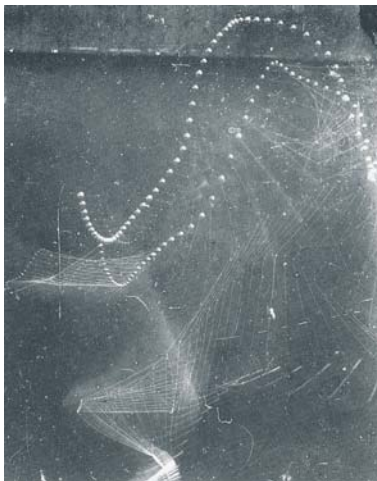
193 | *Analysis of the Jump* | Jump from a height with stiffened knees to cushion the shock | Etienne-Jules Marey | 1884

194 | *Analysis of the Jump* | Diagram of jump from a height with stiffened knees to cushion the shock | Etienne-Jules Marey | 1884

running or jumping figure is actually a perfectly stable being in all stages of the movement. There is not a hint of instability to be found anywhere in these images, and as such it is difficult to imagine the chaos of the fluid motion that the photographs actually record. They deaden the movement of the body for the purposes of pure physiology, and though the later images of Eadweard Muybridge's mediate this scientific purpose to some extent, even his photographs remove the sense of motion from the moving body.

In Marey's studies *Joinville soldier walking* and *Joinville soldier running* (1883) there is a very distinctive sense of quantitative rhythm and measure. Little comment has been given to the phenomenological aspects of movement that are barely visible in these images by Marey or his commentators – the slight blur of the body against the background, the shift in focus between the rapidly moving parts of the body and the slower moving parts. Attention is sharply focused on the physiological significance of the coordination, swing and relative acceleration of bodily limbs in their designated continuous movements. Similarly, in *Analysis of the jump* series (1884), Marey's focus on muscular and skeletal forces becomes even more pronounced with detailed diagrammatic analyses for each mode of jump. These diagrammatic analyses begin to suggest a method for describing the invisible wake of air, with their affinity for detailed structure and succession, but again, they are denied any sense of spatial context and create the impression that the movement occurring is purely two-dimensional. Sensing this, Marey made a brief switch from the chronophotographic camera, which could only photograph subjects from one side, to a stereoscopic camera which could produce more complex three-dimensional images that were more evocative of the sensation of movement.
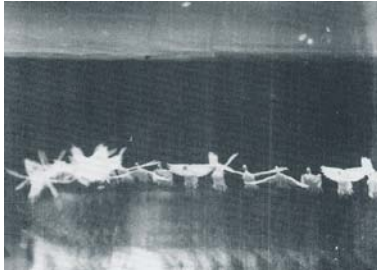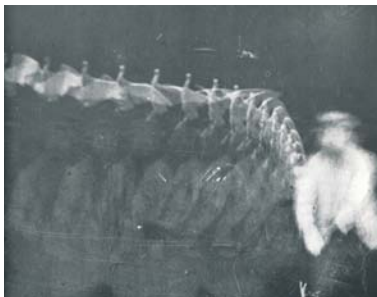
195 | *Flight of Duck Toward Camera*
Etienne-Jules Marey | **1887**

196 | *Flight of Duck* | Etienne-Jules Marey
1888

197 | *Flight of the Seagull* | Etienne-Jules
Marey | **1886**

198 | *Flight of the Duck* | Etienne-Jules
Marey | **1886**

In subsequent years we see Marey's study of locomotion extend to animals – the images of horses and cats are equally as bland as the early images of the human figure, but the images of birds in flight are compelling and signify a substantial shift in Marey's thinking. In *Flight of the seagull* and *Flight of the duck* (both around 1886) we begin to see a blurring of the image dictated by the speed of the subject being photographed, and though this must have been frustrating from a physiological point of view, it changed Marey's focus from thereon. The furious motion of the bird's wings is registered not as a clean, pure, isolated instant of the bird in flight, but rather as a body that is not at any instant still enough to be completely deciphered or rationalised. While the eye of the bird remains in focus through the sequences of images, its wings are a constant and ethereal blur and this creates an image that for the first time in Marey's work actually contains a sense of movement. Further, there is a very strong sense of sequence in how the series of images must be read, to the extent where we understand that if any one of the images in the sequence is removed the movement will cease and the bird will fall to the ground. This is in contrast to the images of the figures in motion, where the sense of instability that is inherent in motion is so profoundly absent that one image is not linked to another in any tangible or sequential sense. These images each stand alone as isolated physiological curiosities, but the images of the birds must be understood as a sequence in time.

Following the studies of birds in flight, Marey made another substantial shift and began photographing the movement of air around 1900. Although his experiments are still firmly grounded in the pursuit
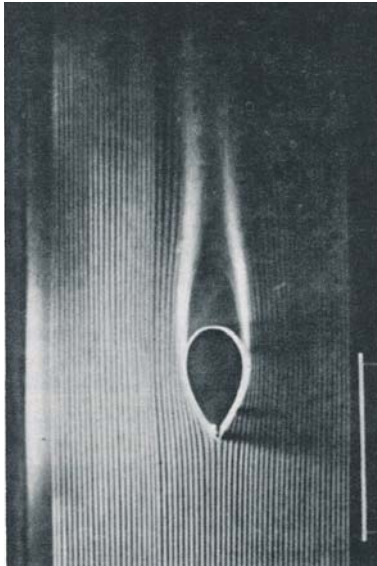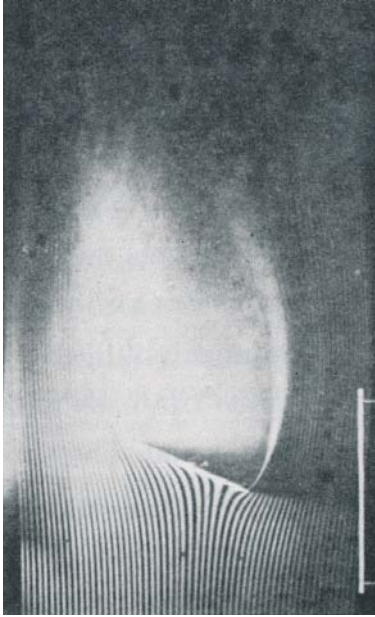
199 - 200 | *Studies of Air Movements*
Smoke trails created around obstacles of
various shapes | **Etienne-Jules Marey**
1901

of scientific knowledge, there is also a sense that his attention has turned more towards the invisible, the intangible, and to the rhythms of hidden atmospheres and elements. In *Studies of air movements* (1901), using smoke fillets in tunnel-like chambers similar to those used in his experiments with fluids in 1893, Marey made it his mission to 'see the invisible'.[174] He experimented with different interventions in the air stream, carefully monitoring variations in air flow caused by miniscule alterations to the interventions. Through these experiments Marey revealed the form of air moving around objects and made it visible for the first time, and this revealed an unexpected spectacle of fissure and turbulence as what was previously considered to be the knowable, civil air was quite suddenly revealed to be unstable and tumultuous.[175] In these images we see not the smooth space of fluid movement and uniform rhythm, but rather, a chaotic image of an air bordering on violence as the smoke is compelled into non-uniform vortices and currents in the space immediately behind the object. The appearance of this turbulence and chaos in the usually unseen air marked a resolute shift in Marey's practice, and laid the foundations for photodynamic experiments to come soon after. As Marta Braun notes, "Marey's study of the movement of air followed the same lines as his study of water. Guided by his perpetual ambition to clarify the action of the bird's wing on the air, he began by photographing the wing moving through the air and ended by photographing the air moving around the wing."[176]

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[174] Marta Braun, *Picturing Time*, (Chicago: University of Chicago Press, 1992), 217.

[175] Francois Dagognet, *Etienne-Jules Marey: A Passion for the Trace*, (Massachusetts: Zone Books, 1992), 128.

[176] Braun, *Picturing Time*, 216

201 | *Studies of Air Movements* | Smoke trails created around obstacles of various shapes | Etienne-Jules Marey | 1901

202 | *Pin-up Board Studies* | Sarah Bonnemaison | 2004


203 | *Karate* | Sarah Bonnemaison | 2004

In an effort to understand the meaning of Marey's experiments for architectural space, Sarah Bonnemaison and Christine Macy from Dalhousie University conducted a series of experiments that utilised some of Marey's early methodology. They attached lights to the hands and feet of their students, and then photographed the trail of light as they moved in predetermined modes of performance – a karate kick, a dance manoeuvre, a tactile exchange between bodies. Similar to Olafur Eliasson's *Pedestrian Vibes Study* (2004), the resulting photographs captured evocative images of fluid paths of light and lines like those of a calligrapher's brush that reveal the urgency of motion and the speed of individual gestures.[177] These images do, however, bring an odd quality of precision to even the clumsiest movement and again, as with Marey's images of the moving body, the sense of the instability of that must invariably pronounce movement is lost. There is no sense of the fall or of the displacement of mass that locate the moving body in gravitational space, and in this sense the images aesthetically misrepresent the body in motion. The chaos and turbulence that Marey's final experiments revealed is entirely absent from these experiments:

> First, we explored 'line' as a path of movement in dance and a drawn line in architecture. Second, we looked at 'surface'. In dance, this involved working with light, shadow and video projection to add complexity and meaning to the neutral setting of the performance. In architectural terms, our explorations into surface led us to use orthographic projection to map movement onto the surrounding walls (as with projected light), and also to explore the surfaces that could be generated from moving lines in space (like a mathematical surface or volume generated from a line in motion).[178]

[177] Sarah Bonnemaison and Christine Macy, 'Architecture of Motion' in Anthony Kiendl ed., *Informal Architectures: Space and Contemporary Culture*, (London: Black Dog Publishing, 2008), 184.

[178] Ibid.,183.
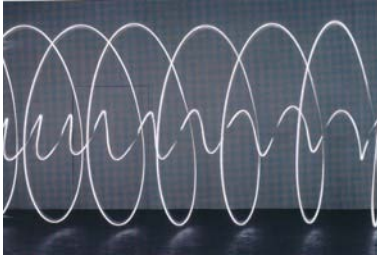
204 | *Pedestrian Vibes Study*
Olafur Eliasson **| 2004**

205 | *Pedestrian Vibes Study*
Olafur Eliasson **| 2004**

206 | *Pedestrian Vibes Study*
Olafur Eliasson **| 2004**

Although their investigation is aesthetically compelling and does represent a novel approach to the study of architectural space, Bonnemaison and Macy seem to overlook Marey's late-career transformation in looking beyond object to space. Their attribution of the significance of the experiment to surface, and their suggestion that it lead to a surface-based architectural design methodology does not reveal any new thinking regarding the relationship between body and architectural space. Their concern with surface reveals an alarming oversight of the fact that bodies should respond ultimately not to surface but to space, and therefore despite their methodology for generating surfaces directed by the movement of the body, the very solidification of edges actually works against the body and against movement because they end up being yet another boundary for the body to negotiate, avoid, and react against. As Evan Roth negotiated the challenge of surface in peeling his graffiti off building façades and allowing it to form and dissolve in three-dimensional space – in air – so too might Bonnemaison and Macy look past the planar surface to consider other kinds of forms that could be generated through their experiment, and carry us beyond the rigidly persistent idea of architectural space being a container into which the body is dropped. In their current form, their experiments seem quite contrary to the promising direction of Marey's air movement studies.

In the endeavour to track an alternative evolution for architectural space, one in which architectural space is generated by the body rather than inflicted upon it, it seems more fruitful to follow a path that does not involve re-enactment, but rather, an imaginative re-engagement with historic photographic experiment. First published in French in 1889, and possibly shaping some of Marey's experiments with air, Paul Souriau's

Aesthetics of Movement reflected the contemporary approach of ascertaining the material facts about how bodies move with a very important exception.[179] In perfectly rational language entirely consistent with the experiments in physiology at the time, Souriau soberly discusses the 'visible wake' of bodily movement, which we can understand as the existential tracing of an object's movement in time.[180] Although he describes this visible wake within the scientific context of deciphering the physiological aspects of movement, his discussion draws attention to the fact that the trajectory of movement was seen as a significant factor in understanding how bodies moved within space. For Souriau the visible wake was the luminous trail of the body, the after-image that is more than memory but is an actual visual manifestation of prior movement: "Owing to the duration of the luminous perceptions, the object literally describes its trajectory and permits us to appreciate its nature extremely well by leaving with us not just a memory but an actual image, a persistent tracing of its successive positions."[181]

The successive positions of an object are of course continuous and fluid in reality, and not separated by seconds or fractions of seconds. The time between this moment and the next in a fluid gesture is ultimately immeasurable, and conveying a sense of the persistence of movement was thus extremely difficult with the photographic techniques of the time. The chronophotographic technique, however, actively worked against creating any sense of continuity in the registration of movement within space due to the fact

[179] Francis Sparshott. 'Foreword', in Paul Souriau, *The Aesthetics of Movement*, ed. and trans. Manon Souriau, (Amherst: University of Massachusetts Press, 1983), x.

[180] Mary Ann Doane. *The Emergence of Cinematic Time: Modernity, Contingency, The Archive*, (Cambridge and London: Harvard University Press, 2002), 89.

[181] Souriau, *The Aesthetics of Movement*, 118.

that it constantly stopped and started. The persistence of the luminous tracing in Souriau's text is in many ways contrary to Marey's efforts to remove it from his photographs – but in the air works there is a distinctive sense of the persistence of movement even though it may not have been the focus of his efforts.

Around 1910 Italian brothers Arturo and Anton Giulio Bragaglia, who would ultimately associate themselves with the Futurist movement, endeavoured to remove the fractured sense of time evident in Marey's work, and set about disrupting a collective fixation with pure physiology to focus more on the existential aspects of movement. As artists from a family involved in professional photography, they were highly critical of the single-minded scientific approach to apprehending movement and were scathing of the foundation which Marey had laid for their practice:

> Cinematography does not trace the shape of movement. It subdivides it, without rules, with mechanical arbitrariness, disintegrating and shattering it without any kind of aesthetic concern for rhythm. It is not within its coldly mechanical power to satisfy such concerns… It merely reconstructs fragments of reality, already coldly broken up, in the same way as the hand of a chronometer deals with time even though this flows in a continuous and constant stream.[182]

What they sought then, was some kind of technique to capture the continuity of movement – the persistence of movement – and within that, inherently, the continuity of time. In *Change of position* (1911) we see a male figure on the right of the image shift his body forward and down, leaving a dynamic wake as

207 | *Change of Position* | Anton Giulio Bragaglia | 1911

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[182] See Bragaglia, Anton Giulio, 'Futurist Photodynamism,' trans and ed. Lawrence Rainey (1911), *Modernism/Modernity* vol. 15 no. 2 (2008), 363-379.

the traces of his hair, furrowed brow, eye cavities, lips, fingers and the creases of his coat are dragged across the image. Neither the beginning nor the end of the movement are captured as being distinct from the passage that links them, and between the two postures there is a striated blur of light that connects one posture to the other and orientates them in space. The effect of conveying the sense of movement is arresting in this particular image, as there are no fixed objects in the frame to evaluate the movement against – all we are able to read is the movement from one position to another via the luminous trail of light. In essence, what we read is the trajectory of movement, the continuous visible trail of that which is not normally visible. In *Typist* (1913) a similar effect is visible as two hands flutter furiously over a stationary typewriter. The image also conveys the sensation of movement, and importantly, the pace of that movement relative to the perfectly still typewriter, but it is not as spatial or as mysterious as *Change of position* because the blurring of the body in movement seems almost incidental. In *Change of position* the blur can be understood as the subject of the photograph; the visible wake is so dynamic and so present that it becomes the focus of the image. The forceful denunciation of instantaneity in photography is very clear in both these images and in the Bragaglia brothers' broader body of work. Through their innovative technique and their concern for matters extending beyond the realm of pure physicality, the Bragaglia brothers articulated their approach as 'photodynamic' and shifted the focus of movement studies from that which could be seen, registered and quantified to a deeper inquiry concerning the sensation of movement:
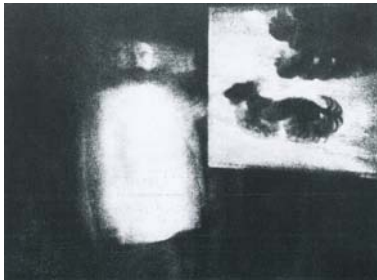
> The technique of photodynamism... involved a rejection of instantaneity in photography... Bragaglia claimed that cinematography and Marey's chronophotography are incapable
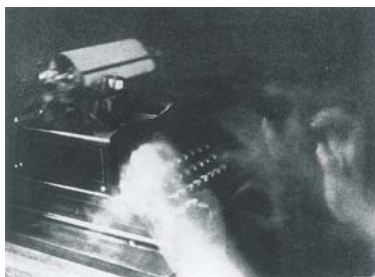
208 | *Typist* | Anton Giulio and Arturo Bragaglia | 1913
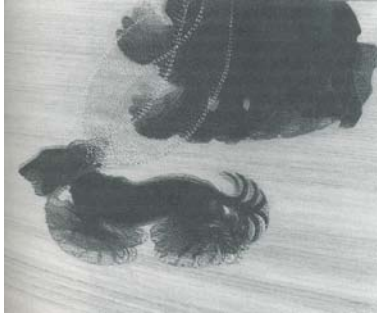
209 | *Dynamism of a Dog on a Leash*
Giacomo Balla | **1912**

210 | *Rythym of the Violinist*
Giacomo Balla | **1912**

211 | *Balla in Front of 'Leash in Motion'*
Anton Giulio Bragaglia | 1912

of achieving the intensity or precision of photodynamism's analysis of movement, and, more important, they cannot represent/ produce the sensation of movement – the 'inner, sensorial, cerebral and psychic emotions that we feel when an action leaves its superb, unbroken trace.' [183]

At precisely the same time as the Bragaglia brothers were experimenting with their photodynamic technique, Giacomo Balla was also exploring the sensation of movement in his paintings. In wonderfully delicate and fine brushwork, Balla presented *Rhythm of the Violinist* (1912) and *Dynamism of a Dog on a Leash* (1912), and was photographed in front of the latter work by the Bragaglia brothers in *Balla in Front of 'Leash in Motion'* (1912). Perhaps owing to the more expressive and inherently more interpretive medium of painting, Balla's images of bodies in motion seem more humorous in nature than the Bragaglia images, but they do nevertheless contain evidence of the visible wake. In Balla's paintings, however, this wake reads as being secondary to the speculative study of movement. The paintings also read as being more instantaneous and shattered than the Bragaglia photographs, which does not necessarily reflect intent, but is instead due to the differences of technique in painting and photography. Where the Bragaglia images stretch out in time revealing long instants that seem to unravel in an indefinite sense of time through the image, Balla's paintings have an insistent urgency to them, as if time were compressed and finite rather than extended and open-ended as it seems to be in the Bragaglia photographs.

In capturing the visible wake, the Bragaglia images succeed in revealing something that is normally hidden

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[183] Doane, *The Emergence of Cinematic Time: Modernity, Contingency, The Archive*, 87.

in the way bodies and space relate – something that perhaps UNStudio, Hadid and Libeskind aspire to capture but cannot. The Bragaglia brothers firmly believed the emergence of this hidden quality was an energy born of the metaphysical aspects of being. Even if we reject their belief, as we must, we cannot deny that something does emerge – a second layer of movement, a second layer of body, and a second layer of space. It is akin to an echo or a mirage, something real but somehow ungraspable, like the cornfield tornadoes and Patagonian mirages of Francis Alÿs and the unknowable walks of Hamish Fulton. The Bragaglia images possess a quality that compels an archaeological engagement, in that they invite us to penetrate the surface of the visible and discover something forgotten within each moment, something impossibly fragile that is to be carefully and painstakingly extracted. It is the air and it is movement itself, both forgotten in favour of that which is solid and impenetrable; it is the evanescence of invisible matter, and the weightlessness of that which lies just beyond what we are able to perceive. As Giovanni Lista writes, the Bragaglia images seem to show us the possibility of rendering the faceting of the Ego rather than the physiological chrysalis within which it lives.[184]

Intangible Architecture

The implications of this fleetingly fragile second layer of movement, body, and space are significant for our thinking concerning the production and composition of architectural space. The perception of a sense of space beyond what is immediately legible, comprehensible, or visible must necessarily alter our understanding of architectural space. This sense of space, which exists

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[184] Giovanni Lista, 'Futurist Photography' in *Art Journal*, Vol 41, no 4 (Winter, 1981), 360.

only at the outer edges of our consciousness, reflects a shift in the currency of architectural space as a tangible and enduring entity, and raises questions about the role of the moving body and the mass of air in which it moves. Can the emptiness of architectural space be somehow reconceptualised? Can architectural space itself be reassembled in terms of the invisible condensations, stratifications, and undulations of air? Can we understand our inhabitation of the structures of air as a form of intangible architecture? This second layer of movement, body, space – this intangible architecture – can be conceptualised as a way of thinking that compels firstly a re-reading of existing works of architecture, and secondly, a capacity to produce new works of architecture designed for and derived from the moving body.

In the first instance we may gather intangible architecture as an idea that provokes new imaginative readings of existing buildings. Here, each individual's movement generates a highly structured wake in the air, which sets the apparently still air of architectural space into continuous turbulent motion. The complexity of the wake is a factor of the complexity of individual movement within any particular architectural space – its edges, its scale, its materials and its demands on the body all affect the structure and perpetuity of the wake. Considering the aesthetic of Hadid's, UNStudio's and Libeskind's architecture we could reasonably expect the wake of movement within these buildings to be incredibly complex. However, as previously discussed, the trajectory of the body within these works is very tightly controlled and as such the wake of the body is relatively predictable. In contrast, the freeform buildings and landscapes of Ito encourage infinite variation in individual trajectory, and as such act to generate infinite variation in bodily wakes. This

re-reading offers the surprising realisation that the apparently dynamic architecture of Hadid, UNStudio and Libeskind is actually far less turbulent than the more serene architecture of Ito, not only because of the way the body is compelled into motion, but also because of the affect that the body's motion has on the air of architectural space.

Similarly, we can also re-read a range of other spatial situations including more mundane scenarios – a foyer, for example, with many bodies moving in different directions and minimal edges, becomes a complex jumble of ongoing turbulence; it is a space of wild, chaotic entanglements. A street, with a clearly discernable pattern of pedestrian traffic, defies its own strict linearity by adopting a transcendent sense of history where layers and layers of movement paths are built up over each other; the street is a stratified space, with particular temporal and directional patterns that are legible across a broad period of time. A sports field, an open space with little structure, becomes a dynamic ground for the interplay of dancing, springing bodies; no two paths are ever the same and the space is read as freeform. Lucy Lippard's description of a road recalls this approach of re-reading existing spatial structures and suggests how we might read a new structure, intangible architecture, into the existing built world:

> In Georgetown, driving on an almost-two-lane tarred road, I can call up its predecessors: the one-lane hard-top, the gravel, the dirt with the tall grasses growing up between the ruts, stained with oil from under the cars, the straightened curve now lying forgotten over there in the puckerbush. I can imagine even further back. The old road seen in photographs, described in recollections, is now woods, its ruts the faintest trace. Even as a newcomer, in New Mexico, once I know that the Avenida Vieja (the old road) ran northeast-southwest before the highways came in and

the adobe ruin next door might have been a stage stop, I can call it up along with the noisy carts and carriages that bumped over it.[185]

In the practice of re-reading architectural space to reveal a sense of intangible architecture, it is crucial to be carried away in imaginative terms – as Lippard's text shows, the act of reading spaces together with their multiple layers of historical spatial inhabitation is essentially an imaginative act. The recall of prior spaces, even those based in a first-person memory, is in fact always an act of imagination. The act of reading backwards, of imagining the past and actually acknowledging it as a kind of speculation, also allows us to project forwards to speculate on the future in a manner similar to that of Cecil Balmond and his ideas concerning structure as trace. Such imaginative journeying liberates our sense of space so that we are able to imagine the past, present and future inhabitations of space simultaneously. This is an exciting way of reading space because it contextualises our own inhabitation in a broad spectrum of human movement. Our own vectors of movement mingle and meld with vectors of movement made by other bodies in the past, and once we grasp this exponential overlay we are then able to imagine vectors of movement that are yet to be made. In this way architectural space becomes charged with a multitude of vectors – a frenzy of inhabitation reflected in real and imagined 'desire lines'. In this practice of re-reading existing structures to imagine an intangible architecture we can clearly see what Virilio describes, where "the measure of the world becomes that of the vector of movement."[186] The tangible architectural shell that is the site of these unfolding vectors seems almost irrelevant; it exists as a

[185] Lucy Lippard.,*The Lure of the Local : Senses of Place in a Multicentered Society*, (New York: The New York Press, 1997), 33.

[186] Virilio, *The Aesthetics of Disappearance*, 53.

stage does for a dancer, a silent ground, a mute witness to more dynamic becomings of body and space.

In this context, the chrysalis as proposed by Giovanni Lista can act as an architectural metaphor to articulate a concept of intangible architecture in which vector space comes to the foreground and tangible architecture moves to the background. John Hejduk wrote an especially memorable text about the chrysalis as architectural metaphor, and in it we see that his image of the chrysalis is about relating the intangible aspects of architectural space with a tangible, built reality. It helps us reconcile how a relatively abstract notion of intangible architecture might find relevance in a world of built architecture by quietly striating and then intertwining two equally strong but entirely different spatial forces. For Hejduk, the presence of a physical shell signified a kind of haunting absence and acted as a marker of a past condition. It pointed not to itself, but to an elsewhere that somehow contained the essence of the present moment:

> During a certain season in Texas, at dusk, some tree trunks seem to be phosphorescent... they give off a dull, blazing light. Upon close scrutiny it is found that the trunk of the tree is completely covered with discarded shells which were the outer body of certain insects. The startling fact is that the shell is intact; the form is exactly as it was when its original inhabitant was inside, with one difference. The inside has left, leaving the outer form which looks like an x-ray, producing the luminous effect. Suddenly we hear a chorus of sound coming from the dark leaves above. It is the sound of the insects hidden in the tree in their new metaphysical form. What is strange about the phenomenon is that we can see the insect's shell forms clinging to the tree, empty shells, a form that life has abandoned. While we fix our eyes on these apparitions, we hear the sound of the insect in its new form hidden

in the trees. We can hear it but we cannot see it. In a way, the sound we hear is a soul sound.[187]

This 'soul sound' is akin to a memory or a mirage that, like Alÿs's tornado chasing, dissolves precisely as it is recorded, articulated or traced. Like Fulton's walks, it exists as an elusive core that is invisible, inaccessible and ultimately ungraspable. And yet, despite the impossibility of it, it is always undeniably present. In the case of the chrysalis as Hejduk describes it, the intangible soul sound is woven together with the tangible physical shell – tangible and intangible are knitted together in an inseparable relationship in which the presence of each is ultimately underpinned by the other. In this way, tangible architecture and intangible architecture find a union in which each is absolutely critical to the others presence and it is impossible to imagine one without the other. Just as we are able to shift a focus with our eyes and consciously will a surface into blurriness in order to distinguish a pattern, so too may we see a new kind of architectural space by focussing on what is ultimately invisible. The result, as Manovich suggests, is an alternative mode of architectural space that is composed not of traditional dualities and adjacencies, but of intuitive internalities. In an architectural space based upon such internalities, the intangible is able to exist *within* the tangible and vice versa – a feat that is not possible in structures of adjacency. Beside each other, the tangible and the intangible remain locked in opposition, as contradictions of each other. Within one another, however, they become integral parts of the same idea. There is no sense of antagonism, extremity or conflict, and no talk of legitimate/illegitimate, real/unreal,

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[187] John Hejduk., "Evening in Liano," in Elizabeth Diller, Diane Lewis, and Kim Shkapich, eds., *Education of an Architect* (New York : Rizzoli International, 1988), 340-341.

actual/imaginary. Instead, there is a space in which all gradations of being exist equally and simultaneously.

This sense of internality that Manovich suggests is also found in Merleau-Ponty's *The Visible and the Invisible*. Here we find parallels between the tangible/intangible and the visible/invisible. Merleau-Ponty proposes that the invisible is not a contradiction of the visible, nor an extreme that negates its opposite. Rather, the two are intertwined in the sense that "the visible is pregnant with the invisible."[188] One holds the other, supports it and forms its space, but together they are one inseparable entity: "... the in-visible is the secret counterpart of the visible, it appears only within it... one cannot see it there and every effort to see it there makes it disappear, but it is in the line of the visible, it is its virtual focus, it is inscribed within it....".[189]

Following Merleau-Ponty's thinking, it is clear that in order to fully comprehend visibility there is an implicit need to understand the invisibility which it houses. Similarly, in an architectural context, to realise the tangible structure of space we must also realise the intangible structure that it houses – the ultimately intangible space of inhabitation that is registered only by the now-absent wake of our movement in air. The elusive tracks and traces of human movement that enliven architectural space, that activate it and indeed create it, are always present – but they are simultaneously always gone. We cannot apprehend intangible architecture any more than we can apprehend music. The act of playing an instrument, of acting upon it, produces the phenomenon of music, just as the act of inhabiting a space produces the

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[188] Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Alphonso Lingis, ed. Claude Lefort, (Evanston: North Western University Press, 1968), 215.

[189] Ibid., 215.

phenomenon of intangible architecture. Although it may be theoretically possible to measure the passage of sound waves within a space, and by that logic to also measure the turbulence of air in structures of intangible architecture, it is not possible or meaningful to attempt to measure either music or architecture in this sense.[190] We must be able to conceptualise an architecture that defies both quantification and representation, "to imagine beyond the present condition without freezing possibility into form."[191] Intangible architecture exists as an evanescent, shimmering, and precarious identity; just as the folly of measuring music is obvious, it is similarly absurd to propose a method for measuring or even representing the intangible structures of architecture. Intangible architecture is, by its nature, immeasurable; it is a phenomenon.

Beyond the imaginative act of reading intangible architecture in existing spatial structures, we may gather also intangible architecture as an imaginative force of influence in an architectural design process. It is a way of rethinking some key aspects of architectural space – to take up Grosz's words once again, it is about rethinking "the standard assumptions between being and building."[192] In this sense, intangible architecture is not a design proposition, nor is it a design method – rather, it is a philosophical stance that precedes and influences both design propositions and methods to prompt architectural outcomes that are genuinely concerned with the moving body and its sense of experience.

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[190] It is theoretically possible to measure the passage of sound waves within enclosed spaces, however it has never been done and there is no computer on the horizon that is able to make some complex calculations. The engineering of sound is, apparently, a shockingly imprecise endeavour. See Barry Blesser and Linda-Ruth Salter. *Spaces Speak, Are You Listening?: Experiencing Aural Architecture*, (Cambridge, Massachusetts: MIT Press, 2007).

[191] Rendell, *Art and Architecture: A Place Between*, 188.

[192] Grosz, *Architecture from the Outside: Essays on Real and Virtual Space,* 59.

This sense of intangible architecture goes beyond the tracking/tracing practices of the locational media artists, and the following/enacting pieces of Acconci, Alÿs and Cardiff. It goes beyond Marey's pivotal shift from visible to invisible, beyond Souriau and the Bragaglia brothers' notion that moving bodies create a luminous, airborne wake. It goes beyond the need for a tangible, sensory affect to anchor an approach in the measurable, as with Haque's *Scents of Space* and Snibbe's *Breath* series, and it looks past the carefully orchestrated production of specific bodily vectors of Hadid, UNStudio and Libeskind. In the end, it is really only Ito's approach that can be comfortably reconciled within this broader sense of intangible architecture. It is there, in his reflection on the cherry blossom viewing party, where he states his priorities so clearly: first the body, then the event, then the architecture. This order is critical in terms of conceptualising the intangibility at the heart of architecture.

In physical terms, and in the specific order of body/event/architecture, intangible architecture can be understood as a 'shadow' of a moving body – a structure in air that is created *in response* to movement. We can't see it, smell it, feel it or perceive it; we can only imagine it, a phenomenon just beyond our grasp. In principle, intangible architecture is a structure of cause and effect in which the effect is understood as the shadow of the cause, much like Long's *Line Made by Walking* and Muñoz's *Aliento (Breath)* which both celebrate an action and the subsequent reaction. Physical traces that signify a prior event, such as the thread of Alÿs's sweater unravelling or the photographs and texts of Fulton, can also be understood as shadows – shadows of physical gestures now past. The inscribed earth in the wake of a tornado, an inflated balloon, a walker following Cardiff's voice – these too are shadows.

In the same way, a work of tangible architecture can be understood as a shadow of a moving, productive body. In an act akin to the production processes of Long and Alÿs, a work of tangible architecture is *constructed* – it is a long, gritty, physical process in which the body simultaneously produces and inhabits space day after day after day, gradually adding small parts to a larger whole. Like the inflation of a balloon, a work of tangible architecture under construction operates within a framework of cause and effect. It is, in essence, a series of physical gestures, and the cumulative effect of those physical gestures is a series of 'solidified shadows' which become the physical form of a building.

Again following Merleau-Ponty, the tangible houses the intangible, is pregnant with it, and so we could suppose that tangible architecture might provide a physical clue about the existence of intangible architecture. Contrary to expectation, it does not, because the intangible gestures of the body that have given rise to the tangible are now gone. The moving, productive body that danced the building into being has departed, and all that remains is the physical trace of that process as a work of tangible architecture. It is like trying to grasp the gap between distant thunder and lightning, or seeing the shadow of an aeroplane pass across the landscape and then being blinded by the sun as we seek the aeroplane itself. Tangible architecture is a shadow of intangible architecture. It is easier and perhaps more instinctive to think of the fleeting, ethereal, invisible aspects of architecture as shadows, but in fact the reverse is true. Tangible architecture is the residue of a constructing body that is now gone: it is a shell, a chrysalis.

In this sense the inhabitation of architecture is profoundly different from the earlier analogy of

playing an instrument. An instrument is *acted upon* to produce music; it is *inhabited* in order to produce the sonic phenomenon of music. In architecture, however, it is the 'music' that unfolds first in the form of the inhabitation of the constructing body, which then ultimately leaves behind the 'instrument' as a work of tangible architecture. Beyond this initial construction process, in which every crossing of body and space is visibly dynamic because it produces a tangible outcome, there is a longer, subtler phase of architecture that gently unravels through time – the phase of inhabitation. Here, the chrysalis that is tangible architecture is lived in. It is scrubbed clean, altered, decorated, appraised. It is populated. It becomes, as Morris says, a habitual space, in which near-identical patterns of inhabitation are played out on a daily basis. After all the visible production of space during the construction phase, the body retreats from the material edge of space and has little evident impact on it except for, very occasionally, a worn timber threshold or the gleam of an often-touched stone wall. The rare instance where tangible architecture physically reflects its inhabitation is yet another shadow – as we behold the worn threshold we imagine the sole of the foot in contact with it, and with the foot the leg, and with the leg the body, and with one body other bodies.

Although the worn threshold is a clue for grasping the larger hidden patterns of movement, it is in the *absence* of physical clues that we find the most concentrated forms of intangible architecture. It is in the architecture that does not prescribe the bodily trajectory; in the architecture that allows the body to move freely and cause maximum disturbance in the air. The intangible movements of the body that brought the tangible into being go on to create intangible structures in the air – the air is stirred by the body, it is accelerated, reflected,

and condensed in space. Perhaps it is in eternal motion, bouncing around in a world of edges; or perhaps it settles invisibly like dust, thickened and sedimented, an intangible chrysalis clinging precariously to the internal surface of its tangible shadow. The not-knowing is actually critical in this sense of intangible architecture, and takes us back to Irigaray's unknowable abyss of air and again to Balmond's notion of structure as trace in which the structure of a building is conceived as the as-yet-unmade trace of inhabitants of a building that has not yet been built, designed or even thought. Improbable as it seems, Balmond's imaginings of the unknowable and unfathomable are used to underpin the otherwise rational business of structural engineering – a practice not unlike the Vedic seers reading the invisible path of a bird's flight through air or Irigaray's grounding of being within air. Intangible architecture is not known and cannot be known in a definitive sense, just as there can be no trace, no residue, no footprint, no anchor. Intangible architecture must be *imagined* and *sensed*, as Merleau-Ponty describes, as a circular phenomenon between shadow and body in which the awareness of the shadow conditions the understanding of the body.[193] Here, at last, the construction process is one with the physical dissolution of a forgotten architecture; a shadow, an inverse, everything together and simultaneously nothing.

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[193] Merleau-Ponty, *The Visible and the Invisible*, 256.

Epilogue

The way to the mountains starts here [194]

one / two / three / four
one / two / three / four / five / six
one / two / three / four / five / six / seven / eight [195]

del hi / harid war / janki chatti / yamu notri
del hi / harid war / janki chatti / yamu notri / janki chatti
gan gotri
del hi / harid war / janki chatti / yamu notri / janki chatti
gan gotri / gam ukh / gan gotri

air / road / road / foot
air / road / road / foot / road / road
air / road / road / foot / road / road / foot / foot

[194] Fulton, *Walking Artist*, Dusseldorf: Richter, (2001), 7.

[195] Philip Glass, 'Knee 1' in *Einstein on the Beach*, (1993).

A walk is practical not theoretical [196]

My practice explores processes of assembly and repetitious gesture through the inhabitation of space. Architectural concerns emerge in geometry, proportion and materiality as planar surfaces are 'disturbed' through an extended series of focussed physical gestures. Two-dimensional space is called into question as surfaces are dissolved through perforation or forced into tension and compression through dense fields of hand-stitched transparent line work. The works may be considered as active planes, where undulating architectural surfaces draw attention to both artefact and process, and evidence past sequences of conception, construction and inhabitation.

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[196] Fulton, *Walking Artist*, 8.

I walk on the land to be woven into nature [197]

"Time that is moved by little fidget wheels is not my time, the flood that does not flow."[198] I move between Sydney, Delhi and the Gamukh glacier high in the Indian Himalaya and discover something of time and space. It is a blind journey in which I join countless Hindu pilgrims on narrow gravelly paths unravelling through mountain landscapes. I waver in my reasoning, knowing and not knowing what has brought me here. I've seen that simultaneity, that dual-truth, where the river flows to the sea. I was sky-bound, peering down at the vast flooded plain slowly bleeding out. It's impossible to tell where the land stops and the sea starts.

[197] Ibid., 8.

[198] Kenneth Slessor, 'Five Bells', 1939.

The rhythms of a walk [199]

There's a rhythm to the land, made visible through walking. The walker walks in time to the builder sawing, the priest chanting. There is a common pulse; the birds flying, the old dying, the beans growing, the farmer hoeing. Sometimes, when I'm walking, the place and time where I am fades into a strange kind of blur. The edges fray and the ground before me slips out of focus. All I am left with are sounds: the sounds of distant temple bells and grains of airborne rice bouncing off the stone ground.

[199] Fulton, Walking Artist, 11.

Rules of the way [200]

> Special attention for trekkers: The pilgrims
> who are fond of trekking are advised to have
> a special attention while climbing on the
> hills. Some people have a habit of watching
> here and there, particularly watching natural
> scenery. Please note that such habit or practice
> results in tumbling down and eventually even a
> loss of life. The most comfortable conveyance
> (ponies) should be used while travelling on
> the hills. If you want to look at any scenery
> or a sublime beauty of nature, you must
> steadily stand up and see it to your complete
> satisfaction and then again start walking to the
> naturalist paradise. [201]

I observe myself thinking a thousand things at once and
call my mind to the moment. I am attentive to my feet
and to the plethora of potential mishaps brought into
focus in an ill-considered step. The rules are not just
about safety, and though the paths are frighteningly
unstable and it's easy to imagine the disasters-in-wait,
I understand that half-attentions are not appropriate
on this journey. The mountains require a transparent
consciousness, a mindfulness of body and spirit, an
unwavering attention to the present moment. I recede
quietly into insignificance in the scale of this landscape.
I am mute.

The slope is excruciating, the air hopelessly thin, the
way unbearably long and winding. I turn each corner in
conditioned expectation, desiring a destination against
all common sense, but the path continues to curl
eternally into the valley. I breathe, I step. Breathe, step.
I am far from ocean, but Einstein on the Beach and
Philip Glass still structure my slow uphill trudge. I am
the ascent, the feverish pitch, the cacophony of voice,

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[200] Ibid., 9.

[201] Anonymous, *Char Dham Yatra Guidebook*, Haridwar:
Randhir Prakashan, undated, unpaginated.

the singularity. I am within the nothing-everything born of the physical push, the long and steep and airless uphill, the loss of body through extended use, the dissolution and departure of the physical.

Nothing stays the same [202]

I consider the condition of my orbit, and think only
of the time and tides necessary to make this work.
It demands a silence, a quiet space of sunlight and
still air. It requires a contemplative mind prepared to
follow the line from the front to the back, through a
boundary, from light to darkness and back again. I call
upon blindness as I travel within, dragging myself along
razor-sharp edges in the danger inherent in journeying
to unknown places. I am drawn equally to both sides
and fall in and out of knowing and not-knowing. My
movement is cyclical, for I am bound to architecture
and its geometries and overlay all with neat orders
of systems and grids. In one life I carve air into sharp
slivers; in another I breathe in liquid air and watch it
seep out through an architectural skin; in yet another I
hover in the upper air, floating to allow the diffuse mist
of objectivity separate me from myself. The movement
between these positions is a constant and conscious
oscillation, and part of an ongoing questioning of ideas
that habitually settle, compress and solidify. To practise
across disciplines is to turn knowledge over before the
rot sets in.

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[202] Fulton, *Walking Artist*, 9.

It's early. The light is about to spill over the horizon, and I'm caught in the delicious moment of being here before the event. Everything is charged. The cool water folds around me, an exquisite salty silk. I focus on each breath, and drift freely in this curious state of suspension.

I knew it wouldn't be a predictable journey. I could see the current flowing away from me, but I leapt in anyway. I had to swim against it. Somehow, I needed to. It's hard work though. There are obstacles. Distractions. Irritations.

Legs and arms flailing and water splashing and lungs thrashing and really, it's a violent life. There never seems to be quite enough air or energy or space. At certain moments I force myself limp and let all thought and ambition and diplomacy drain from my fingertips. I float. With eyes closed and ears submerged, I hear only underwater sounds. I float. Body dissolves into mind, mind into soul, greens into blues and blues into greys and it's like being in Rothko's field, breathing luminescence and radiating gentle glow. Its dissolution seeping through pores; a melting, a channelling, a spilling. And then, when the time is right, I gather all energy and go again. I power away into the clamour leaping and dipping and soaring. A life like salmon, I suppose.

It's that state of suspension, the moment between this and the next, that reels me in. At the collision of academia and art practice, shards of idea and expression form an intricate mosaic. Pressed hard up

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against the meniscus, two worlds come sharply into focus and it becomes possible to dwell in that fine edge that is neither air nor water.

Out and back, or – out and just keep going? [204]

I walk on small stones that shear against each other underfoot, releasing clouds of grey Himalayan dust that feather and trail in my wake. I move within a rhythm, and project myself into that on which I tread. I am small, smooth, white. In the melee of passage I am expelled into thin mountain space, tumbling at tremendous speed in the frictionless air until I am swallowed whole in one silent and invisible moment by the green, gurgling Ganges. I am engulfed, enveloped, trapped in that underwater thumb-ball hold: in the nothing that is neither long nor short.[205] I am carried by a different speed, not an airborne-momentum but a capillary-speed, a seeping, flowing, inevitable movement governed by topography and gravity. I am lush foothill, parched plain, saturated delta, muddy mouth. This walk connects me to all places where the river flows.[206]

I leave footprints, tidy trails that tell me where I am and where I have been. Each compression of earth is a site of transmission: the contact channels an intense and rapid flow of energy from earth to body. It is a sole transference; a soul reciprocity. The trace is read in luminosity, golden beams of light emanate from my footprints and stream into the atmosphere.[207] Time slows and extends as I consider my own tracks; it contracts, intensifies, collapses. Both footprints and light are within a single continuum, simultaneously visible and inhabited. I am everywhere, altogether. My footprints are memory-anchors connecting time, space

[204] Ibid., 12.

[205] Slessor, 'Five Bells', 1939.

[206] See Anne Feldhaus,'Rivers and Regional Consciousness' in *Connected Places: Region, Pilgrimage and Geographical Imagination in India*, (New York: Palgrave Macmillan, 2003), 17-43.

[207] See Jutta Jain-Neubauer, *Feet and Footwear in Indian Culture*, (Toronto: Bata Shoe Museum Foundation, 2000), 76.

and place. My passage is marked by an indelible trail of soul-prints in the dusty gravel.

In Gamukh I sit on a flat rock and watch the river spill out of the glacier. I am not an ecstatic pilgrim; I am forlorn. My gaze shifts from the torrential spectacle and rests instead on smooth river stones fringed in delicate icy lace. The water slows, eddies, and freezes in a moment of hesitation. It is bound to the stone, at odds with it and at one together. Being here is burdened with the weight of having to leave, the weight of having to let go of what is newly attained. I am lost in a state of grief, and had not anticipated that the arrival would precipitate the departure.

Accumulation and transition [208]

I have been stitching for 50 hours, and have used 624
metres of white linen thread to construct a series of
densely stitched lines approximately 15 metres long.
Individual stitches slowly multiply to become a single
line; single lines slowly multiply to become multiple
lines. There is a table, a chair, and a lamp. I sit at the
table, very still, with the embroidery hoop in front
of me and my hands on either side of it. I have been
breathing. There has been only one small recurring
movement. It is the movement of my arm in drawing
the thread in and out of the fabric. Stillness, but for one
this one repetition.

[208] Fulton, *Walking Artist*, 9.

(Walking walking, too much thinking thinking) [209]

It is this first part that frightens me, this first part of every walk in these mountains. I stand at the bottom and look up. For all the romance of walking, there is still this outrageously steep series of switchbacks that must be negotiated. Battled. And it is a battle, a physical battle and a psychological battle, body against mountain, body against mind. This first set of switchbacks – just the first set – requires me to climb higher than the highest mountain in my homeland. I can barely process it, but I start out, and I start out knowing that it will be hard, and that I will want to stop again and again. On the first few switchbacks I feel fine – strong even – and I try to keep hold of the big picture. But the optimism required to make the ascent soon dissolves: another turn, and another. And another. Mountains are mysterious, for flatland South Australians. I cannot comprehend how big these mountains are and why we would want to be walking them. They're big mountains. They're not particularly big mountains. The snow is deep. The snow is not that deep. I'm getting sunburnt. The sun is not strong enough to burn. It's cold. It's not that cold. It will never end. It will end soon.

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[209] Ibid., 11.

Build an experience [210]

The tactile present offers clues for imagining past and future inhabitations of space. Two figures dance on either side of the canvas in the delicate postures of disentanglement and constancy. The line is held in air as it is drawn from front to back; its passage through the canvas marks both space and time, and its taut presence is a reminder of all that transpired to make it so. Space is constructed as the needle materialises, traces arcs in air, and returns to the site adjacent to its prior disappearance. Here, the grid is not of itself but exists rather as a site for contemplation and action. The works themselves are lived spaces and act as the residue of inhabitation; each puncture of the canvas signals an associated spatial and bodily act that took place in a certain time and space. Subtle shifts permeate the repetitious gesture, and the inhabitation of space expands with the memory of the line stretching, sinking and folding. The line loops backwards and forwards through time, differentiating the apparent homogeny of our spatial inhabitation. Each movement of the needle marks a re-visiting, re-thinking, and re-working as that which has already been contemplated is contemplated again.

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[210] Ibid., 12.

Walking into the wind [211]

There is walking, and then there is the desire to walk.

I am charged with that desire as I pace this vessel, struggling for each step against the furious winds of the Horn. It is so close, and yet so far away, across a wild ocean that prohibits our walking in that place today. It is a cruel twist of fate, inevitable I suppose, and somehow sorely fitting, that I should travel so far to walk in this place of extremity and then be defeated by it. Instead of walking I must stand still and watch the swell rolling in from the Drake Passage and the wild wind of the far south whipping the waves to white, the waves that separate me from walking along the small pier, around the lighthouse, past the family home braced against the elements, to the monument and beyond.

I have come for the air, to walk within the air, the wildest and most untamed air outside the Poles. It is a solid air down here, a palpable force that flattens skin and gesture. It is an air of profound resistance, substantial enough to fill sails as if it were a heavy liquid, and drag them to the bottom of the sea like dead weights. There are eight hundred ships below this one. Ten thousand men.

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[211] Ibid., 7.

Slowness – lost to the stars [212]

I ride toward the glacier in a midnight darkness. A faint flicker of torchlight wobbles across the path ahead, illuminating a mute surface trapped in ice. The darkness is black and cold and impenetrable; it is thick and heavy and viscous. It weighs down on eyeballs, an immovable pressure that clogs and sticks. It leeches the colour from everything; lungs soak in black air, body bleeds in black blood. I stare out through vacant eyes and the darkness flows in, dissolving, erasing. So dark you bore no body, had no face, but a sheer voice that rattled out of air.[213]

There is a bell, an echoic clang that pierces the Himalayan darkness. It resonates and recalls, returns me to a past, to church-going days, to schoolyards, to alpine walks when I muddled along little tracks and heard cowbells in the distance. It returns me to the temple, to the ceremony, to a solemnity and a single, crisp note that pulled me back from my floating and meditative state. Above, the flat and rapid wind licks snow off the peaks streaking the darkness with tendrils of white. The pony slips and falls on ice and I cling, with eyes closed against the cavernous darkness above and below. I listen only for the bell, the bell that keeps me here.

Between the breath and the footstep I am lost in hypothermic oblivion. I am without eyes, without fingers, without feet. A coffin walks silently toward us, and grim expressions in the darkness reveal the chilling truth of conditions at the temple. I hold on, and even as the torchlight dies, I listen for the bell.

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[212] Ibid., 12.

[213] Slessor, 'Five Bells', 1939.

Placing one foot in front of the other [214]

I walk in silence. I am ahead of the group as we descend from Burstall Pass. As I cross the marsh, I accelerate in a deliberate attempt to leave the group further behind. I want no chatter.

I think David is walking behind me. I sense it, but I don't look back. He is so silent, perhaps four or five paces behind me. He is walking exactly in time to my footsteps. I cannot hear his breathing. I walk and walk through the knee-deep snow along a flat path beside a lake. Every now and then the snow falls off the fir tree boughs and makes a little 'poof' sound as it falls to the ground. On and on I walk, with the faint echo of our simultaneous footfalls pricking the memory of where I stepped a moment ago.

[214] Fulton, *Walking Artist*, 7.

Inhale exhale [215]

This place is draped in silence, a heavy veil so quiet that
all I can hear are my footsteps and my breathing as I
move uphill through the heat waves. The heat comes
in liquid torrents, obliterating all before it. I lie flat, my
edges smudged and vaporising. I walk in the river of my
own perspiration. Everything slides, trickles into pours,
and I leave not footprints in the earth, but puddles
where I was dissolved in the blazing body-air of the
forest.

[215] Ibid., 10.

It's like this, there's what you've experienced yourself – and then there's what you've read about [216]

Tuesday. You are on all fours, all day, every day. It's big, and it's unknown, and it's unforgiving.
Your knuckles are red with the stretch and pull; the stretch and pull and staple. You say it is buckled in that corner and must be reworked, so again you drag its weave over raw skin, and stretch and pull and staple. Then, out of remote and distant air, he phones and says, this is strange, but she is missing. Their car is in the car park, untouched, abandoned. They've started a search. A little wave washes over you, the sweep of the unknown. You know that they know not to walk. You pull and pull again, streaks of knuckle-blood within the seams, but still it won't lie flat. At night, your sleep is prickled with a strange depth, but within it you recognise the light of hope, intuition and sense. You know that they know they must sit, and wait.

Wednesday. He phones and says they've found footprints on the far side of the range. The footprints cross a track. You nod, wanting to believe, and then you gather arms and legs and together haul the structure up. You lean against it while others drill and sand and plug, smooth cool timber against your cheek. You feel small and silent and voiceless. The wave returns, voluminous and turbulent. The depth becomes deeper and darker and it now stirs within your body; a faint quivering of organs, voice and fingers. Still, it won't lie flat. They know not to walk. And they also know not to cross a track, but to follow it, one way or the other. All tracks lead to somewhere.

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[216] Ibid., 12.

Thursday. You wrap things up, you marshal the troops, you organise, tidy, and set things straight. You sweep the floors and carry the sawdust to the garden. You adjust the tension of every thread, blindly, mechanically, methodically, fingers lingering on every aperture. You trim the fray by delicately running the sharp blade along a groove. We know the footprints are theirs, we've matched them to those by the car, they say. Two sets of prints, the trace of two lost walkers. What is a walker in this place? What can a walker do in such a landscape amongst the blue-grey haze of identical paths and rocks and trees? The cicadas sing your end. A walker cannot survive.

Somehow, you get home, and then everything gives way. This wall you've built for yourself crumbles, and there's an outpouring of grief. It's grief for that which you do not yet know, but have allowed yourself to observe for the first terrifying time. You are shaking violently, and collapse in a flood that you did not know had welled within you. You are on the floor, empty, full of the unknown and the fear that you have finally allowed yourself to acknowledge. The cavernous space of possibility opens beneath you; a deep and dark bottomless chasm charted only by the echo of your cries as you fall within it.

Friday. There are five helicopters, fifty walkers, and twenty local stockmen on horseback. You adjust the lights with trembling hands. The precariousness of the ladder seems to help. You keep it steady. You keep yourself steady. At twilight, you ask the question that you need to but dread to ask. How long? How long can you comb the landscape like this? At the opening, you decide to speak. You speak the story and make it real through voice. You collect sympathetic expressions and comforting squeezes but it's clear that no one else can

fathom this unknowing as you do. You are utterly alone in plotting its territory in this place, you are alone in its seeping darkness, in its sickness in the pit of your stomach. The unknown is a solitary territory. You alone do not have the courage to confront what you know must be confronted. If you'd confronted it, you'd be out there, on foot, not here.

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Catalogue of Creative Work

List of Creative Work

01 *Jaal* | front view | 2004 | 70 x 70 x 3cm | acrylic, glass beads, shirt pins, mdf

02 *Jaal* | side view |2004 | 70 x 70 x 3cm | acrylic, glass beads, shirt pins, mdf

03 *Untitled* | front view |2004 | 30 x 30 x 3cm | acrylic, shirt pins, mdf

04 *Untitled* | side view detail | 2004 | acrylic, shirt pins, mdf

05 *Belaau* | process detail | 2004 | tape, acrylic, mdf

06 *Belaau* | front view | 2004 | 50 x 50 x 3cm | acrylic, glass beads, mdf

07 *Belaau* | side view |2004 | 50 x 50 x 3cm | acrylic, glass beads, mdf

08 *Belaau* | detail | 2004 | acrylic, glass beads, mdf

09 *Untitled* | front view | 2005 | 70 x 70cm | acrylic, monofilament, canvas

10 *Untitled* | process detail | 2005 | acrylic, monofilament, canvas

11 *Untitled* | 2005 | 70 x 70cm | acrylic, monofilament, canvas

12 *Untitled* | detail | 2005 | acrylic, monofilament, canvas

13 *Untitled* | front view | 2005 | 50 x 50cm | acrylic, monofilament, canvas

14 *Untitled* | side view | 2005 | 50 x 50cm | acrylic, monofilament, canvas

15 *Untitled* | detail | 2005 | acrylic, monofilament, canvas

16 *Untitled* | reverse side detail | 2005 | acrylic, monofilament, canvas

17 *Untitled* | front view | 2006 | 70 x 70cm | acrylic, monofilament, canvas

18 *Untitled* | reverse side detail | 2006 | acrylic, monofilament, canvas

19 *Untitled* | front view | 2006 | 30 x 30cm | acrylic, monofilament, canvas

20 *Untitled* | side view | 2006 | 30 x 30cm | acrylic, monofilament, canvas

21 *Untitled* | process detail | 2005 | 2.5 x 1.1m wooden chopsticks, linen, polyester

22 *Untitled* | process detail | 2005 | 2.5 x 1.1m wooden chopsticks, polyester, heat-set linen

23 *Untitled* | process detail | 2005 | 2.5 x 1.1m wooden chopsticks, polyester, heat-set linen

24 *Untitled* | detail | 2005 | 2.5 x 1.1m | absent wooden chopsticks, absent polyester, heat-set linen

25 *Untitled* | interior view | 2005 | approximately 3 x 2m | absent wooden chopsticks, heat-set shaped cotton voile, polyester

26 *Untitled* | interior view | 2005 | approximately 3 x 2m | absent wooden chopsticks, heat-set shaped cotton voile, polyester

27 *Untitled* | process detail | 2005 | approximately 3 x 2m | wooden chopsticks, cotton voile, polyester

28 *Untitled Cloth Experiment* | detail | 2005 | 30 x 20cm | heat-set shaped cotton

29 *Untitled* | front view | 2005 | 40 x 40cm | heat-set shaped cotton gauze

30 *Untitled Stitching Experiment* | front view | 2005 70 x 70cm | canvas, monofilament

31 *Untitled Stitching Experiment* | detail | 2005 canvas, monofilament

32 *Small Wake Stitching (3rd Reflection)* | front view
2006 | 30 x 30cm | cotton thread, dyed calico

33 *Small Wake Stitching (3rd Reflection)* | detail | 2006
cotton thread, dyed calico

34 *Small Wake Stitching (2nd Reflection)* | detail | 2006
cotton thread, dyed calico

35 *Small Wake Stitching (1st Reflection)* | detail | 2006
cotton thread, dyed calico

36 *Char Dham Walk (Garhwal)* | front view at Ivan
Dougherty Gallery | 2007 | 1.7 x 1.7m |
monofilament stitching and acrylic paint on canvas

37 *Char Dham Walk (Garhwal)* | detail | 2007
monofilament stitching and acrylic paint on canvas

38 *Fushimi Inari Walk* | front view at Ivan Dougherty
Gallery | 2007 | 1.7 x 1.7m | monofilament stitching
and acrylic paint on canvas

39 *Fushimi Inari Walk* | detail | 2007 | monofilament
stitching and acrylic paint on canvas

40 *Char Dham Walk (Garhwal)* (left) and *Fushimi Inari
Walk* (right) | front side view at Ivan Dougherty
Gallery | 2007 | 1.7 x 1.7m each | monofilament
stitching and acrylic paint on canvas

41 *Char Dham Walk (Garhwal)* | process detail,
stitching with Meeray Ghaly at SCA studio | 2007
monofilament stitching and acrylic paint on canvas

42 *Char Dham Walk (Garhwal)* | reverse side detail
2007 | monofilament stitching and acrylic paint on
canvas

43 *Interference* | installation view at Tin Sheds Gallery
2007 | dimensions variable, each panel
approximately 2.5 x 3 x 0.2m | plywood, belgian
linen, viscose ribbon, linen thread

44 *Interference* | installation view at Tin Sheds Gallery
2007 | dimensions variable, each panel
approximately 2.5 x 3 x 0.2m | plywood, belgian
linen, viscose ribbon, linen thread

58 *An Architecture of Thread and Gesture* | installation view at the Japan Foundation Gallery | 2008 dimensions variable | tyvek, monofilament, acrylic, carbon fibre

59 *An Architecture of Thread and Gesture* | installation view at the Japan Foundation Gallery | 2008 dimensions variable, space approximately 2.5 x 4 x 6m | tyvek, monofilament, acrylic, carbon fibre

60 *An Architecture of Thread and Gesture* | installation view at the Japan Foundation Gallery | 2008 dimensions variable, space approximately 2.5 x 4 x 6m | tyvek, monofilament, acrylic, carbon fibre

61 *An Architecture of Thread and Gesture* | installation view at the Japan Foundation Gallery | 2008 dimensions variable, space approximately 2.5 x 4 x 6m | tyvek, monofilament, acrylic, carbon fibre

62 *An Architecture of Thread and Gesture* | installation view at the Japan Foundation Gallery | 2008 dimensions variable, space approximately 98 x 141 x 205cm | tyvek, monofilament, acrylic, carbon fibre

63 *An Architecture of Thread and Gesture* detail | 2008 tyvek, monofilament, acrylic, carbon fibre

64 *An Architecture of Thread and Gesture* | process detail, perforation work | 2008 | tyvek

65 *Char Dham Walk* | enroute to Gamukh | 2003 digital photograph

66 *Char Dham Walk* | enroute to Kedarnath | 2003 digital photograph

67 *Char Dham Walk* | enroute to Yamunotri | 2003 digital photograph

68 *Char Dham Walk* | enroute to Gamukh | 2003 digital photograph

69 *Char Dham Walk* | enroute to Gamukh | 2003 digital photograph

70 *Char Dham Walk* | pilgrim at Gamukh | 2003 digital photograph

71 *Fushimi Inari Walk* | 2006 | digital photograph

72 *Fushimi Inari Walk* | 2006 | digital photograph

73 *Banff Walk* | Burstall Pass | 2007 | digital photograph

74 *Banff Walk* | Burstall Pass | 2007 | digital photograph

75 *Banff Walk* | Burstall Pass | 2007 | digital photograph

76 *Banff Walk* | Sulphur Mountain off-trail, with Hamish Fulton | 2007 | digital photograph

77 *Banff Walk* | Burgess Shale | 2007 | digital photograph

78 *Banff Walk* | Colombia Icefields | 2007 | digital photograph

Significant Terms

Augmentation | a laying-over and laying-through; a penetrating enrichment; an amplification, a heightening; an oblique reiteration.

Choreography | a sequence of formal or informal gestures; a spatial pattern of inhabitation; a composition, a writing; a plan, an intention.

Construction | a process of formation; a making of something as an additive process; a bringing together of a series of elements; a setting-up, an establishment, an assembly, a structure.

Crossing | an irreversible intersection of elements (body, space); a collision; a traversal from one state or place to another; a passage, a voyage, an extension.

Disturbance | an agitation of a settled condition; a re-ordering of predictable behaviour, a disruption; an anxiety, a setting-on-edge, an intrusion, a churning.

Inhabitation | an inevitable mode of bodily being in the world, an occupation of space; a mode of dwelling; a settling-in, an abiding-in.

Repetition | a doing-again of that which has already been done; an apparently identical event or action in a different temporal context; a recurrence, a reiteration, a retelling.

Residue | a remainder of something after something else has gone; a superfluity, a persistence, a lingering trace, a remnant.

Shadow | an insubstantial, indeterminate or fleeting thing; a perplexity, an indistinct condition; a thing that follows (body, idea, action); an observation, a secret, a scrap, a hint.

Transformation | a change in form, nature, thought, structure; an alteration, a modification; a reconstruction, a recasting, a reordering; an overhaul, a renewal.

Early Painted Work

This collection of paintings signified the beginning of my inquiry into intangible architecture. The works are characterised by an extended process of construction, in which a thick surface was gradually built up through many layers of painted grids and finally embedded with objects.

The repetitious nature of this construction process formed a unique cyclical choreography of masking, painting, and peeling. The recurring, attentive gestures of the production process created an invisible, immaterial architectural site – the crossing between body and space. A zone of disturbed air was created by the moving, productive body over and over again; a zone that then collapsed and disappeared each day as the body departed.

The repeated inhabitation of this site and its continued emergence and dissolution compelled a new process of surface augmentation as the paintings were completed. The repetitious, time-taking gestures of grid-making were followed with a new repetitious process of placing fine objects such as shirt pins and glass beads within the surface of the painting.

The resulting works were heavy and could be understood as solid sculptural works, but they were ultimately ambiguous in terms of surface legibility. They could be read as articles of an additive construction process, or, through their sheer weight and solidity, as a cast remnant of a larger surface.

These early works were not generally exhibited, with the exception of *Jaal*, which was shown in the Hawkesbury Regional Gallery in 2005.

01
Jaal | front view | 2004 | 70 x 70 x 3cm
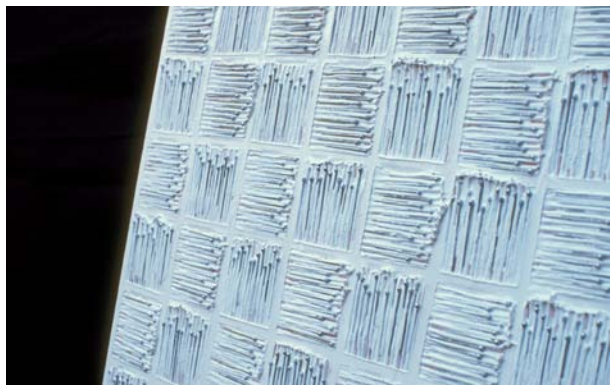acrylic, glass beads, shirt pins, mdf
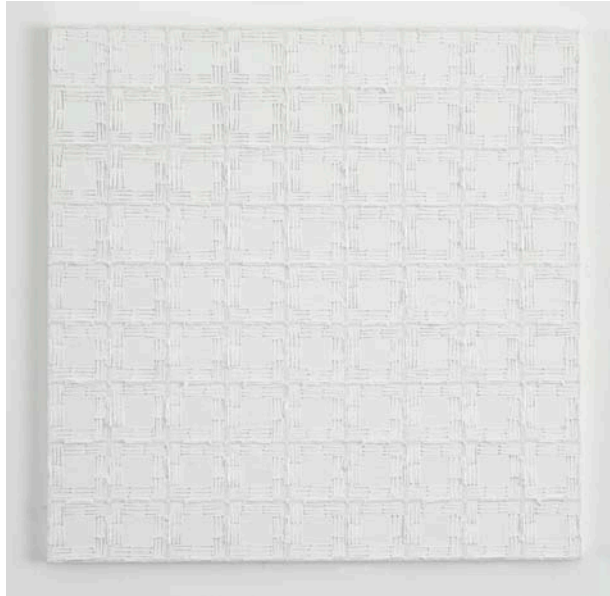
02
Jaal | side view |2004 | 70 x 70 x 3cm
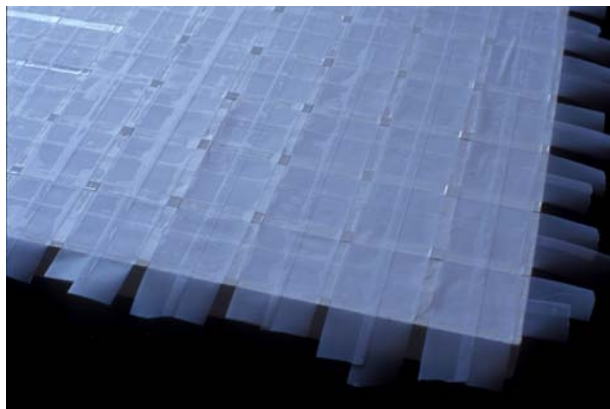acrylic, glass beads, shirt pins, mdf

03
Untitled | front view |2004 | 30 x 30 x 3cm
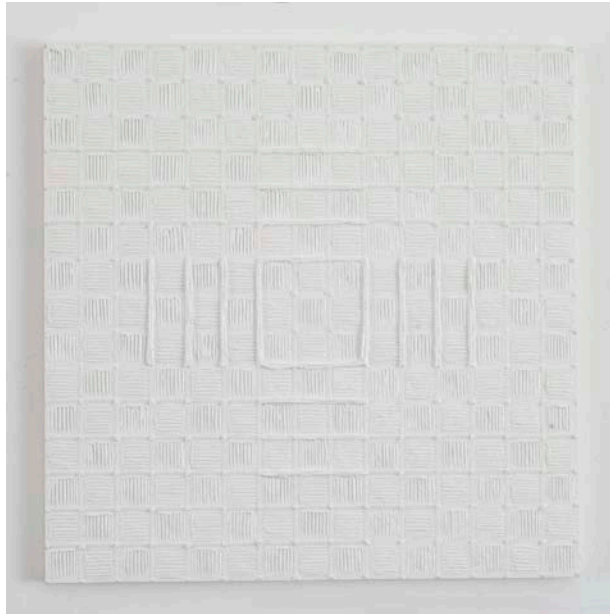acrylic, shirt pins, mdf

04
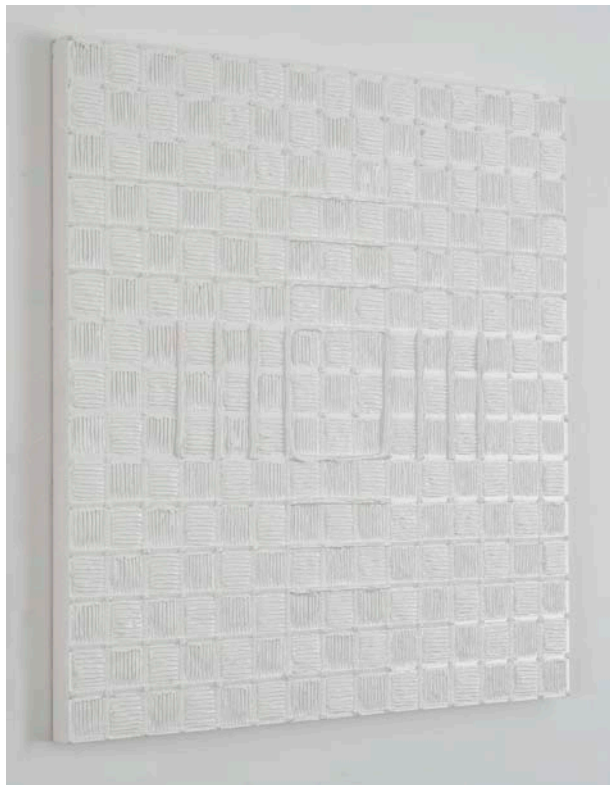*Untitled* | side view detail | 2004
acrylic, shirt pins, mdf

05
Belaau | process detail | 2004
tape, acrylic, mdf

06
Belaau | front view | 2004 | 50 x 50 x 3cm
acrylic, glass beads, mdf

07
Belaau | side view |2004 | 50 x 50 x 3cm
acrylic, glass beads, mdf
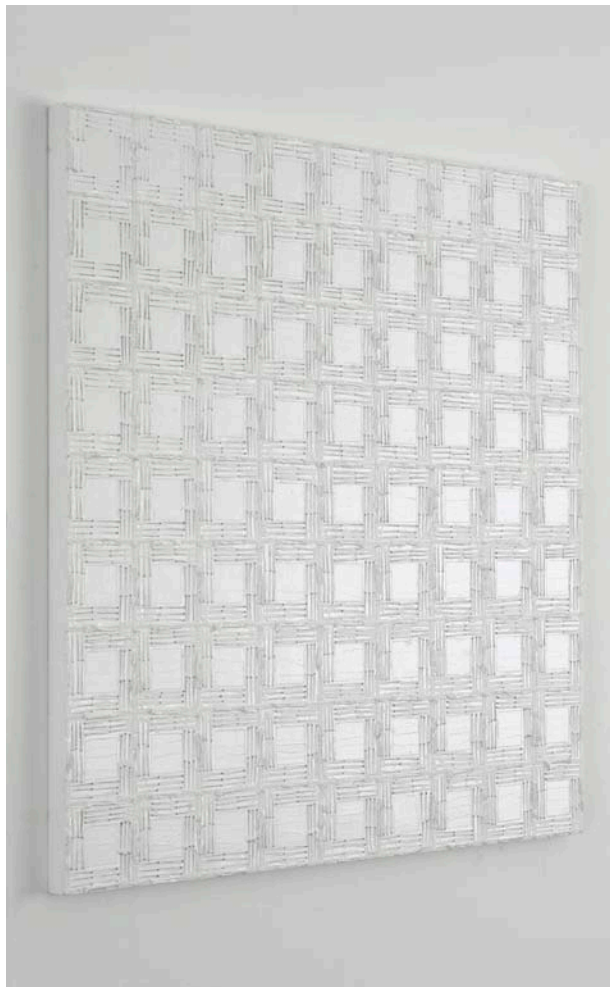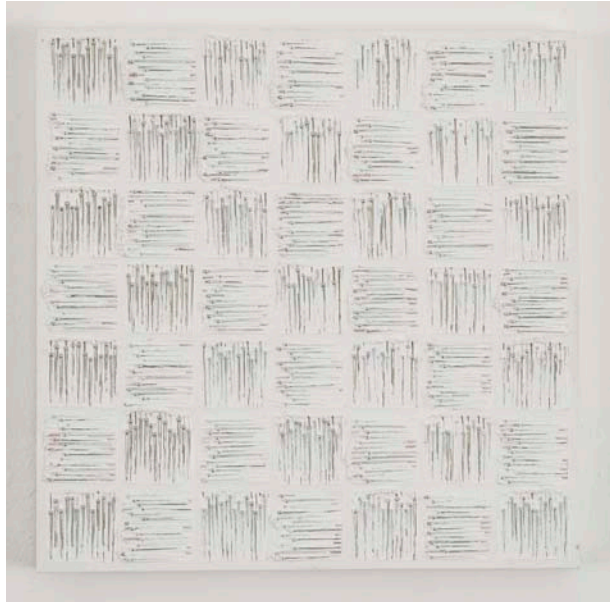
08
Belaau | detail | 2004
acrylic, glass beads, mdf

Painted and Stitched Works

This group of paintings continued the exploration of the repetitious construction process, but on the flexible surface of canvas. In these works I consciously explored my relationship to architecture, and as part of a process of wilfully drifting away from it in order to find a clearer focus, I began a process of disturbing the geometric order of the paintings.

This disturbance occurred by means of stitching the canvas with transparent monofilament. Dense fields of monofilament were stitched through the grids, gradually transforming the flat surface of the canvas and causing it to undulate, pulling here and there until it quietly announced itself as a three-dimensional field.

Looking at the work from a distance, the paintings read as white, minimal, abstract works. On approach, the undulations in the canvas gradually appeared, followed by the fields of stitching that then became apparent as the cause of the undulation.

The subtlety of these works pointed to the ephemeral nature of the inhabitation of space; irrespective of the time and labour invested in the work and the repeated intensity of the crossing between body and space, the works themselves tended toward invisibility.

In these works, I began to consider the material product of a construction process as the residue of the body's choreographic inhabitation of space.
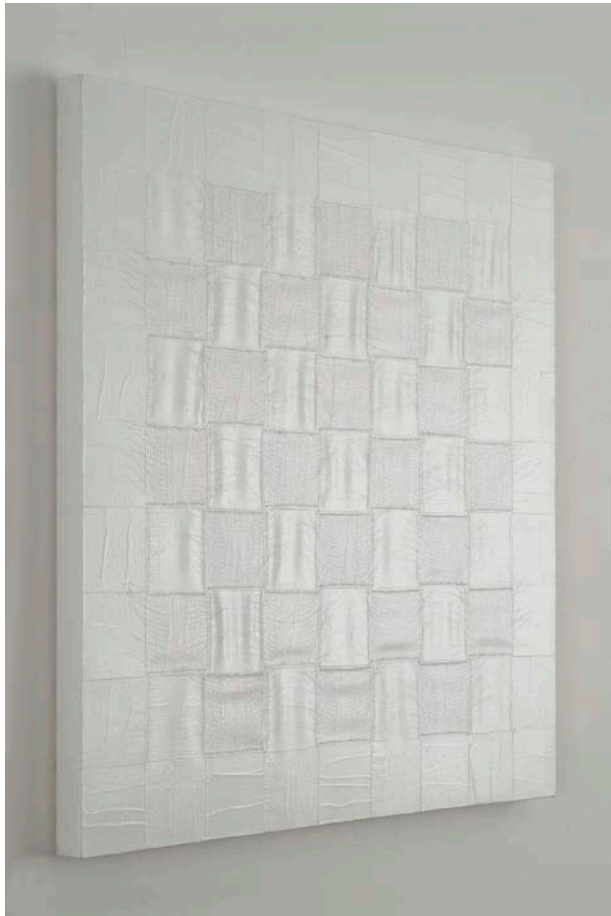
These works were exhibited at SCA in 2006.

09
Untitled | front view | 2005 | 70 x 70cm
acrylic, monofilament, canvas

10
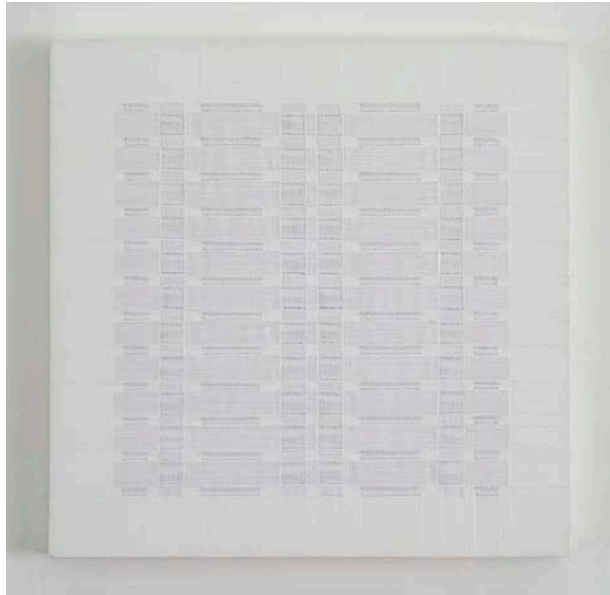*Untitled* | process detail | 2005
acrylic, monofilament, canvas

11
Untitled | 2005 | 70 x 70cm
acrylic, monofilament, canvas

12
Untitled | detail | 2005
acrylic, monofilament, canvas

13
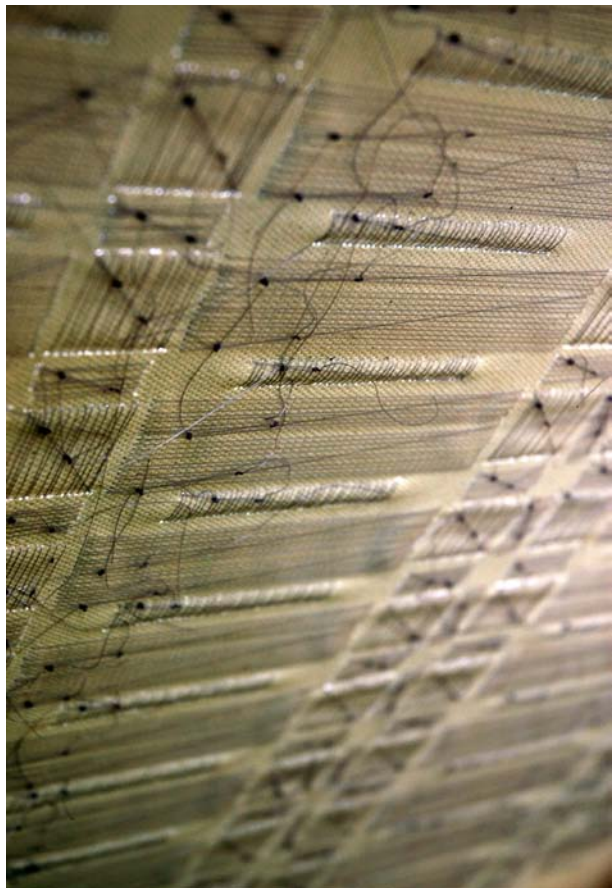*Untitled* | front view | 2005 | 50 x 50cm
acrylic, monofilament, canvas

14
Untitled | side view | 2005 | 50 x 50cm
acrylic, monofilament, canvas

15
Untitled | detail | 2005
acrylic, monofilament, canvas

16
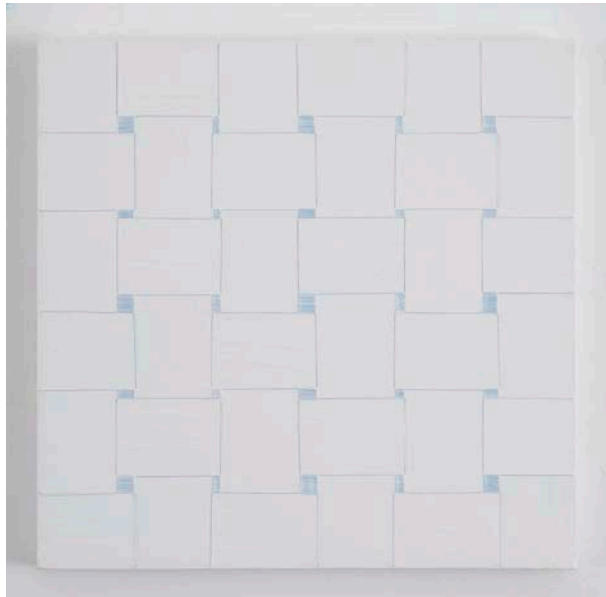*Untitled* | reverse side detail | 2005
acrylic, monofilament, canvas

17
Untitled | front view | 2006 | 70 x 70cm
acrylic, monofilament, canvas

18
Untitled | reverse side detail | 2006
acrylic, monofilament, canvas

19
Untitled | front view | 2006 | 30 x 30cm
acrylic, monofilament, canvas

20
Untitled | side view | 2006 | 30 x 30cm
acrylic, monofilament, canvas

Textile Works

This group of works was experimental in nature and produced specifically to investigate the transformation of two-dimensional surfaces into three-dimensional fields. These works aimed to investigate how the productive, inhabiting body could construct architectural space through a choreography of repetition.

The works utilised aspects of *shibori* as the technique of spatial transformation. The crossing of body and space was brought into focus by stitching many wooden chopsticks into cloth, which was then heat-set and dried. The chopsticks were then removed to leave permanent indentations of their prior presence in the cloth.

The new three-dimensional structure of the cloth implied an alternative approach to the construction of architectural space in their permanent registration of the body's movements and actions. Furthermore, it pointed to the sense that the inhabitation of the body can be remembered in space, even after the material traces of its presence were removed.

These works also marked the start of the practice of speculatively drawing the structure of air in architectural space as disturbed by the moving body.

These works were not exhibited, but were instead the catalyst for the ensuing works.

21
Untitled | process detail | 2005 | 2.5 x 1.1m
wooden chopsticks, linen, polyester

22
Untitled | process detail | 2005 | 2.5 x 1.1m
wooden chopsticks, polyester, heat-set linen

23
Untitled | process detail | 2005 | 2.5 x 1.1m
wooden chopsticks, polyester, heat-set linen

24
Untitled | detail | 2005 | 2.5 x 1.1m
absent wooden chopsticks, absent
polyester, heat-set linen

25
Untitled | interior view | 2005
approximately 3 x 2m | absent wooden
chopsticks, heat-set shaped cotton voile,
polyester

26
Untitled | interior view | 2005
approximately 3 x 2m | absent wooden
chopsticks, heat-set shaped cotton voile,
polyester

27
Untitled | process detail | 2005
approximately 3 x 2m | wooden
chopsticks, cotton voile, polyester

28
Untitled Cloth Experiment | detail | 2005
30 x 20cm | heat-set shaped cotton

29
Untitled | front view | 2005 | 40 x 40cm
heat-set shaped cotton gauze

30
Untitled Stitching Experiment | front view
2005 | 70 x 70cm | canvas, monofilament

31
Untitled Stitching Experiment | detail
2005 | canvas, monofilament

32
Small Wake Stitching (3rd Reflection)
front view | 2006 | 30 x 30cm | cotton
thread, dyed calico

33
Small Wake Stitching (3rd Reflection)
detail | 2006 | cotton thread, dyed calico

34
Small Wake Stitching (2nd Reflection)
detail | 2006 | cotton thread, dyed calico

35
Small Wake Stitching (1st Reflection)
detail | 2006 | cotton thread, dyed calico

Char Dham and *Fushimi Inari Walks*

These works were made in specific response to two major walks conducted as part of this research. The *Char Dham Walk* and *Fushimi Inari Walk* works were shown in the Ivan Dougherty Gallery, University of New South Wales, in 2007.
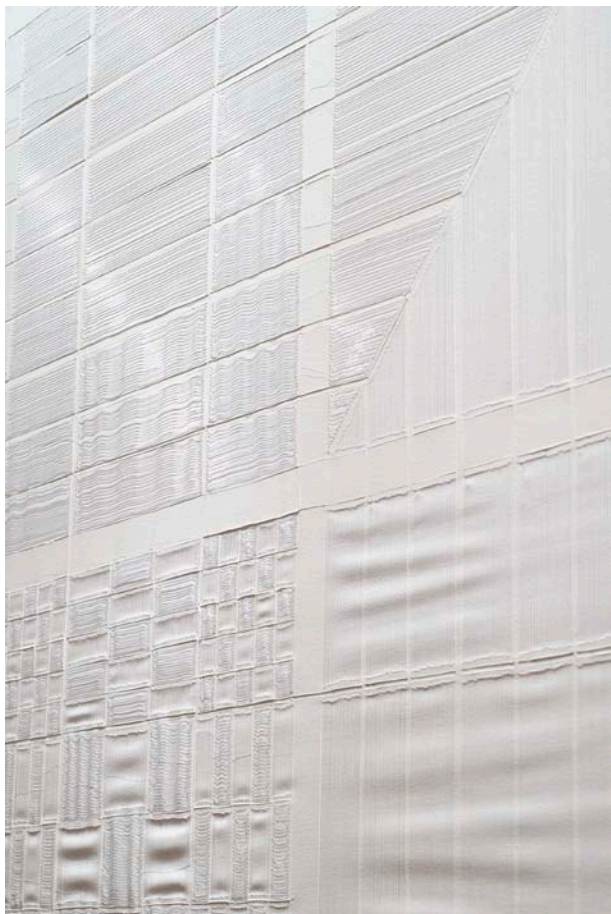
The paintings reflected geometric and directional aspects of the walks, and explored the correlations between the choreography of the intensely physical process of walking and of stitching. Both were treated as repetitious acts of construction that enabled the opening of a unique contemplative space.

These works marked a significant change in the scale of my work, and the solitary character of my practice shifted as a second person worked with me to stitch the fields of monofilament. Not only did this herald a more complex relationship between canvas and body, it also introduced a social dimension to the work that enriched the crossing of body and space.
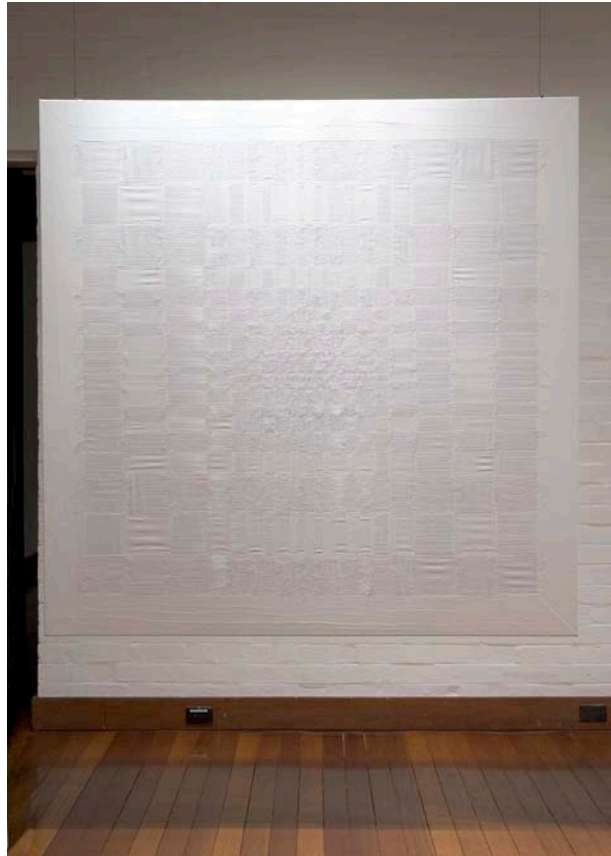
As the works were stitched with an inhabiting body working on either side of the upright canvas, the canvas became a genuinely spatial site as it was repeatedly penetrated from both sides. Consequently, these works were hung to be understood from both the 'front' and the 'back', and the stitching considered as the residue of an extended period of exchange between bodies.

36
Char Dham Walk (Garhwal) | front view at
Ivan Dougherty Gallery | 2007
1.7 x 1.7m | monofilament stitching and
acrylic paint on canvas

37
Char Dham Walk (Garhwal) | detail | 2007
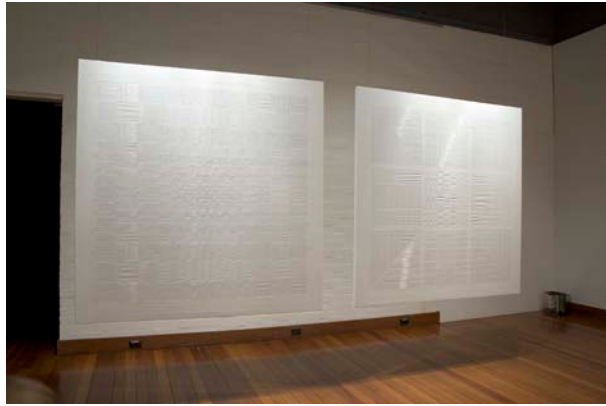monofilament stitching and acrylic
paint on canvas

38
Fushimi Inari Walk | front view at Ivan Dougherty Gallery | 2007| 1.7 x 1.7m monofilament stitching and acrylic paint on canvas

39
Fushimi Inari Walk | detail | 2007 monofilament stitching and acrylic paint on canvas

40
Char Dham Walk (Garhwal) (left) and
Fushimi Inari Walk (right) | front side view
at Ivan Dougherty Gallery | 2007 | 1.7 x
1.7m each | monofilament stitching and
acrylic paint on canvas

41
Char Dham Walk (Garhwal) | process
detail, stitching with Meeray Ghaly at SCA
studio | 2007 | monofilament stitching and
acrylic paint on canvas

42
Char Dham Walk (Garhwal) | reverse side
detail | 2007 | monofilament stitching and
acrylic paint on canvas

Interference

Interference was a series of large-scale mounted textile works exploring the impact of the moving body on air in architectural space. It was shown at the Tin Sheds Gallery, University of Sydney, in 2007 in conjunction with Mimi Tong's *Folding Cities: China II*.

This work was developed from an encounter with textile artist Machiko Agano in Kyoto in 2006. During the encounter, Agano installed a three-dimensional textile work in a gallery space. As she did so, the fluid movement of her hands was mapped to generate a series of choreographic diagrams. The diagrams reflected a complex series of interactions between body and air, and suggested a structure of air disturbed by the moving body.

The diagrams were presented as large scale embroideries, which as a spatial process continued previous investigations of repetitiously inhabiting a surface through its repeated penetration. The embroideries were mounted on freestanding timber frames that through their apparent instability aimed to disturb the architecture of the gallery and suggest the emergence of an alternative mode of architecture.

In its final form, the installation had a clear interior and exterior; an uncomfortable, illuminated space within, and a gentler, darker space outside. Shadows of bodies moving within the installation could be seen through the embroideries on its outer side. The scale of the work allowed the body to relate directly to the choreographic diagrams as full-scale architectural drawings, and to enrich them with a new crossing of body and space.

43
Interference | installation view at Tin Sheds
Gallery | 2007 | dimensions variable, each
panel approximately 2.5 x 3 x 0.2 m
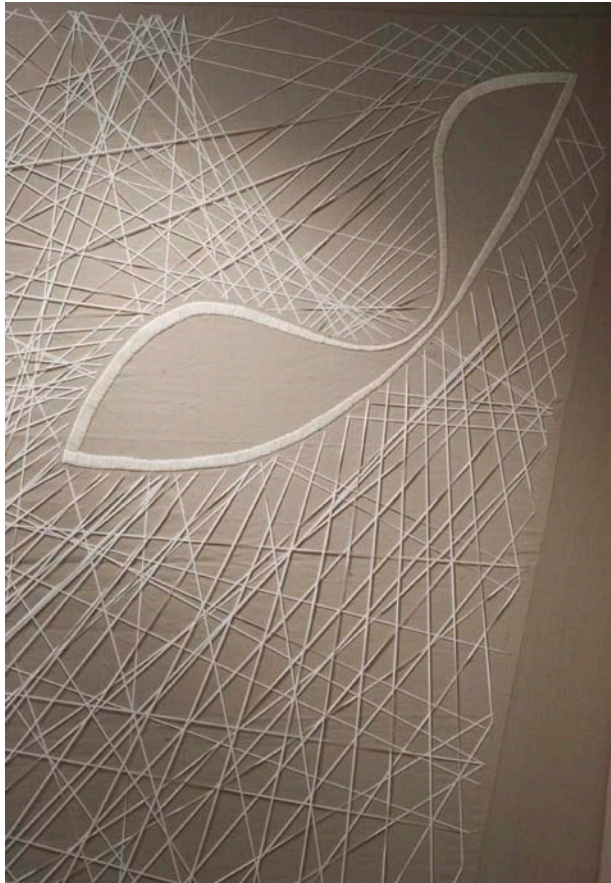plywood, Belgian linen, viscose ribbon,
linen thread

44
Interference | installation view at Tin Sheds
Gallery | 2007 | dimensions variable, each
panel approximately 2.5 x 3 x 0.2 m
plywood, Belgian linen, viscose ribbon,
linen thread

45
Interference | installation view at Tin Sheds
Gallery | 2007 | dimensions variable, each
panel approximately 2.5 x 3 x 0.2 m
plywood, Belgian linen, viscose ribbon,
linen thread
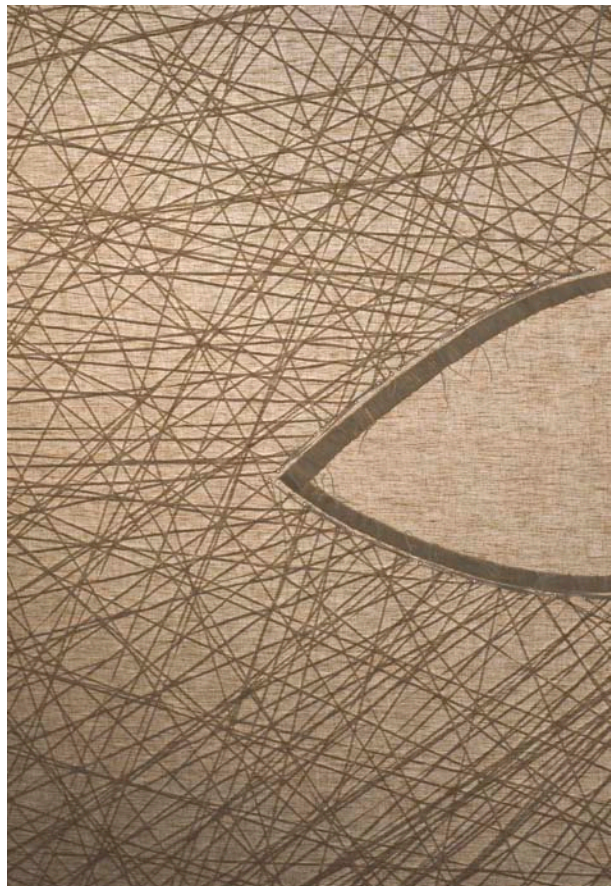

46
Interference | installation view at Tin Sheds
Gallery | 2007 | dimensions variable, each
panel approximately 2.5 x 3 x 0.2 m
plywood, Belgian linen, viscose ribbon,
linen thread

47
Interference | detail | 2007
plywood, Belgian linen, viscose ribbon,
linen thread

48
Interference | reverse-side detail | 2007
plywood, Belgian linen, viscose ribbon,
linen thread

Footfall

In 2007 I participated in the Banff Centre's *Walking and Art* residency. During the residency I walked over 300km through the mountainous Banff landscape with twenty other international artists. *Footfall* was a series of three maquettes made in response to these walks, and was shown in The Other Gallery with works by Sue Pedley and Barbara Lounder.

The *Footfall* works examined the tensions between the geometric conceptualisation of a walk as articulated on a map, and the actual experience of it in terms of the physical change in altitude. Each maquette was made of folded and stitched Mylar and related to walks made to Burstall Pass, the Burgess Shale and Sulphur Mountain.

The Mylar surface was repetitiously perforated with a map of each walk and placed directly opposite a constructed section of each walk. Corresponding sites on the plan and section were then connected through monofilament stitching to construct a three-dimensional web within the space of the maquette. This manner of relating modes of architectural drawing allowed the crossing of body and space as articulated on a map to take on a non-representational three-dimensional form.

In these works the repetitious act of stitching recalled the repetitious act of walking, and the monofilament web emerged as a shadow of both the walk and the act of stitching required to construct it. These works were the small scale precursor to *An Architecture of Thread and Gesture*.

49
Footfall | installation view at the Banff
Centre | 2007 | dimensions variable,
approximately 50 x 50 x 70cm each
Mylar, monofilament, cotton, timber

50
Footfall | installation view at the Banff
Centre | 2007 | dimensions variable,
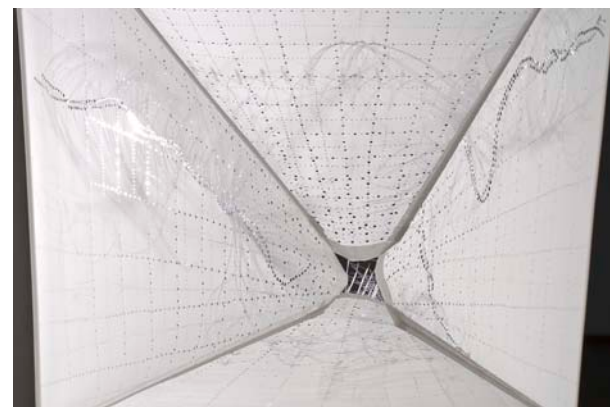approximately 50 x 50 x 70cm each
Mylar, monofilament, cotton, timber

51
Footfall | installation view at the Banff
Centre | 2007 | dimensions variable,
approximately 50 x 50 x 70cm each
Mylar, monofilament, cotton, timber

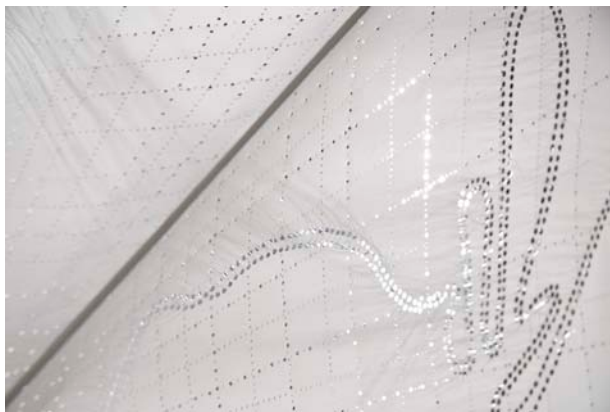

52
Footfall | detail | 2007 | approximately 50
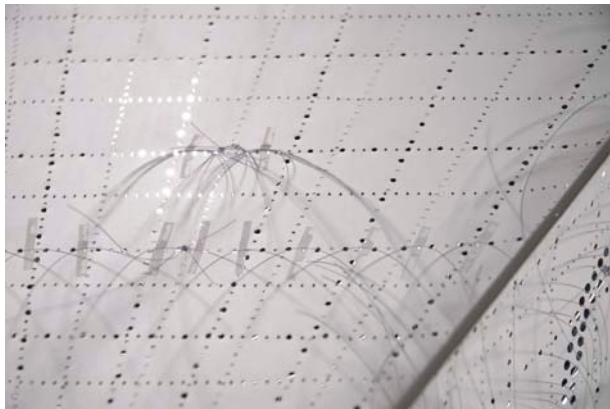x 50 x 70cm | Mylar, monofilament,
cotton, timber

53
Footfall | close detail | 2007
Mylar, monofilament, cotton, timber

54
Footfall | close detail | 2007
Mylar, monofilament, cotton, timber

55
Footfall | close detail | 2007
Mylar, monofilament, cotton, timber

56
Footfall | close detail | 2007
Mylar, monofilament, cotton, timber

An Architecture of Thread and Gesture

An Architecture of Thread and Gesture was a series
of three spatial works that considered the impact of
human movement on architectural space. It was shown
at the Japan Foundation Gallery in 2008.

 The work was drawn from the same series of diagrams
that informed the *Interference* work, and utilised the
Footfall approach of relating two types of architectural
drawing in space. In *An Architecture of Thread and
Gesture* the diagrams of Machiko Agano's movement
were revisited and reinterpreted in three dimensions to
offer a new kind of construction.

The works were made from Tyvek, and hung within
large carbon fibre frames to create a seamless
interior space. Threads of monofilament traced
the choreography of the body in space in varying
intensities, gradually shifting attention from the
material trace of the monofilament to the passage of
light through surface perforations (the absent trace).

The final absence of a material trace in this work
signified the major shift in thinking that took place in
the course of this research: that every material product
is ultimately a shadow of an inhabitation, and that the
construction of space, the stitching of webs, and the
perforation of surface all points to the absence of the
body once the material product has been made. We are
left only with shadows, and their inevitability in every
possible situation of artistic production involving the
moving body opens an exciting space characterised by
that which cannot be grasped in a tangible sense.

57
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable, left
space approximately 2.5 x 4 x 6m | Tyvek,
monofilament, acrylic, carbon fibre

58
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable
Tyvek, monofilament, acrylic, carbon fibre

59
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable,
space approximately 2.5 x 4 x 6m
Tyvek, monofilament, acrylic, carbon fibre

60
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable,
space approximately 2.5 x 4 x 6m
Tyvek, monofilament, acrylic, carbon fibre

61
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable,
space approximately 2.5 x 4 x 6m
Tyvek, monofilament, acrylic, carbon fibre

62
An Architecture of Thread and Gesture
installation view at the Japan Foundation
Gallery | 2008 | dimensions variable,
space approximately 98 x 141 x 205cm
Tyvek, monofilament, acrylic, carbon fibre

63
An Architecture of Thread and Gesture
detail | 2008 | Tyvek, monofilament,
acrylic, carbon fibre

64
An Architecture of Thread and Gesture
process detail, perforation work
2008 | Tyvek

Walk Photographs

These photographs were taken during the three principal walking experiences of this research – the *Char Dham Walk* in India in 2003, the *Fushimi Inari Walk* in Japan in 2006, and the *Banff Walks* in Canada in 2007.

65
Char Dham Walk | enroute to Gamukh
2003 | digital photograph

66
Char Dham Walk | enroute to Kedarnath
2003 | digital photograph

67
Char Dham Walk | enroute to Yamunotri
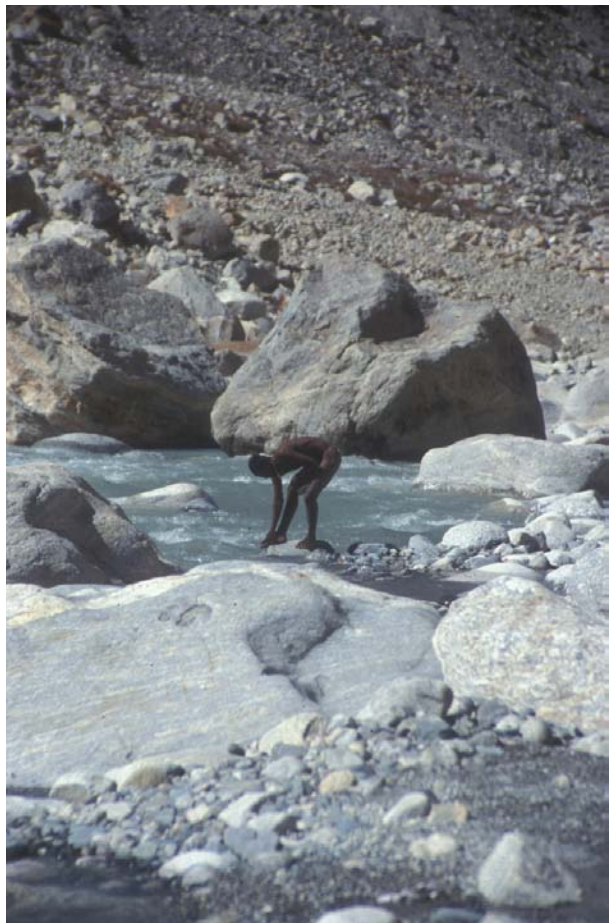2003 | digital photograph

68
Char Dham Walk | enroute to Gamukh
2003 | digital photograph

69
Char Dham Walk | enroute to Gamukh
2003 | digital photograph

70
Char Dham Walk | pilgrim at Gamukh
2003 | digital photograph

71
Fushimi Inari Walk | 2006 | digital photograph

72
Fushimi Inari Walk | 2006 | digital photograph

73
Banff Walk | Burstall Pass | 2007
digital photograph

74
Banff Walk | Burstall Pass | 2007
digital photograph

75
Banff Walk | Burstall Pass | 2007
digital photograph

76
Banff Walk | Sulphur Mountain off-trail,
with Hamish Fulton | 2007
digital photograph

77
Banff Walk | Burgess Shale | 2007
digital photograph

78
Banff Walk | Colombia Icefields | 2007
digital photograph