Dancing-Drawing Fields of Presence in *SeaUnSea*

Carol Brown and
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Could dancing a drawing be a way to create an ephemeral space? If drawing is a core tool of architectural imagination, the place where space is devised and designed, how can we find ways of thinking drawing as that which is formed through movement, that which follows the flow of presence, continually shifting and forming around the body? What can this drawing suggest? How can we embody the spaces it defines, the territories it creates, the densities it allows?

A performance of drawing might be one way to conSTRUCT an open encounter between audiences, performers and processes of computational design. Unconstrained by the rules of construction as building process, we can imagine drawing as a continuous process of dynamic becomings. In dancing a drawing within both digital and non-digital terrains we deterritorialise, refusing a fixed and stable ground and overcoming the limits of central perspective by manipulating the three-dimensional complexity of the body through multiple dimensions of space. Energy flows through improvisations of swarming, coiling, arcing and pouring streams of data and motional tracings. Traces of embodied and disembodied presence are left as a jagged geometry of lines that slowly fade over time. Sedimented as a mnemonic generated through a dual process of material and immaterial becomings arising from practices of choreography and architecture, this method of design calls for new ways of perceiving and framing performance.

Marina Collard in *SeaUnSea*. Photo by Mattias Ek.

Anna Williams in *SeaUnSea*.
Photo by Mattias Ek.

Practices of Space

Dance and architecture have much in common as both are concerned with practices of space. For a dancer, the act of choreography occurs through the unfolding of spaces by means of gesture and embodied movement, whereas for an architect, space is the medium through which form emerges and habitation is constructed. For both, the first space of experience is the space of the body. This essay is a writing out of the interstices of these two disciplines as they touch and inform each other in the process and production of *SeaUnSea*, an interactive dance installation which premiered at Siobhan Davies Studios as part of Dance Umbrella in London, October 2006. *SeaUnSea* is a collaboration between the authors, choreographer Carol Brown and architect Mette Ramsgard Thomsen, working with programmer Chiron Mottram.

As dance-architecture it explores the practice of live drawing. In the following we will outline how *SeaUnSea* engages the practices of drawing in architecture and dance, and how these processes are linked to spatial production. Seeking to engage the indeterminate spaces of that which is the process of forming, of assembling and dissolving, we will discuss how *SeaUnSea* bridges the different knowledge fields of dance, architecture and computer science.

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Drawing-dancing in *SeaUnSea*

SeaUnSea is a dance performance taking place on an interactive stage. A camera is mounted above the stage as an interface for a digital environment. As the dancers move across the stage, their movement becomes input for changes within a digital realm. *SeaUnSea* is an encounter between a physical and a digital realm, between physical and digital agency and presence and asks how we frame such experiences? How do they attain meaning and how can we construct these as part of our collective practices of space?

We conceive *SeaUnSea* as dance-architecture. Dance-architectures can be thought of as hybrid forms emerging at the interface between the disciplines of choreography and architecture through the creation of performance events. Rather than creating dances or constructing buildings as the traditionally privileged domains of our respective practices, we consider dance-architecture as the making and marking of a joint place where space is suggested through its enactment as a live condition, and where boundaries and densities follow the shifting contours of the moving body.

The co-evolution of our joint practice involves inscribing the page and the stage through drawing and dancing, exploring the thinking of a space constructed across temporal and enacted dimensions. Space is the medium for both choreography and architecture and the idea of drawing spaces is common to both. However, we experience the activity of drawing in different ways: For a dancer the act of choreography can be considered a form of movement-writing, as the dancer's body inscribes space through dancing; whereas for the architect, drawing is a place of invention through which the depth of space, its outlines and its place can be probed and discussed. In both architecture and dance, drawing is a primary medium aligned with the processes of invention while simultaneously retaining its role as a place of notation and communication. In both practices the act of drawing engages the two-dimensional plane. Although dancing is always already dealing with the palpably three-dimensional body, the stage, like the page, is conditioned by an inherent awareness of the planar. In *SeaUnSea* we take hold of this shared practice, seeking out manifold ways of reading and drawing space whilst devising new strategies for spatial inscription. By folding and enfolding the lived experiences of drawing and dancing as acts that occur
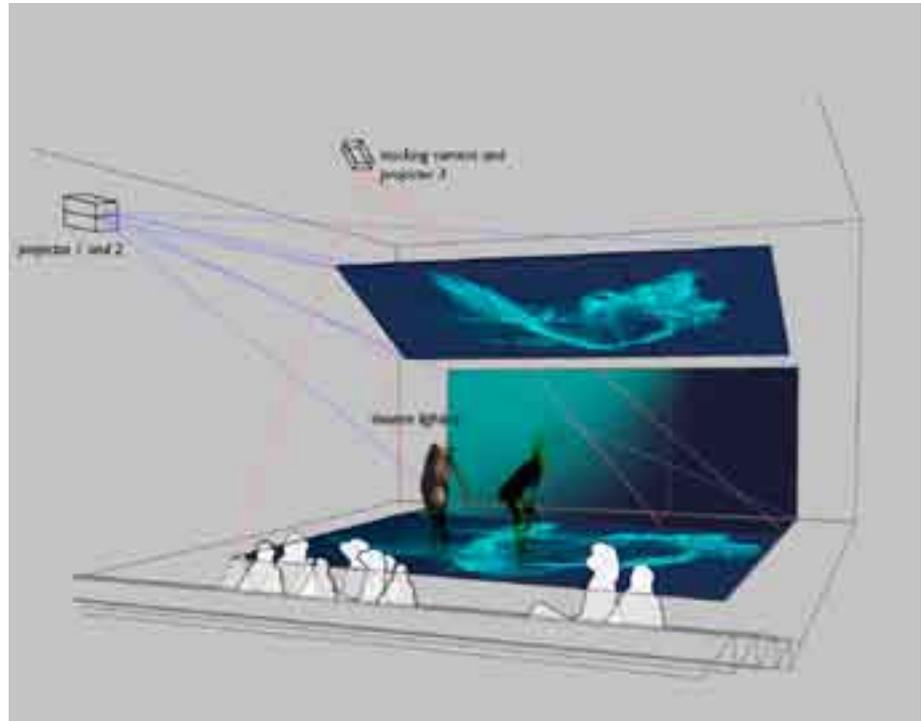
Performance design for *SeaUnSea*.

across time and come into being through the sensed immediacy of gravity and the thick dimensionalities of experienced time, we have created a hybrid place where the drawn and the danced take place together. Taking the analogue practices of drawing and dancing and shifting these into a digital terrain, we have found a joint space for interaction in which new geometries, ways of moving and (dis)embodied spaces are created, mutating the two-dimensional practice of drawing through new live dimensions and transforming the theatrical plane.

Liveness of the Drawing Plane

In *SeaUnSea* the drawing evolves as a joint place shared by performers and an ecology of digital agents. Under the camera interface, on the interactive stage, the dancers meet swarms of digital agents drawing live colour trails and crystalline meshes that inscribe the picture plane. The agents can be understood as independent yet co-present small-scale programmes that navigate the flat site of the camera picture plane. The white territory of the dance floor is interrupted by the black contours of the dancers wearing dark costumes. As the agents see this two-dimensional plane and learn to explore, to curiously follow or fluidly avoid their digital shadow, their movement traces create live drawings that are re-projected back into the performance space surrounding the dancers as projections on the floor, wall or a hanging canopy. The dancers are immersed in a fluid space continually acting and reacting to their movement, changing and coming-into-being as they meet and traverse the stage space.

In the digital realm the agents are visualised across time. Their movements across the camera picture plane become the source of fluid particle fields through which crystalline structures take shape. The particles act like plankton evading the body and flowing through a dense digital space. Like traces that follow the agents' movement, the particles form pools and eddies in their wake. In this point space, they create fields of presence that form and de-form with the agents' shifts in behaviour. This immediate interaction is met by the larger time loops of a crystalline mesh structure evolving across the time of the performance. Like a frozen river, the mesh evolves slowly, building up edges and defining territories. The mesh is shaped by the collective behaviour of the agents, weaving a tight skin across the projection surface. The mesh draws a temporal image of the agents' interactions with the environment as well as with each other. Just as water can change imperceptibly in temperature or, at one point, change state and become ice, these changes can be swift and fleeting or protracted and enduring.

The vivid colours, shifting in density and saturation, draw in references to natural and artificial seas. Taking their point of departure from the muted blues, yellows and greens, the space is intensified, becoming alert, as the performance enters the synthetic colourscapes of opal turquoises, harsh pinks and rich golds.

These colours help define spatial tension, shaping its narrative relationship to the dancer and creating a sense of punctuation and flow in the performance.

The drawn is also sketched into a sound space. As the agents move, their clustering and dispersal results in changes in the soundscape of the environment. Developed in collaboration with composer Alistair MacDonald, the sound is thickened and pulled as the agents move across the space following the dancers' movement. Through the use of six speakers surrounding the stage, sonic events pan and cluster as the dancers 'carry' the sounds to different zones. In this way, sound 'weights' the performing environment and heightens the pathways of the dancers. Intensities develop, eroding and dissolving as the dancers find their traces in space. Mixing the aural with the visual, the space becomes multidimensional, surrounding the dancers as a temporal colourscape enriched through sound.

Inscribing Self in Technology

Developing our own software rather than using off the shelf solutions allows us to explore how the body is conceived and held by the technology of the digital. As part of thinking the relationships between body, technology and space, we have created bespoke interfaces for the particular spaces we explore. These interfaces engage the body. The camera sees the body and allows this real-time image to become input for a digital world. This *embodied interface* allows a body-centred sense of presence and agency to engage and enact with the digital. A previous collaboration, *The Changing Room* (2004), involved the development of a camera-tracking interface that saw the body as a white figure against a black background. The camera was mounted upright, creating similarity between the "eye" of the interface and that of the audience. The data was then mapped in real time onto a digital morphology, creating direct correlations between the movement of the performers and the digital realm. In *SeaUnSea*, we also use a camera interface, but here the relationship is radically different. Firstly, the camera is mounted above the stage so that the dancers reflect themselves in their planometric image, and, secondly, rather than mapping the body on a virtual self, the camera image becomes a merged plane across which the dancers

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Matthew Smith, Marina Collard and Anna Williams in *SeaUnSea*. Photo by Mattias Ek.

meet a digital presence, a swarming flow that follows, flows and interjects with the performers. Rather than informing the digital directly through the reconfiguring of tracking data, the interactive stage becomes a joint place shared by performers and digital agents connected through the camera interface.

In *SeaUnSea* the camera also bestows the space with a strange sense of gravity. Mounted above the dance floor, the verticality of the camera looks down at the dancers. As the dancers relate to their digital shadow, they see themselves looking upwards, as if reflecting into a surface above. Like diving in the sea and looking towards the sun from beneath the water surface, gravity seems to surge upwards, drawing light and movement around oneself. It is this planar view that is inscribed in *SeaUnSea*. Informed by the depths of the experienced gravities, and moving below the lightness of air, the drawing finds its dimensions within the aqueous metaphors of the sea.

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Carol Brown in SeaUnSea. Photo: Anders Ingvartsen

The scenographic design of *SeaUnSea* accommodates this planar view and is conceived as a light box that is filled with movement and colour. Defined by three white surfaces – floor, wall and suspended canopy – the box is understood as a transformative site. Core to its development has been the development of an intuitive interface that allows for connections to be drawn between the different dimensions of the performance, transforming the box into a site of evolving interactions.

Defining drawing in SeaUnSea

SeaUnSea is understood as a living drawing, shaped by the movement of the dancers and agents alike. The drawing is indeterminate. Rather than being animate, pointing at its own completion, it is open ended, allowing for the improvised. The notion of indeterminacy in drawing differs from the traditions of architectural production. In architecture, the drawing finds its normative reading in its completion. We see the plan of the drawn building in respect to its entirety; we understand the correlations of rooms, corridors, and exteriors as a set of relationships that need their full description to make sense. As such, the temporal is removed from the drawn. The time of drawing, customarily understood as a tracing of the pencil over the paper in the making of a mark and as that which precedes the artifact of the drawn, is avoided. Choreographically, drawing as a form of notation becomes an artefact and aide-mémoire of the dance. Alternatively, the dance itself can be considered as a live drawing experiment as in Trisha Brown's work *It's a Draw/Live Feed* (2003) where the floor upon which she dances becomes a canvas marked by charcoal placed between her toes.[1] More commonly, dancers refer to "drawing the space" as a metaphor for the way in which their movement pathways create an invisible ink drawing in the space around their body. In *SeaUnSea* we seek to engage the multiplicitous, the unsure, the open and the indeterminate through processes that find their home within these joint practices of drawing in architecture and choreography. The drawn in *SeaUnSea* is presented as a live interaction, taking place across time, as a process of becoming, continually inscribing and erasing itself, creating its depths and finding its boundaries. This process of becoming is met by the dancers who perform open movement scores; improvisational states that retain an openness towards the drawn and allow the visual landscapes to flow in response to their movement; and, conversely, their movement to be affected and changed by its tracings.

In their computational reality, the agents engage this indeterminate space through their own programmatic liveness. Defined through low-level rules that form their capacity to act and react, they are described through their relational interactions with each other and with their environment. As such they become

a new way of drawing. Rather than tracing an outline, or defining a dimension, they draw in respect to a sense of agency. It is this agency, its shifts in agility and intention, that creates depths, densities and boundaries within the space of *SeaUnSea*. And it is this agency that is met by the corresponding motilities and movement languages of the choreography. Unlike previous examples of dancing as drawing, the motional scribing of the dancers in *SeaUnSea* catalyses trails of particle streams and the lacing of digital mesh, embedding movement memories as secretions within a digital scenography.

Drawing in *SeaUnSea* is at once gravitational and temporal; as a lived space it finds its dimensionalities outside the projective geometries of architecture and encoded notations of choreography. In this way, the page and stage become temporal dimensions that find their depth in the experience of a live ecology sinking and rising as movements occur. In our collaboration we have tried to conceptualise this space and to find ways to design and move within it. How could a space be shared between a digital and physical being? What might an understanding of live performance bring to architecture as a means through which to understand a space that flows with the event of time? How can my sense of embodiment yield to the remote touch of a digital being?

The Metaphor of the Sargasso Sea

Conceptually, *SeaUnSea* is shaped through the fluid imagery of water. As swelling strata it finds its dramaturgical place in three parallel images: the deep ecology of the sea, the crystalline structures of ice formations, and the petrified landscape of a hoar frost. Water penetrates and forms through these strata as particulate matter of different densities. The stratification of the work explores temporalised phase shifts between these different images informed by ecological imperatives. Processes of evaporation, crystallisation, vaporisation and decay take shape as evolving structures within the performance.

Through our collaboration we have invented a language of performance in which a shared image repertoire allows us to communicate a sense of motility, emotional resonance and agency. Images such as winter branches, clouds of pollen, entangling seaweeds and the acrid depths of the Aral Sea allow us to im-

Marina Collard in SeaUnSea.
Photo by Mattias Ek.

agine a place and a physical ecology for locating the interactive experience, en-
twining our experience of the event in a narrative at the threshold between the
actual and the virtual, the embodied and the disembodied. This ecology evolves
over time through processes of interaction, creating patterns, fluid forms and
unexpected moments relating to the organic, growing processes of emergence
and the co-dependence of ecosystems.

Relating this ecology to an actual seascape, the Sargasso Sea, allowed us to consider how particles of different complexity and density shape the actual environment. In taking inspiration from the Sargasso Sea, *SeaUnSea* is informed by the rhythms and lifeforms of an ever-changing seascape. Situated in the Atlantic, the Sargasso Sea is a sea within a sea; it grows, expands and contracts with the conditions of the environment. The image of the Sargasso thus becomes one of a space in flux, continually in a state of becoming, changing and reforming. In the opening sections of the work, "Green Tide" and "Sargassum," the image of rootless seaweed, drawn by thick gravities, becomes the point of departure for a hybrid form of sonic and visual particles that shape and dissolve as mnemonic traces. The dancers' weighted floor rolls, dives, suspensions hovering between floor and canopy and rotations of tessellating limbs follow and respond to the pull and push of the particles, at times ephemeral, at times crystallising into petrified formations. This hybrid visualisation is projected back into the performance space, generating a state of playful probing and enchantment.

Screen image from performance installation, SeaUnSea by Mette Ramsgard Thomsen.

Developing Movement Scores

Imagery from the Sargasso Sea informs behaviour on both sides of the interface and communicates emotional and spatial content for the dancers and design. This shared language has been important for our collaboration in that it allows a sense of freedom for our practices to unfold whilst retaining a common focus. The dramaturgy for *SeaUnSea* considered how the relationships between the plankton of the Sargasso Sea, the growth of sargassum on the surface of the sea and the atmospheric changes affecting cloud formation create an ecosystem of interdependence affecting the weather and air flows.

The time-based as well as spatial nature of these images communicated states of becoming realised through shifts from one condition to another. The growth of the Sargasso Sea as it bathes in lush sunlight or its slow decay as clouds form and water evaporates shape cycles of formation with beginnings and endings. These life-cycles become spaces in which the performer enters as a driving force, at times propelling the evolution of digital spheres, at times settling their collapse.

Dramaturgically, the performance evolves through three cycles reflecting these states: "Sea," "UnSea," and "Frost." Each of these cycles contains micro events based upon movement scores that we describe as "states." These states define differences in the visualisations and movements of the digital agents and dancers alike. In this way the dramaturgical structure follows the rising state changes of water. Beginning with "Sea," the performers follow the flow of a pool, creating eddies and counterflows as particles swarm around them. In "UnSea" this containing environment hardens, crystallising around the body and rising to the surface. Through the image of ice forming, the depth of the computed image is engaged and incorporated. Finally, in "Frost," water fills the air. To give an example of how these states work in practice in "Unfolding Tree," which is part of the "Frost" cycle, the image of a frozen landscape of thick mist accumulating at ground level and becoming frosted branches is embodied and encrypted. The dancer moves with extreme slowness, unfurling brittle movements that twist and rotate. Squatting and standing in an ever-changing pool of light, her movements incorporate the digital agents' motility, creating a tense dialogue with their bursts of growth and slow decay.

Fields of Presence

As the dancer responds to the different layers of time experienced in the work, reacting and triggering the faster motility of the particle streams which draw the space, whilst simultaneously creating the possibility for a sedimented trace of this interaction through building and dissolving the mesh drawings, a polyphonic matting emerges. For an audience, this communication of the space, with its multiple temporalities, creates an opportunity for a transdimensional experience. The multiple strata of the performance ecology encourage a restless energy and a mobile gaze. Freed from a locatable "ground," audiences follow the movement of the live dancer and "read" the trail of her pathway in the digital, switching the focal length of viewing between the dancer and screen dimension. Alternatively, the audience may choose to follow the motility of the digital and the points of confluence between dancer and virtual environment as these co-emerge; or they may focus upon the doubled or mirrored image of the dancer as flesh and blood presence and as digital shadow in the screenic dimension. Ideally, we would hope that audiences would journey effortlessly between these layers and levels customised as they can be to a continuity of presence between actual and virtual spaces. Encouraging audiences to switch between floor, canopy and wall, through focusing attention on moments of pooled interactivity, requires negotiating the gaps and spaces between. The moments of movement between floor and screen planes require a tracking gaze, negotiating between different senses of space. In the live performance the audience view the work from the periphery, a space outside the interactive field. However, for the installation event which follows this, small groups of audience are guided onto the stage to "play" as participants in the environment. This produces a more intimate encounter between audience and digital ecology. As participants in the field, they follow their own desire paths, making connections and intersecting with the environment on a kinaesthetic level. Guided by the performers whom they have previously watched engage the space with directed movement, the audience-participants are encouraged to inhabit the environment and discover their own sense of play within it. This more chaotic, less "scripted" part of the event, created a tension between our intentions for the work. Whilst we desired to see the ecology made meaningful through a poetic engagement with the interface, many audience members were more driven by a curiosity to know

Anna Williams in "Unfolding Tree," part of SeaUnSea. Photo by Mattias Ek.

how it worked and sought to probe the cause and effect aspect of the system. Despite our disappointment with this level of audience interaction, looking 'under the hood' and peering at the agent interface became a part of the performance design and a way of transforming the performer-audience encounter into a shared state of play, removing the illusory aspects of performance and dissolving the separation between performer and audience. In making transparent the

Matthew Smith, Marina Collard and Anna Williams in *SeaUnSea*. Photo by Mattias Ek.

process of construction involved in real-time computation, this type of framing foregrounds the liveness of the computation process as co-creator of the space with the live dancers' presence.

Performing the Space

For performer and participant, *SeaUnSea* comes-into-being through an exposure to a digital ecology of intelligent agents. Audience, performer and an intelligent digital dimension search for and create a cross-contaminated place through an evolving choreographic score. As an evolving interactive perform-

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ance event, the intention is to entangle human presence in a virtual seascape. This work is envisioned as an interactive performance ecology sited within a public building. Performers, audience and intelligent agents cross, converge and create a changing transient state through which emergent behaviours and patterns evolve. Through a camera-based interface, a projection membrane and a multidimensional image and soundscape, *SeaUnSea* entangles biological and digital life forms.

This joint space creates new challenges for performers as they move beyond familiar contexts and conventions of performance practice. The question of presence and how the dancer cultivates her awareness of both the material and immaterial elements of the performance is a major challenge as she simultaneously performs with the palpable and the fleshless.

Dancing-drawing through Other Spaces

In creating *SeaUnSea* we have developed an interface environment where digital agents and embodied performers gain a sense of a shared terrain through *dancing-drawing*; the intention being to create a meaningful inter-relation between a digital and a physical sense of agency evolving over time.

Through the creation of embodied interfaces for our projects, *Spawn* (2003), *The Changing Room* (2004) and *SeaUnSea* (2006), we are developing tools for performance spaces that integrate fragments of reality, virtuality and imagination. Dancers involved in these projects are invited to communicate with and through the virtual as well as the material presences on stage within a performance ecology which fuses traditional dance theatre scenography (lights, stage floor) with new technologies (computers, interactive software, camera tracking systems). Dancing on this augmented stage challenges our ideas about liveness and presence.

Our collaborations explore the inhabitation of digital environments and interfaced spaces. As a meeting of bodies and spaces through interactions arising out of the possibilities of digital media, alternative spatio-temporal dimensions and ways of imagining the body are explored. Through this collabo-

rative dialogue we have embraced digital technologies as tools for re-conceiving embodiment and for creating new ways of "telling the self."

SeaUnSea creates a palimpsest by overlaying a digital world on the participant's view of the real world so that both "realities" can be experienced simultaneously, allowing us to *draw* connections between the two. Rather than either/or, this both/and condition of transdimensional space acknowledges the impossibility of a "fleshless ontology" and the pleasures of presencing in the taking place of a performance that streams digital and physical terrains. Through dancing-drawing agency is inscribed in fluid movements across thresholds that are material and immaterial, physical and virtual, embodied and disembodied.

Notes

1 Trisha Brown's *It's a draw/live feed* premiered at The Fabric Workshop and Museum, Philadelphia, 15-16 March 2003.

Credits

Performance: *SeaUnSea*
Location: Premiered at Siobhan Davies Studios, Dance Umbrella London, UK
Dates: 12-15 October 2006
Concept: Mette Ramsgard Thomsen and Carol Brown
Choreography: Carol Brown in collaboration with the dancers
Architecture and visualisation: Mette Ramsgard Thomsen
Dancers: Marina Collard, Anna Williams, Matthew Smith
Lighting: Michael Mannion
Computing: Chiron Mottram and Teis Draiby
Sound: Alistair MacDonald