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## CO-CREATION IN SKETCHING SPACE

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*Co-creation in Sketching Space* reflects on a series of experimental sketch installations developed within the ongoing research project *Expanded Drawing*, which investigates the limits and possibilities of architectural drawing through multi-modal, spatio-temporal installations. The research aims to intensify the open characteristics of architectural drawing and redirect them toward domains beyond drawing itself, proposing open architectural sketching as a way of sensing complex phenomena, including open natural systems. It asks whether expanded architectural drawing can create new encounters with ungraspable phenomena, and what these encounters might reveal about our relation to them. The paper discusses the latest works in *Expanded Drawing*, focusing on how they intensify and problematise drawing's authorship. *Co-creation 01, 02 and 03* are "inhabitable sketches" in which multiple authors sketch live in space and remotely via Zoom, responding to dynamic feedback from diverse spatial subjects and from video records of their own acts of sketching. These installations amplify authorial input from multiple entities, engaging performative, gestural, temporal, material, and sensorial dimensions. The paper examines the role of other-than-human authors, the complex attention of human drawers, and the agency of both the spaces where drawing is produced and the spaces it seeks to capture, map, signify, predict, or control. Drawing on Posthuman ontologies and the work of practitioners such as Kirsty Badenoch and Nikolaus Gansterer, the paper outlines an expanded mode of architectural drawing that challenges long-standing conventions and opens drawing to auscultatory possibilities: drawing as a sensing device capable of producing new knowledge of space and of our relation to it.

**Keywords:** *Expanded Drawing, Architectural experimentation, Art Installation.*

### Co-creation in Sketching Space

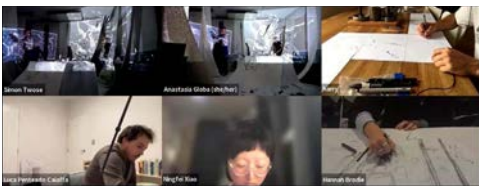
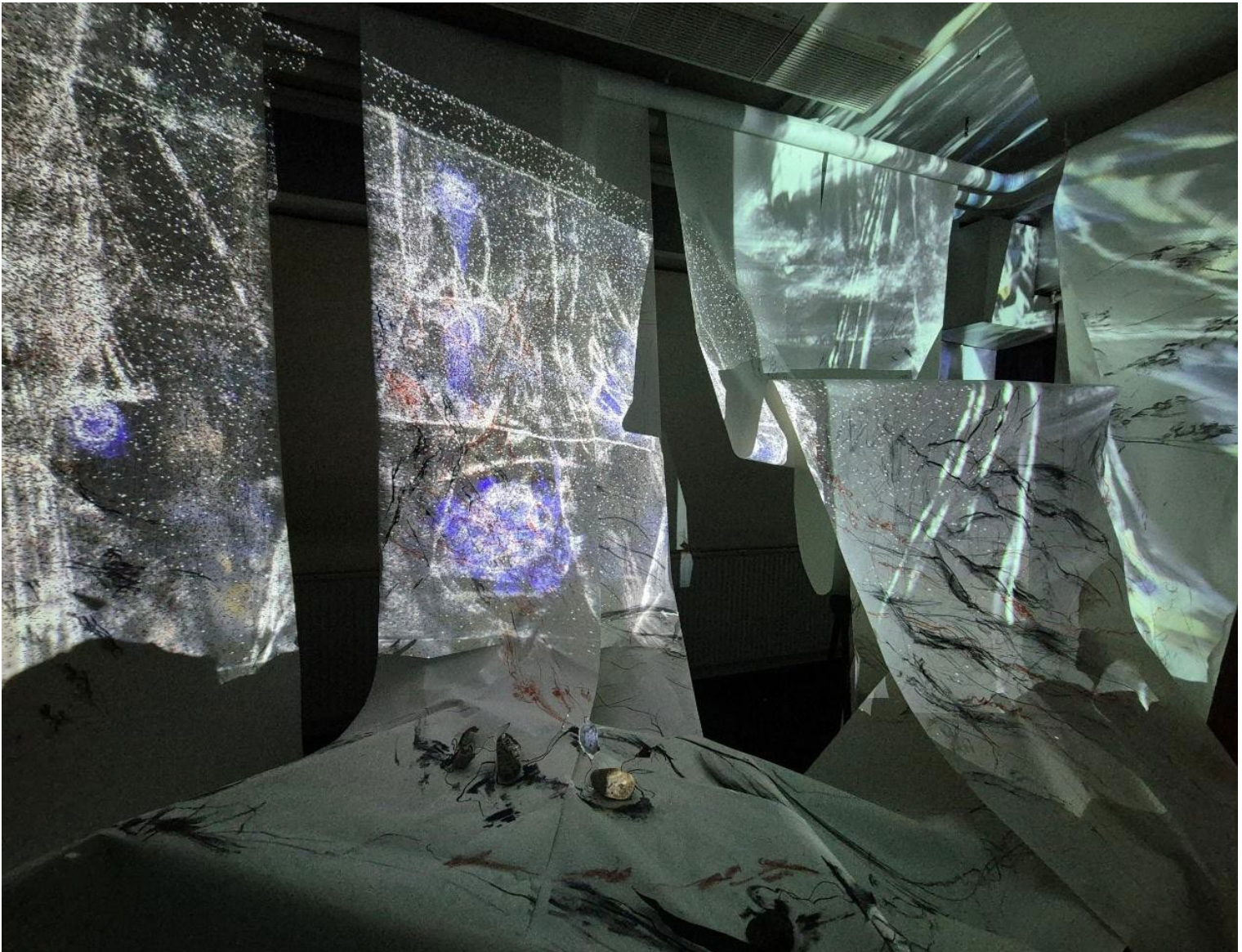
This paper discusses three experiments in drawing's co-creation, part of a series of explorations in expanding, testing, resisting, and critiquing, the disciplinary dimensions of architectural drawing. In these, a 'sketch room' is created using large sheets of paper, with many different 'lines' coming together in a live 3-dimensional sketch. These lines are drawn by different authors, in different drawing spaces, in different time zones around the world. Lines such as a journey through London, from home to work, recorded through a phone, or a walk around the ancient walls of Chaing Mai at dusk; sketches at the water's edge in Aotearoa, or sandy beaches in Sydney. These 'lines' are projected into the *Co-creation* drawing installations to make a three-dimensional, co-authored sketch.

The lines are responded to live by drawers in the installation, who follow the shifting video imagery through rapid sketching. The result is a merging of many drawing spaces, techniques, affective registers, and material feedback in multi-authored, inhabitable, three-dimensional sketches.

### Co-creation 01

The first sketch experiment, *Co-creation 01*, was a drawing installation at the University of Sydney. 70m of blank paper sheets were arranged in a studio space to receive projections and physically made marks, creating a three-dimensional drawing that could be inhabited by drawers (fig. 1). Marks from multiple authors were caused to interact within the spatial sketch: three authors drew live in the space and five drew via Zoom, with

<sup>1</sup> For an overview of *Expanded Drawing* see: Twose, Moloney, Globa, Harvey, *Drawing the Unfixed*, pp. 123 -136.



1 | Twose, *Co-creation 01*: three-dimensional drawing composed of 70M of paper, objects, and projections, able to be inhabited by drawers.

2 Canyon, *Venice Biennale*, Venice, Italy, 2018. See Canyon: Experiments in Drawing a Landscape, *Drawing*, pp. 123 -136.

3 Reef, Tin Sheds Gallery, Sydney, Australia, 2020. See Reef: *Drawing in the Expanded Field*, pp. 352-361.

4 Old House, Te Auaha Gallery, Wellington, Aotearoa, and Old House by the Sea Works + Words biennale 2026, Aarhus, Denmark. See *Old House by the Sea: Sketching Personal and Planetary Phenomena through Expanded Drawing*, <https://aarch.dk/wp-content/uploads/2026/05/Simon-Twose-and-Anastasia-Globa.pdf>

their work projected into the space, one in Wellington, one in Auckland, one in London, and one in Budapest (fig. 2). Paper sheets were added to the space as the sketch progressed, with the sketch space becoming an archive of multiple overlaid marks, evidencing gestural, material, and temporal intra-relations. The sketch space was recorded in multiple ways as an evolving, performative drawing, through conventional photography, 360°stills and video, GoPro video, Zoom video, and sound recordings. Online drawers recorded their sketching in ways of their choosing: some recorded the movement of their hands over paper using their phone, some recorded the results of marks through stills or scans of physical drawings (fig. 3).

The sketch was 'seeded' by video projections from earlier *Expanded Drawing*<sup>2</sup> projects that explored qualities of open

natural systems, such as the undersea landscape of the Kaikōura canyon<sup>2</sup> and reef<sup>3</sup>, and an old house immediately in front<sup>4</sup> through sculptural objects, video and virtual sketch environments. This material for drawers to respond to, to seed multiple intersections of dynamic subject matter, embodied actions, and material and spatial feedback. People drew live in the space, in response to the projected planetary<sup>5</sup> material, and their movements were followed by the online drawers, who sketched in response to what they were seeing happen in the sketch space, via two Zoom webcams. Sketches from online authors were projected into the installation and further responded to by drawers in the space, through gestural sketches in graphite or pastel (fig. 5). The *Co-creation 01* installation brought together several drawing spaces into one shared drawing, overlap-



ping them in the installation through projection. The 'space of the sketch', the space which facilitates the making of a drawing through hosting, say, a hand moving across a sheet of paper with a graphite marker, became, in this, a composite space, composed of many different drawing spaces around the globe. These were figured by different time zones, lighting conditions, sonic and spatial conditions. The space of the sketch, traditionally not considered as a strong influence in drawing, developed a curious agency. Co-authors in the sketch installation, those in the physical sketch space and those remote from it, in some senses authored marks that were in concert, and influenced by, a drawing space that was distributed.

### Co-creation 02

*Co-creation 02* was the second experiment in drawing's co-creation. This, in some ways, was simply the first sketch redrawn, as another iteration. A sketch space was again set up, with a large 10m paper sheet wrapping around a room and an array of video projectors, cameras and web cameras to link online drawers, as before (fig. 6). It was sited at Te Kura Waihangā, Te Herenga Waka, Wellington. Recording of the sketch as a performance and artefact was again through 360° imagery, still and time-lapse photography, video, and Zoom recordings. In this sketch, the subject matter was slightly different from the first. *Co-creation 02* was essentially a sketch of the first sketch, designed to extend peculi-

2 | Twose, Multiple human drawers participating in the sketch, live in the space and in different time zones and drawing spaces around the globe.

3 | Caiaffa, still from video recording movements of the hand in drawing, and H Brodie, image recording the result of marks made during performative drawing event.

4 | Twose, Globa, still from video of virtual sketch environment in Canyon installation. See Canyon: Experiments in Drawing a Landscape.

5 | Twose, sketches from online authors projected into the installation and responded to by drawers in the installation space, creating hybrid marks.

6 | Twose, Brodie, stills from video recording performances of drawing in the installation and a still from the live Zoom participant's drawing spaces.

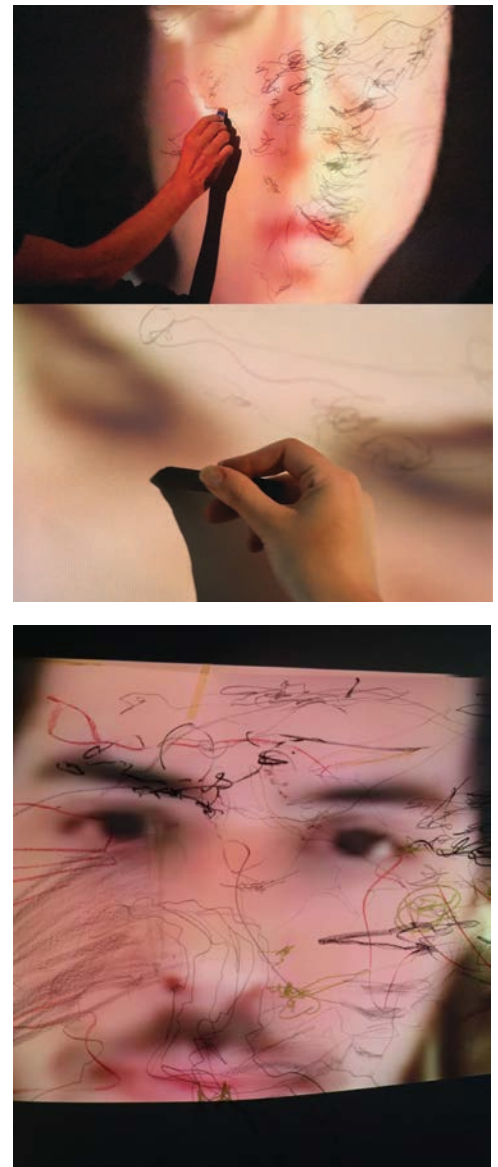
arities that had emerged. A significant peculiarity was the various 'attentions' of the drawers. *Co-creation 01* recorded the faces of people as they drew, through drawers' laptop web cameras, a particularity of Zoom recordings (fig. 7). Zoom being a meeting tool, the video imagery is geared towards relaying human affective registers, captured in part by facial expression, to effect person-to-person communication. In this case, the Zoom recordings captured the intense and intricate shifts in attention of someone in the process of drawing (fig. 8). Thoughtful attention to acts of sketching were evident in subtle shifts in eye movement, focus and expression, in the faces of the drawers – the progress of the sketch was shown as much through ideas flashing across drawers faces as the marks they were making on paper. The face recordings were akin to the drawings looking back at its creator, a reversal of the hegemonic top-down viewpoint and similarly top-down, human-centric authorship present in traditional drawing. This facet of the sketch environment that emerged in *Co-creation 01* was extended in the second iteration. Drawers responded to a series of moving images projected at various scales within the *Co-creation 02* installation. Authors sketched live in the space and remotely via web cameras. The projections consisted of the video records of authors' faces as they drew in experiment 01, and a video 'line' drawn through London by one of the drawers. The journey from the drawer's apartment to his work in central London was captured in video through his phone, marking the stop-start movement and shifting spatiality of walking, trains, and the curious though bored attentions of co-travellers (fig. 9). These two videos were projected into the space in different aspects, scales and at different speeds, and were overlapped and swapped position in the space as the sketch progressed. Both videos accentuated complex attentions in acts of drawing in different ways: the *Face* video captured fleeting eye movements, thoughts and expressions in sketching analogue marks on paper, and the *London Line* captured visual, material and temporal shifts in a videoed line, through the author focussing his attention on details

that struck his (architectural) eye (fig. 10). Both recorded intimate sifts in focus and attention in creating a line; the tiny blurs and gradations of a graphite line that hold significance to an author became a close attention to shoes moving over pavement, in the *London Line*, or a darting of eyes and nuances of expression in the *Face* video (fig. 11). The installation collected the impacts of these authorial attentions in a spatial sketch, with multiple drawers, drawing spaces, and spatial subject matter becoming enmeshed. The dynamic video projections in the space, of drawers' attentive faces and attentions in the *London line*, were responded to by five drawers in the installation, using charcoal, graphite and pastels. As the imagery moved and changed scale, drawers focussed their attentions to particularities of attention evident in the projected material. This was recorded by a roaming photographer, time lapse video, and Zoom, with drawers' mobile phones linked to Zoom recording hand movements at close range as they sketched and crossed them with spatial subject matter. One was duct taped to a drawer's chest to act as a 'body cam' (fig. 12). The result was a sketch created by multiple authors across multiple times and spaces, responding to myriad variations in authorial attention. This expanded intimate, affective dimensions within the sketch. The many personal decisions and fascinations in the making of marks, which have a complex connection to thinking and the imagining of spatiality, in architectural drawing, were prompted to become agential.

Architectural acuity in sketching, as an active way to discover spatial possibilities through multiple knowing attentions, was intensified, and became visible, within the spatialised sketch.

### Co-creation 03

*Co-creation 03* is a development of the previous two experiments, being an iteration of the mash-up of authors' materials' spaces' subject matters' creative agency. The third sketch is an experiment in multiple authorship that expands what a line might be, how it might be made, who makes it and where, and what each line might draw.



7 | Twose, Xiao, video records of drawer's faces while drawing, recorded by Zoom, projected in to the space and their fleeting attentions, in drawing, responded to by live drawers in the installation.

8 | Xiao, video still of the intricate attentions of a drawer while sketching (Luca Caiaffa) and responses from other drawers through rapid mark making.

“ Reading drawings becomes a project of decoding disciplinary, linguistic signs corresponding to complex spatial and material attributes of space.



9 | Twose, Cooper, Knapton, drawer in the installation responding to the London Line video work, with bored and perplexed passengers on a tube journey briefly entering the drawing.

10 | Twose, Cooper, still of video record of the detailed attention to walking through London, being responded to through rapid marks in the installation.

<sup>5</sup> I use the term planetary to indicate large scale natural phenomena and their associated pathos, such as the seismic latency of the Kaikoura canyon. See S. Ballard, *Art and Nature in the Anthropocene: Planetary Aesthetics*.

<sup>6</sup> The power of pentimento, in the open sketch, to generate thinking is much commented upon, for instance in the initial work of Leonardo: «[...] Demonstrated by the welter of pentimenti that made up his preliminary sketches [...] Leonar-

Ten drawers were given the task of sketching a line in a way of their choosing, in a time and place of their choice, through traditional means, video, or in any other way that suits their personal practice and subject matter close to them. The concept for the *Co-creation 03* installation is that these varied lines are combined to create a single sketch, in the same way that any sketch is composed of several individual lines. Authors created lines as diverse as: a two-day video drawing at sunset, circling the Chiang Mai old city wall, recording the drawer's interactions and various en-

counters (fig. 13), a line drawn on a Sydney beach engaging with the tide and swell through water-soluble ink on large paper sheets (fig. 14); stills and video capturing the staccato walk of a disabled drawer through urban Sydney, using a 360° camera attached to his walking stick (fig. 15); observations of changes over time of trees, wind and sunlight, recorded in pastel and ink (fig. 16); a redrawing of the earlier *London Line*, from apartment to workplace in central London, except this time recorded through video 3-D scanning. This line was 'reoccupied' through a video walk through of the virtual 3-D *London Line*, complete with partial, broken sketchy elements (fig. 17). The intention of this installation is to bring these lines together in a single co-authored spatial sketch. The various attentions to the line, as actions that inherently take place over time, in response to subject matter and within specific spatial conditions, come together in a single spatial environment, in a complex co-authored sketch. At this stage, the way these lines coalesce into a single sketch is being workshopped. The many different techniques of creating lines have temporal, gestural qualities that are similar in each, so each line could be displayed in parallel, or layered one on another in some way. This combinatory way of working is like breaking a soundscape into components, or in drawing and painting terms, to *pentimenti*. In *pentimenti*, lines might lay one atop the other, recording shifts and changes of mind, lines becoming smudged or previous gestures partially concealed<sup>5</sup>. Setting up the various lines to partially overlap in a space through projection is one technique, to bring co-authored marks to intra-act in a shared domain. The correspondences and dissonances between the lines can then be observed by another set of drawers. Other tests planned are for the lines to form different parts of a sketch of a particular subject matter, such as a sketch of a dynamic natural or even geopolitical situation. In this way the multiplicity of open possibility in making such a sketch might be directed at a similarly open and multiplicitous, complex situation. Correspondences might exist between the way the lines manifest and complexities

in the subject matter – there might be a way for the sketch to operate as a lens or auscultatory device on such phenomena. The co-creation installations successively expand or problematise aspects of the architectural sketch. *Co-creation 01* tested the impact of the drawing space, by multiplying it: a live drawing space and drawers, and several remote drawing spaces and drawers interacted with one another within a spatial sketch. *Co-creation 02* intensified affective attentions in sketching. Various attentions evident in the *London Line* and in drawers' faces were projected into a sketch space and responded to by live drawers. The sketch became figured by multiple drawers' attentions in spatial dialogue with one another. *Co-creation 03* distributes the sketch's authorial agency, where each mark or line has a different drawer, place, time in which it is drawn, and subject matter, with all these components considered authors. *Co-creation 03* seeks to amplify open possibilities in the sketch through this dispersed authorship, with a plurality of influence figuring each line – human and non-human authorial agents "making together"<sup>7</sup> unexpected, irresolute, unfixed marks in an expanded open sketch. The three co-creation sketch installations are part of an ongoing project, *Expanded Drawing*. This is transdisciplinary research that seeks to discover ways of capturing intangible, aleatory presences, ones that evade representation, such as in open natural systems. To achieve this, fundamentals of architectural drawing, along with its limits and possibilities, are bent, stretched, smudged or erased. The *Co-creation* series focusses on components of architectural drawing's capacity to encounter such complexity, through multi-modal, spatial, inhabitable sketch installations. The work engages multiple authors, human and more-than-human, in multiple spaces, time zones, and real and digital materiality, to test drawing's capacity to be a mode of active thought, a way to direct an architectural acuity towards diverse domains through myriad entities co-creating knowledge. And in doing so, expanding drawing as a lens on open phenomenal systems, natural and human.

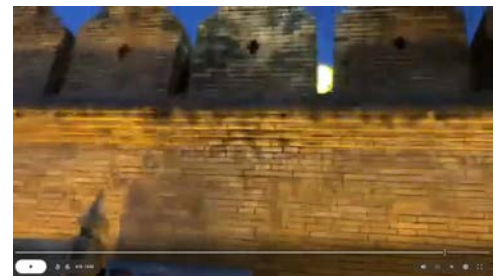
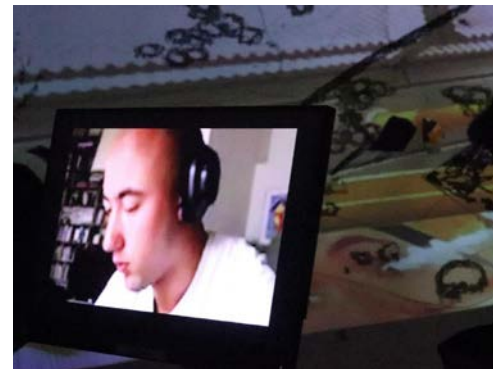
### Critical nuances and contemporary resonances

There are many critical aspects brought up by the experimental sketch installations, such as the impact of other-than human authors in the creation of a drawing, the complex attention of drawers in the performance of making marks, the agency of the spaces where drawing is created, in different parts of the planet simultaneously, and the agency of the space drawing aims to capture, map, signify, predict, or control. Architects and artists speculate on these nuances, which resonate with a wide range of contemporary thinking, spanning material ontologies, Posthuman discourse, affect studies, ethics of care, critiques of human exceptionalism – to decolonial activism and indigenous epistemologies. This paper recognises this vast sea of contemporary thinking applicable to drawing – and critically impacting drawing – and some of these are selectively surveyed below to support observations in the work.

### Impact of other-than human authors in the co-creation of drawing

Drawing is often talked about in terms of humans' embodied, performative actions in concert with material feedback, and the inflections on thinking this brings. Marco Frascari's 'sapient constructing'<sup>8</sup>, Juhani Palasma's work on embodied perception, with the 'thinking hand' crafting lines that «express hesitation and assurance, judgement and passion, boredom and excitement, affection and repulsion»<sup>9</sup>, or Flores and Prat's «ball of thread that unwinds to create loops and layers of a personal and irresistible world that draws you in»<sup>10</sup>. These are examples of commentators and practitioners thinking about drawer and other-than-drawer in creative relation. This is human to matter, or human to space, where each is a participant in the creation of a line, and drawing, and by implication, thought.

This frames drawing as a material performative phenomenon that augments or begins to exceed drawing's role as a carrier of signs, through affective inputs. In this situation, notations and lines, as well as encoded spatial data, are overlaid



11 | Xiao, affective, emotive and conceptual attentions in the act of drawing playing across the face of a drawer (H Coxhead-Whyte).

12 | Twose, Knapton, image of improvised 'body cam' to record acts of drawing and feed them back into the installation space through live Zoom.

13 | Xiao, stills from a two-day video drawing at sunset, circling the Chiang Mai old city wall, recording the author's various attentions.

do conceived of the sketch as a liminal stage, a stimulation of the mind to further investigations, not a preparation for a particular work. In his concept, drawing becomes a 'process which is constantly going on in the artist's mind,' and instead of fixing the flow of imagination, the uncertainty of line keeps it in flux». Faust, *Andrew Marvell's Liminal Lyrics: The Space Between*, p. 81.

<sup>7</sup> Making together' resonates with Donna Haraway's notion of symposium, or 'making with'. See D. Haraway, *Staying with the Trouble*.

<sup>8</sup> Frascari, *Lines as Architectural Thinking*, p. 203.

<sup>9</sup> Palasma, *The Thinking Hand*, p. 101.



14 | Clarke, a line drawn on a coastal edge engaging tide and swell through water-soluble ink on large paper sheets.

15 | Twose, still from video capturing the staccato walk of a disabled drawer through urban Sydney, using a 360° camera attached to his walking stick.

<sup>10</sup> Adrià, *Thought by Hand*, p. 9.

<sup>11</sup> Nancy, *The Pleasure in Drawing*, p. 1.

<sup>12</sup> Clark, *Smudges, Smears and Adventitious Marks*, p. 2.

<sup>13</sup> Elkins, *On Pictures and the Words that Fail Them*, p. 860.

<sup>14</sup> Artega, *Researching aesthetically the roots of aesthetics*, p. 259.

<sup>15</sup> Gansterer, *Drawing as Thinking in Action*.

<sup>16</sup> Spiller, *In Praise of the blur*.

<sup>17</sup> Kulper, Chard, *Fathoming the Unfathomable, Archival Ghosts + Paradoxical Shadows*, p. 63.

<sup>18</sup> Bennett, *Vibrant matter: A political ecology of things*.

<sup>19</sup> Ingold, *Making: Anthropology, archaeology, art and architecture*.

<sup>20</sup> Barad, *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*.

<sup>21</sup> Braidotti, *The posthuman*.

<sup>22</sup> See Amanda Morehu Yates, who discusses Māori understandings of a "living-world-assemblage, where sky, sea, mountains, trees, people are part of a relational *whakapapa*". Yates, *Mauri-Ora: Architecture, Indigeneity, and Immanence Ethics*, pp. 262-275.

<sup>23</sup> In Samoan epistemology, *Vā* is the field through which relations are activated and maintained, such as kinship, genealogy, speech, hierarchy, ceremony, ethics, material practices, spatial orientation, and ceremony, described by Albert Refiti as a "co-openness", a space-event enacted through ritual, a "collective relational field". Refiti, *How the tā-vā theory of reality constructs a spatial exposition of Samoan architecture* p. 273.

by irresolute characteristics, smudges perhaps, that begin to speak of intangible presences.

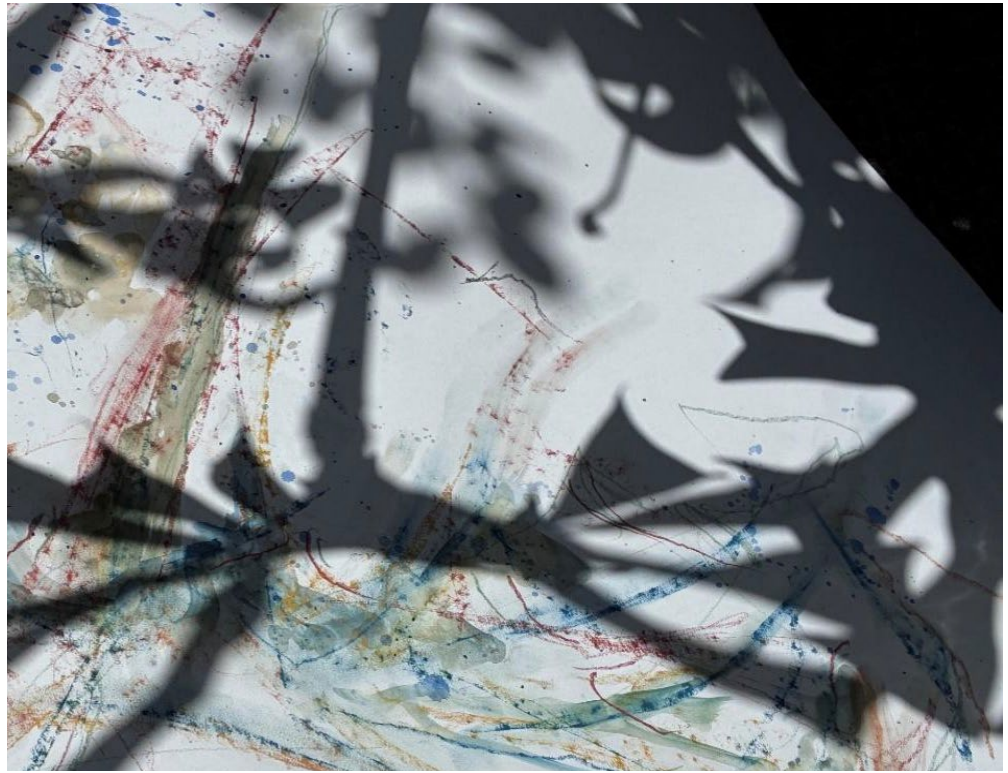
This is especially true of the sketch, which through the rapidity and informality of its making encourages results that step outside the control of a human author. They begin to have the capacity to blur and smudge, and impact resolute architectural intentions with an openness. As Jean Luc Nancy notes, sketches are open, through gesture, «in the sense of a beginning, departure, origin, despatch, impetus, or sketching out» and through an 'inherent capacity', something that «indicates the figure's essential incompleteness, a non-closure or non-totalizing of form»<sup>11</sup>. Material and gestural actions result in «shift and slip between line, blur and erasure»<sup>12</sup>, that somehow, productively, resists intentionality and certainty of reading, as «recalcitrant, 'meaningless' smears and blotches»<sup>13</sup>. These irresolute conditions in drawing, particularly in the open sketch, bind thought to discovery, through performative engagement with matter enabling thought to emerge through «barely perceptible micro-movements at the cusp of awareness [...] where the figure 'always remains at the edge of its own explicitness'»<sup>14</sup>. This follows much work in artistic practice of drawing as a tool for thought<sup>15</sup>, where ideas are triggered by the blurring of lines<sup>16</sup> characterised by «nuanced misalignments, approximate thoughts and imperfect moments [that] resist fixing normative figuration»<sup>17</sup>. This potential for 'productive irresolution' in the sketch is embraced by the *Co-creation* work. The variation to these ideas, however, is a deliberate shift away from human intention. Rather than other-than-human elements simply assisting intention, they are given full reign. The work encourages matter, space, and even multi-species entities and digital intelligences, to have strong authorial voices in the creation of an architectural sketch. Shifts away from human priorities is of course a contemporary philosophical concern, with much ink spilled on materialist agency, such as the work of Jane Bennet on vibrant matter<sup>18</sup>, Tim Ingold's processual materialism<sup>19</sup>, and Karan Barad's agential realism<sup>20</sup>.

These are part of current thinking on humans' intricate relation with stuff that is not us, how we are co-constituted with active matter. This of course leads into Posthuman thinking, of Rosa Braidotti for instance, where human exceptionalism is destabilised, through «[...] compounded impacts of globalization and of technology-driven forms of mediation, [which] strikes the human at his/her heart and shifts the parameters that used to define *Anthropos*»<sup>21</sup>. These lines of thinking allude to how authorial agency is not equated solely with intentionality but with matter as an active participant, and is inherently politically charged. Following this complicated intellectual context, drawing becomes a relational field marked by shared capacities to affect and be affected, by many authorial agents, with possible wider ideational and political consequences. This co-constitution of us to other-than-us is no news to indigenous people, who have always regarded matter, land, sea, sky as sentient and as kin and ancestors, as in Te Ao Māori<sup>22</sup>, or similarly relational worlds, of people to physical and social contexts, in the Samoan concept of *Vā*<sup>23</sup>. These implicate human and other-than-human within relational fields of kinship, *whakapapa*, *kaitiakitanga*, and *utu*, with notions of care and reciprocity binding people and things in complex relation<sup>24</sup>. Under a materialist, post-humanist, and indigenous lens, architecture becomes a multi-entity assemblage rather than solely a human artefact, as does drawing. The *Co-creation* work draws from these ideas to experiment with how a sketch can be multi-agential, with many human and other-than-human participants active in creating knowledge.

### Complex attention of drawers in the performance of making marks

The work triggers thoughts of attention in drawing, of the drawer, while drawing a mark, but also the attention of a reader. As discussed in *Co-creation 02* there was a reversal of focus, from drawing surface to author, in the response to the Faces video. There was also varied attentions to lines in the video material, with a 'zooming in' on details of the video journey, as one would when drawing a line. The redrawing of these instances in the installation was a re-reading of the 'marks' (I would argue even a segment of the video line is a mark of some kind). In this way, attention to making marks overlapped with reading marks.

Architectural drawing is traditionally a coded representational mechanism, defining scalar, informational, legal dimensions of space, usually space yet to exist, or in the case of observational and cartographic drawings, defining contours of space already in existence. The marking of this information is a disciplinary activity, with strict rules as to the marks, notation, correspondence of information, drawing to drawing – and reading drawings is similarly, traditionally encoded. Reading drawings becomes a project of decoding disciplinary, linguistic signs corresponding to complex spatial and material attributes of space – space projected from drawing to (usually) a built entity, with drawing figured by «disengagement, obliqueness, abstraction, mediation and action at a distance»<sup>25</sup>. In the *Co-creation* installations, and in *Expanded Drawing* experiments generally, this traditional view of attention and reading of signs in drawing is destabilised. Attentions in reading and attentions in making drawing become bound together within the space of drawing itself, in a closed circuit: rather than Robin Evan's *reversed directionality*<sup>26</sup>, drawing's projective direction is looped back on itself. The installations become about multiple projections – subject matter projecting inwards, impacting the sketch from outside, the sketch projecting outwards, to worlds beyond the sketch – and also finer grain attentive relations. The spatiality of attention within drawing, between authors and mark – eye, face and paper – is accentuated.



The sketch becomes a swirling vortex of making and reading, with an internal architecture composed of multiple authors and attentions.

### Agency of drawing space and space of subject matter

The *Co-creation* work looks into the agency of drawing's subject matter, the space drawing aims to capture, map, signify, predict, or control. It is part of earlier work engaging with large scale natural environments through sketch installations, abstracting intangible presences or atmospheres of such things as Aotearoa's sublime seismic latency, through sketches of the Kaikoura undersea canyon and reef. The work looks to bind the abstract agency of unfixed, open natural systems into the sketch, with such presences becoming forceful in 'inhabitable' multi-modal sketch environments.

The recent *Co-creation* work follows this, with the spatial subject matter and the space of the sketch becoming conflated. In this case, the spatial subject matter is parsed out, and each line tackles a different spatial subject matter. The London Line, for instance, takes on the complex spatiality of the London urban environment. The spaces of drawing, the space in which drawings are made, is similarly distributed, with each line



16 | Caiaffa, observations of changes over time, of trees, wind and sunlight, recorded in pastel and ink.

17 | Cooper, video still from 3-D scanned journey from apartment to a London place of work, reoccupied virtually.

<sup>24</sup> See Rod Barnett's discussion of these concepts in: Barnett, *Utu in the Anthropocene*.

<sup>25</sup> Evans, *Translations from drawing to building and other essays*, p. 160.

<sup>26</sup> Ivi, p. 165.

<sup>27</sup> Maharaj, *Know-how and No-how, Stopgap Notes on 'Method' in Visual Art as Knowledge Production*, p. 4.

<sup>28</sup> Ballard, *Art and Nature in the Anthropocene: Planetary Aesthetics*, p. 21.

being drawn in a different spatial context. By bringing these various spaces of drawing and spaces being drawn together, the *Co-creation* installations prompt them to have a curious agency. There is also a conflation of time, within the spaces of drawing and spatial subject matter. The marks recorded from shadows of swaying trees, in the intense light of an Auckland morning, combines with footsteps of shoes over tiles in the London underground, or glitched records, through 360° video, of a disabled drawer's progress up a busy, steep Sydney street.

### Drawing as a unique sensing device

The goal for future work is to coopt the assuclutory possibilities of co-authored expanded architectural drawings. How might they act as some kind of sensing device, or lens, on complex relations of us to worlds other than us? The lens might not provide concrete answers, and in many ways the methodology behind the creative research does not seek resolution. It follows an ever evolving, open-ended trajectory, what Sarat Maharaj describes as «the all over smears, surges and spasm, the unpredictable swell and dip of no-how»<sup>27</sup>.

The work, by engaging with and accentuating the inherent unfixity of the irresolute sketch, alludes to similar conditions of unfixity in 'other' subject matter. The space of the sketch, which at the same time binds in complexities of diverse spatial and temporal subject matter, might tell us about their intra-relation in some way, through atmosphere perhaps. This is an idea of co-opting inhabitation, or the sensorial occupation of space as a tool for knowing, as a lens to understand intra-relations between us and worlds and worlds we engage with. Understandings gained through the co-created expanded sketch installations, however, may be not instrumental or measurable. Susan Ballard, in her discussion of Art in the Anthropocene talks about art as 'haunted' by implications of our negative impact on the environment<sup>28</sup>. This is echoed by environmental art such as Olafur Eliasson's "Your Mobile Expectations", where a reimagined automobile is displayed frozen in ice, haunting

visitors with climatic effects they inevitably participated in creating<sup>29</sup>. The *Co-creation* research joins much of this work by being a test of the architectural sketch as a lens or sensing device, an auscultatory stethoscope on more-than-human systems, and our relation to them.

### Resonances with contemporary architectural and artistic practice

The co-creation works resonates with thinking from architectural and artistic drawing practitioners. A few key ones are discussed below, that open to contemporary ideas about the agency of matter and subject matter, and gestural, performative acts of drawing in response.

Nikolaus Gansterer, with his focus on diagramming and drawing as a complex performative choreography explores a merging of subject-object boundaries, where, through the process of drawing, «material unveils itself, reveals its unseen side, un-actualised potential [prompting] conditions for unexpected forms of mutuality, arising of shared spontaneous action»<sup>30</sup>, a mode of discovery able to «transend 'conventional rational discourse', through *knowing-thinking-feeling*»<sup>31</sup>. The work of Kirsty Badenoch also resonates with the research. Her cartographic projects engage with natural systems, objects and materials, such as *The Garden Transcripts* where she drew Kyoto Zen gardens as a parallel to acts of care in maintaining the gardens. Badenoch draws the garden on large horizontal sheets of paper, 'tending' them through «physical transcriptions between body, ink, graphite and paper»<sup>32</sup>. This interest in capturing indefinable characteristics through material and bodily action, such as in distant spaces and times of Japanese gardens, is extended in her later work, which engages with natural systems, such as in her *Riparian Score: Lea Variations*, and *Falling, Fallen, Felled*, which directly engage with rivers and forests, drawing attention to their environmental degradation. These practitioners allude to ways in which drawing and architecture might not simply privilege completion and permanence, but engage with other, irresolute agencies – embodied performances, matter, open natural systems – engaging dynamics of

growth, decay, sudden transformation. *Expanded Drawing* is unapologetically transdisciplinary. It doesn't seek to appropriate art, as architecture has often done in the past, but is interested in the productive friction between the two. It engages with the power of art to problematise, to inflect architecture's traditional onus of solving problems, in order to critique disciplinary relations between the two. In the *Co-creation* and *Expanded Drawing* research art and architecture scratch and bump into one another, allowing architectural drawing to become a performance, and space, in its own right: a spatio-temporal, three dimensional and multi-sensorial condition, with marks made through gestures, space, subject matter, matter, media, people and time.

### A sketched conclusion

The paper covers some of the ongoing questions and creative trajectories radiating from the *Co-creation* series of experimental drawings. It is a 'toe in the water' of a sea of consequences to knowledge when disciplinary bounds of architectural drawing are expanded, or destabilised. In traversing some of these possible consequences to thinking about drawing, the work hopes to coalesce ideas of on an expanded mode of architectural drawing that is able to inflect traditional, long held conventions, and open architectural drawing to auscultatory possibility. Expanded drawing, as a phenomenon inherently co-created between human and more than human spatial and material gestures, might become a unique sensing device capable of prompting new knowledge of space and our relation to it.

<sup>29</sup> Kupiak, *Olafur Eliasson: Your mobile expectations; BMW H2R project*.

<sup>30</sup> Gansterer et al, *Drawing as Thinking in Action*, p. 276.

<sup>31</sup> *Ibid.*, pp. 9-10.

<sup>32</sup> Badenoch, *The Garden Transcripts*, p. 8.

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