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co-constructing body-environments

vol. 17, no. 02

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the journal of IDEA: the interior design +
interior architecture educators' association

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the journal of IDEA: the interior design + interior architecture educators' association

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co-constructing body-environments: provocation

Presenters at *Body of Knowledge: Art and Embodied Cognition Conference* (*BoK2019* hosted by Deakin University, Melbourne, June 2019) are invited to submit contributions to a special issue of idea journal "Co-Constructing Body-Environments" to be published in December 2020. The aim of the special issue is to extend the current discussions of art as a process of social cognition and to address the gap between descriptions of embodied cognition and the co-construction of lived experience.

We ask for papers, developed from the presentations delivered at the conference, that focus on interdisciplinary connections and on findings arising from intersections across research practices that involve art and theories of cognition. In particular, papers should emphasize how spatial art and design research approaches have enabled the articulation of a complex understanding of environments, spaces and experiences. This could involve the spatial distribution of cultural, organisational and conceptual structures and relationships, as well as the surrounding design features.

Contributions may address the questions raised at the conference and explore:

+ How do art and spatial practices increase the potential for knowledge transfer and celebrate diverse forms of embodied expertise?
+ How the examination of cultures of practice, Indigenous knowledges and cultural practices offer perspectives on inclusion, diversity, neurodiversity, disability and social justice issues?
+ How the art and spatial practices may contribute to research perspectives from contemporary cognitive neuroscience and the philosophy of mind?
+ The dynamic between an organism and its surroundings for example: How does art and design shift the way knowledge and thinking processes are acquired, extended and distributed?
+ How art and design practices demonstrate the ways different forms of acquiring and producing knowledge intersect?

These and other initial provocations for the conference can be found on the conference web-site: https://blogs.deakin.edu.au/bok2019/cfp/.

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in this issue

introduction: unknowingly, a threshold-crossing movement

Julieanna Preston
Executive Editor
idea journal

It is in this special issue that the editorial board holds true to our promise to expand the horizons and readership of *idea journal* while reaching out to associated and adjacent art, design and performance practices and drawing connections to seemingly distant disciplines. The articles in this issue have provenance in a 2019 conference event, Bodies of Knowledge (BOK), which was guided by a similar interdisciplinary ethos. With an emphasis on cultures of practice and communities of practitioners that offer perspectives on inclusion, diversity/neurodiversity and disability, this conference, and this subsequent journal issue, aim to increase knowledge transfer between diverse forms of embodied expertise, in particular, between neuroscience and enactive theories of cognition.

This brief description suggests that there are shared issues, subjects and activities that have the potential of generating new understanding in cross-, inter- and trans-disciplinary affiliations and collaborations. My experience in these modes of inquiry points to the importance of identifying what is shared and what is not amongst vocabulary, concepts, pedagogies and methods. Holding these confluences and diverges without resorting to strict definition, competition or judgement of right and wrong often affords greater understanding and empathy amongst individuals to shape a collective that is diverse in its outlooks, and hopefully, curious as to what it generates together because of that diversity.

cite as:
Preston, Julieanna. 'Introduction: Unknowingly, a threshold-crossing movement,' *idea journal* 17, no. 02 (2020): 08 – 12, https://doi.org/10.37113/ij.v17i02.412.

The breadth of the knowledge bases represented within this issue necessitated that the peer reviewer list expanded once again like the previous issue. It was in the process of identifying reviewers with appropriate expertise that the various synapses between scholarly and artistic practices became evident. It is these synapses that shape sturdy bridges between the journal's existing readership, which is predominantly academics and students in interior design, interior architecture, spatial design and architecture, and the wide range of independent scholars and practitioners, academics, and students attracted to BOK's thematic call for papers, performative lectures and exhibitions. At the risk of being reductive to the complexity and nuances in the research to follow, I suggest that the following terms and concerns are central to this issue, aptly inferred by its title, 'Co-Constructing Body-Environments': spatiality; subjectivity; phenomenology; processual and procedural practice; artistic research; critical reflection; body: experience. All of these are frequent to research and practice specific to interiors. In this issue, however, we find how these terms and concerns are situated and employed in other fields, in other ways and for other purposes.

This is healthy exercise. To stretch one's reach, literally and metaphorically is to travel the distance between the me and the you, to be willingly open to what might eventuate. Imagine shaking the hand of a stranger—a somatic experience known to register peaceful intent, respect, courage, warmth, pressure, humour, nervous energy, and so much more. This threshold-crossing movement is embodied and spatial; it draws on a multitude of small yet complex communication sparks well before verbal impulses ensue. This significant bodily gesture sets the tone for what might or could happen. Based on my understanding of the research presented in 'Co-Constructing Body-Environments,' I propose that this is a procedure in the Gins and Arakawa sense that integrates theory and practice as a hypothesis for 'questioning all possible ways to observe the body-environment in order to transform it.'[01] I call this as *unknowingly*—a process that takes the risk of not knowing, not being able to predict or predetermine, something akin to the spectrum of 'throwing caution to the wind' and 'sailing close to

the wind'. My use of the word 'unknowingly' embraces intuition where direct access to unconscious knowledge and pattern-recognition, unconscious cognition, inner sensing and insight have the ability to understand something without any need for conscious reasoning. Instinct. The word *unknowingly* also affords me to invoke the 'unknowing' element of this interaction—to not know, to not be aware of, to not have all the information (as if that was possible)— an acknowledgement of human humility. I borrow and adapt this facet of unknowingly from twentieth-century British writer Alan Watts:

> This I don't know, is the same thing as, I love. I let go. I don't try to force or control. It's the same thing as humility. If you think that you understand Brahman, you do not understand. And you have yet to be instructed further. If you know that you do not understand, then you truly understand.[02]

Unknowingly also allows me to reference 'un' as a tactic of learning that suspends the engrained additive model of learning. Though I could refer to many other scholarly sources to fuel this concept, here I am indebted to Canadian author Scott H. Young's pithy advice on how to un-learn:

> This is the view that what we think we know about the world is a veneer of sense-making atop a much deeper strangeness. The things we think we know, we often don't. The ideas, philosophies and truths that guide our lives may be convenient approximations, but often the more accurate picture is a lot stranger and more interesting.[03]

In his encouragement to unlearn—dive into strangeness, sacrifice certainty, boldly expose oneself to randomness, mental discomfort, instability, to radically rethink that place/ your place/ our place, suspend aversions to mystery—Young's examples from science remind us that:

Subatomic particles aren't billiard balls, but strange, complex-valued wavefunctions. Bodies aren't vital fluids and animating impulses, but trillions of cells, each more complex than any machine humans have invented. Minds aren't unified loci of consciousness, but the process of countless synapses firing in incredible patterns.[04]

Figure 01:
Meeting the horizon; A still image from Shore Variations, a 2018 film by Claudia Kappenberg that reimagines *Waning*, a 2016 live art performance by Julieanna Preston. https://vimeo.com/user11308386.

In like manner to the *BOK2019* conference which was staged as a temporally infused knowledge-transfer event across several days, venues, geographies and disciplines, I too, ingested the materials submitted for this issue in this spirit of unknowingly. The process was creative, critical, intuitive, generative and reflective—all those buzz words of contemporary research—yet charged with substantial respect and curiosity for whatever unfolded, even if it went against the grain of what I had learned previously. For artists, designers, architects, musicians, and performers reading this journal issue, especially academics and students, this territory of inquiry may feel familiar to the creative experience and the increasing demands (and desires) to account for how one knows what one knows in the institutional setting. 'Explain yourself,' as the review or assessment criteria often states. If you are faced having to annotate your creative practice or to critically reflect on aspects that are so embedded in your making that you are unaware of them, I encourage you to look amongst the pages of this journal issue for examples of how others have grappled with that task such that the process is a space of coming to unknow and know, unknowingly.

There are a few people I would like to acknowledge before you read further. First, huge gratitude to the generosity of the peer reviewers, for the time and creative energy of guest editors Jondi Keane, Rea Dennis and Meghan Kelly (who have made the process so enjoyable and professional), for the expertise of the journal's copy editor Christina Houen and Graphic Designer Jo Bailey, and to AADR for helping to expand the journal's horizons.

Okay, readers, shake hands, consider yourself introduced, welcome into the *idea journal* house, and let's share a very scrumptious meal.

acknowledgements

I am forever grateful for what life in Aotearoa/ New Zealand brings. With roots stretching across the oceans to North America, Sweden, Wales and Croatia, I make my home between Kāpiti Island and the Tararua Ranges, and in Te Whanganui-A-Tara/ Wellington. I acknowledge the privilege that comes with being educated, employed, female and Pākehā, and the prejudices and injustices that colonialism has and continues to weigh on this land and its indigenous people. I am committed to on-going learning and practicing of Kaupapa Māori.

notes

01 Jondi Keane, 'An Arakawa and Gins Experimental Teaching Space; A Feasibilty Study,' *INFLeXions* 6 (2012), accessed 29 October 2020, http://www.inflexions.org/n6_keane.html.

02 Alan Watts, *Creating Who You Are* (Video) (n.d.), accessed 29 October 2020, https://vimeo.com/76888920.

03 Scott H. Young, 'The Art of Unlearning' (2018), accessed 29 October 2020, https://www.scotthyoung.com/blog/2018/04/12/the-art-of-unlearning/.

04 Young, 'The Art of Unlearning.'

gentle house: co-designing with an autistic perception

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abstract

This article discusses the early phases of *Gentle House*, a spatial design research project that works with concepts of autistic perception and a collaborative design process to renovate the home of a family of four. The family includes a ten-year-old autistic child who is currently being educated via correspondence schooling. In working alongside the family and understanding the uniqueness and complexity of their needs, the goal is to create spaces that are stimulating and enjoyable for them to live in.

The autistic child's experience of the physical world is pathologised as sensory processing disorder. This is a condition where there are differences in the integration of sense modalities that can lead to moments of being overwhelmed by some stimulus and a more highly tuned receptivity to other stimuli, such as texture and smell. This design research rejects a pathological framework for characterising these experiences and uses co-design approaches with the aim of learning from his engagement with the world. In particular, his highly tuned awareness of phenomena that 'neurotypical' perception tends to tune out or overlook. The larger implication of this project and approach is a rethinking of our living and working environments towards sensorially richer and more inclusive ends.

The early phases of the project have involved a series of spatial, material, and sensory design prototypes, which are discussed in terms of their co-creation and the perceptual richness of space-time experiences. The design knowledge gleaned from these prototypes is briefly contextualised within existing frameworks for inclusive design, before outlining future trajectories for the research.

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keywords:
autism, architecture, co-design, creative practice research, spatial design

Figure 01:
Suburban site with backyard constructions. Image Credit: Imagery ©2019 Google, Map data ©2019 MapData Sciences Pty Ltd, PSMA.

setting the scene

This is a story about a fairly typical New Zealand suburban house. But, as you might notice in the backyard, it's slightly less than typical. As seen from Google Earth, a series of branches and other pieces of timber have been laid down in a network of connections. Made by one of the house's inhabitants, this temporary construction is the result of working with materials at a 1:1 scale within a specific context. It is a situated practice of material sketching in space that has strong overlaps with my own creative practice.[01] Discovering this work, which pre-dates my involvement in the project, reinforced the beliefs and approaches I had when I went into this project. From the outset, it has been a process of learning from, collaborating, and designing *with* the inhabitants of this house, rather than designing *for* them. These values surfaced again and again at the *Body of Knowledge Conference*. In her keynote address, Professor Annalu Waller, Chair of Human Communication Technologies at the University of Dundee, emphasised the importance of designers respecting the fact that the end-users of a project are the experts in their experience, and therefore crucial to be included throughout the processes of designing.[02] In these ways, my design approach can be characterised within current co-design paradigms. Co-design is a term with a range of interpretations, but I follow design practitioner-researchers Elizabeth Sanders and Pieter Jan Stappers in thinking of co-design as referring to 'the creativity of designers and people not trained in design working together in the design development process.'[03] By emphasising the involvement of end-users in preliminary phases of a project, co-design can lead to a richer understanding

of the users, their lived experiences and wider contexts. This understanding can then guide material and spatial considerations in the eventual design outcome. As I describe below, the design process extends a co-design approach into the co-creation and co-analysis of spatial prototypes and the language used to discuss our collaborative processes. A rich discussion results, where expertise is shared, and a nuanced understanding of the project's complexity and potential emerges.

The timber network construction was made by someone I'll call Simon. He is autistic and has just turned ten years old. Whenever possible, I use identity-first language that emphasises that these labels are an intrinsic part of identity ('I am autistic') rather than a burden or deficit that must be carried by the individual ('I have autism').[04] Similarly, I also advocate for abandoning the commonly used term Autism Spectrum Disorder, often shortened to ASD, and any other language that describes these ways of being in the world as a disorder. A small first step would be to use 'condition' in place of 'disorder', though this still implies autism conditions as a pathological burden. However in current medical practice his experience of the physical world is diagnosed and pathologised as sensory processing disorder.[05] Relative to myself and other 'neurotypicals,' he experiences a heightened sense and sensitivity to smells, sounds and textures.[06] Simon can be shy to begin with, but he has good verbal communication skills and once he is engaged in an activity he can become deeply immersed and very excited.

His parents have been compelled to withdraw him from two schools, so for most of his schooling he has been outside mainstream education. Simon hasn't been formally excluded from school, but Martha used the word 'compelled' following an article she shared with me by author Mike Stanton who writes about his experiences trying to find appropriate schooling for his son Matthew:

> I am struck by the increasing numbers of parents of children with Asperger Syndrome who feel compelled to home educate. I use the word "compelled" because I wonder how many parents actually feel they had a choice. It is one thing to become dissatisfied with a school system and decide that you can do a better job. It is another matter entirely if an LEA [Local Education Authority] is so unresponsive to your child's needs that school threatens his mental health.[07]

Currently Simon is studying via correspondence, with occasional support from occupational therapists and tutors. However, his parents provide most of the home-schooling resources themselves, as teaching materials need to be tailored to Simon's interests and capacity to manage visual noise on the page, for example. He can be strong-willed and likes to be in charge of what he is doing, so his parents describe their approach to his education as often happening by 'incident, accident and stealth'—they follow his interests and energy, so that learning happens on his terms, opportunistically.[08] In discussion at the *body* conference, Professor

of Architecture Pia Ednie-Brown observed that the parent's poetic phrasing is applicable to all architecture projects as well. The spaces we design and live in all educate through incident, accident and stealth. This understanding has become valuable as the design develops.

The ongoing design project that I am working on with the family is called *Gentle House*, for reasons that I will discuss shortly. Ostensibly, *Gentle House* is a spatial design project, a house renovation for a family of four—a mother who I'll call Martha, a father, Frank, son Simon, who we've already been introduced to above, and a seven-year-old daughter Dorothy.[09] This paper discusses the first stages of this renovation project, which have centred around getting to know the family, their living patterns and needs, through a series of design interventions and experiments.[10] We have co-constructed these, often following Simon's enthusiasms, and the resulting discussions have shaped a more detailed architectural brief for the next, more formal, design iterations.

As well as the large-scale temporary timber network construction, Simon also makes smaller scale constructions with Lego. These are intricate, detailed, and highly embellished, with playful narratives to match. An initial observation that I made was that there are hardly any instances of the same colour placed adjacently—a very different approach to how I played with Lego as a child, where every piece was sorted into rigid categories based on colour and size. Intrigued by this different approach, and as a fairly typical icebreaker question to a child, I asked Simon what his favourite colour was. He gleefully exclaimed that his favourite colour is 'multicolour'—an option that my brain wouldn't have ever considered, and a hint at his wonderful way of thinking categories differently.

Based on our initial interactions, on my next visit to the house I brought in a pile of foam blocks of different sizes and colours, with different colours also representing different densities of foam. I showed them to Martha and Simon, and demonstrated a

Figures 02 and 03:
Multicolour Lego constructions by Simon at age eight. Image credit: Chris Cottrell, October 2018.

few different ways they could be used, and left them in the living space. Martha and I started a conversation; while we were talking, Simon quickly reconfigured them to make a screening wall—a space where he could concentrate and focus on his Lego building in private—while controlling and maintaining his connection to the larger living spaces.

Figure 04:
Shortly after being introduced to the foam blocks, Simon took ownership of them and built a wall to screen his space from the rest of the occupants in the open-plan living room. Image credit: Chris Cottrell, October 2018.

autistic perception

> Autistics are said to be a puzzle. A whole does not emerge from the parts. But what is lost by always thinking of wholes? Isn't the world itself comprised of little pieces? Don't we always have the choice of focusing on the piece and not the puzzle? [...] The classroom is a place where anyone who calls him or herself a student is supposed to be. It is a place where one spends one's time doing work, listening, and interacting. Sadly, it is not set up for those of us with puzzle-piece vision.[11]
>
> [...] when I am around a group of people, their voices may turn into the sound of water, their movements may all sort of blend together, but in their movements I see patterns not only of individuals but of the people interacting within the group and the group's effect on them, and on each other. I see this particularly well when not trying to understand what they're saying to each other.[12]
>
> When I'm jumping, it's as if my feelings are going upwards to the sky. Really, my urge to be swallowed up by the sky is enough to make my heart quiver. When I'm jumping, I can feel my body parts really well, too—my bounding legs and my clapping hands—and that makes me feel so, so good.[13]
>
> When Mukhopadhyay sees the 'door' he does not immediately see a threshold for passage, as a neurotypical

person might. He sees qualities in a texture of integral experience. Color fields first, and from that interplay, shape asserts itself. Here I am! Then with shape comes size. This relay of emergence is now ready to be described as a door. Only now does it have position, only now does it afford passage.[14]

Collecting these quotes together begins to hint at the richness and diversity of how humans perceive and experience their surrounding environments, particularly for those who identify as autistic. Unlike other medical conditions that share a similar set of symptoms and can be generalised, each instance of autism is startlingly unique. As the novelist David Mitchell recounts: 'Autism's symptoms vary widely from person to person and change over time. There's an evergreen adage: "If you've met one person with autism, you've met one person with autism."'[15] As process philosophers Erin Manning and Brian Massumi describe in Manning's book *Always More Than One*, our typical modes of perception 'chunk' experience into objects and subjects, which are apprehended primarily in terms of their affordances and usefulness. Autistic modes of perception work differently. In her book, Manning develops the notion of a field perception that directly apprehends the 'complex relational patterning of space-times of experience, in their teeming with contingencies, and in all their uniqueness.'[16] The term neurodiversity recognises and emphasises that there is a huge breadth and diversity in the ways that we come into relation with the environment around us, and that this is an inclusive spectrum.[17] Even people who might be thought of (or consider themselves) 'neurotypical' are actually just a small part of a larger continuum of experience and engagement with the world. As Massumi describes:

> We all chunk. We are all categorizers and users. Life's conventional elements demand that of us. But we are all also transcendental-fielders. After all, a chunk is only a chunk against the contrasting background of the field as singular-generic space-time of experience. [...] We all chunk, and we all field, but to different degrees, in varying ways.[18]

The broader motivations behind the Gentle House project are to learn from people like Simon, to understand their spatial sensitivities and use this richer understanding to create better quality spaces that are inclusive and accommodating to a broader spectrum of people. Brian Massumi clearly articulates these values in his prelude to *Always More Than One*. Massumi is particularly eloquent here, and is worth quoting again in detail:

> What could neurotypicals, we on the spectrum who pass unpathologized, learn from those who field before or more than they chunk? Wouldn't our lives be enriched by upping the degree of fielding we consciously perceive? Can we learn to bring our experiential differences into creative play across the barriers and run with it?[19]

Figures 05, 06 and 07:
Attunement exercise from a SenseLab research workshop, July 2014. Collectively we held a balloon in space with the lightest possible pressure from a single finger each. It was impossible to maintain a perfect equilibrium and eventually the imbalance of forces would cause the balloon to rise up out of our reach. Image credit: Georgina Matherson, 2014.

One of the challenges for me as someone not-so-on-the-spectrum is to develop a better understanding of the different ways that people make sense of the world around us, while also acknowledging that it is impossible to ever be fully inside someone else's experience of the world. This has led me to an interest in other ways of sensing, and questions of how I can situate myself in another's sense of environment, and not just by adopting their point-of-view, with all that phrase's ocular-centric connotations. Instead, more somatic processes of attunement offer helpful ways of changing my habitual and automatic sensory processes, and of understanding how other people with differently calibrated sense modalities come into relation with their environments.

attunement

Autism wasn't on my mind when I was working on my PhD.[20] However, the research thoroughly explored notions of the 'perceptual field' and how what is (neurotypically) backgrounded and taken for granted in our spatial experience can be thrown off-balance. One significant outcome from this research was the development of a practice that I call 'architectural judo.' This practice proceeds by attuning to the forces, energies, and movements that constitute an environment, but are not privileged in neurotypical perception. Architectural judo then modulates and amplifies these forces, energies, and movements before discordantly feeding them back into that same environment such that the qualities of their encounter are disrupted

and reshaped.[21] Architectural judo's approach is also informed by taking the practice of judo literally. It is not a practice of aggression or the forceful imposition of will, throwing things around and 'beating' them. As conceived by the founder of judo Jigoro Kano, it is a practice of co-operation, training and mutual benefit.[22] Roughly translated, judo means 'gentle way' or 'way of gentleness.'[23] It is with this ethos of gentleness in mind that I enter into creative projects such as this one, outwardly expressed through the title, *Gentle House*.

Attunement is also practised through what philosopher and sociologist Henri Lefebvre calls 'rhythmanalysis.' This is an approach to non-verbal interaction that is both qualitative and analytical. Rhythmanalysis integrates an inwardly directed attention to bodily rhythms (beginning with heartbeat, breath, and other cyclical occurrences like hunger and wakefulness) outwards in order to understand the rhythms of the surrounding environment. For Lefebvre, rhythms occur 'everywhere where there is interaction between a place, a time and an expenditure of energy,' and the techniques of rhythmanalysis allows a practitioner to develop an attunement to these subtle movements of energy.[24]

Attunement allows for ways of feeling, moving, thinking, seeing, and sensing differently, to emerge, and opens up design practice to relational and collective processes where new discoveries can emerge. In collaborating with Simon and his family and embedding the creative practice research directly in the situation for which it is intended, the resulting design outcomes must be understood as more than the work of a single author. The various prototypes we built together are examples of the more diffuse idea of authorship suggested by terms such as co-design and co-creation, which acknowledges the inputs of various collaborators, material discoveries, and existing environmental affordances as crucial contributors to the outcomes.

Figures 08 and 09:
The first iteration of the "soft corner" made use of different densities and textures of foam and included a large sheet of multicoloured foam. Image credit: Chris Cottrell, October 2018.

prototyping with autistic perception

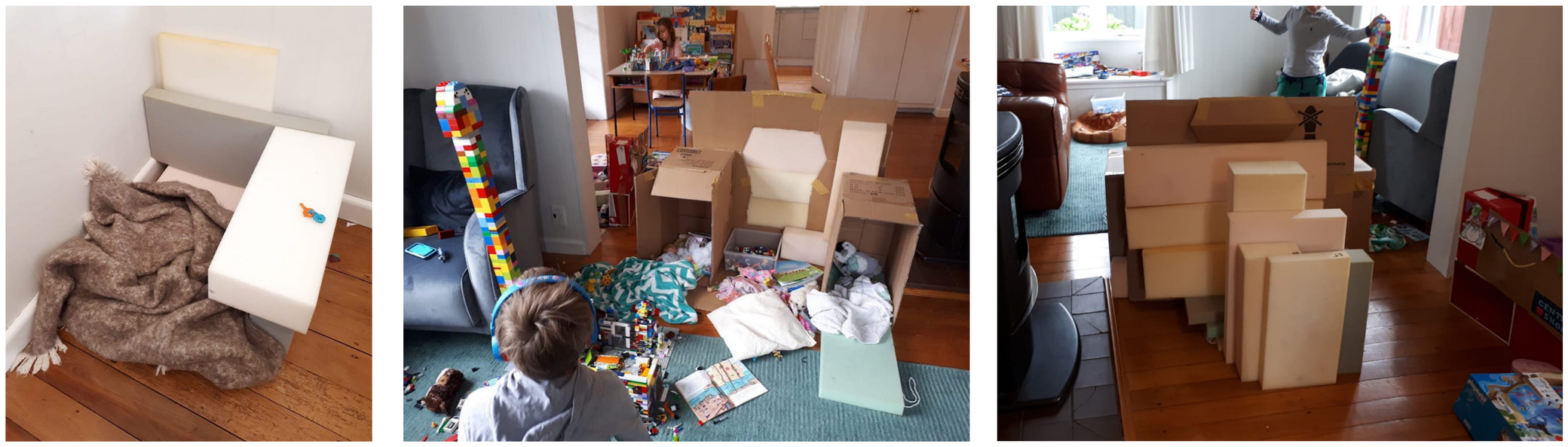
One of the unexpected ways that attunement occurred during the first encounters between Simon and myself was that the week before starting the project, I prolapsed a disc in my lower back. Walking, sitting down, getting up, changing position or location all became painful and difficult. But as Martha pointed out later, the slowness at which I moved was helpful for Simon. I didn't (and couldn't) rush through ideas, and my slowness presented opportunities to learn more about Simon's processes and for him to explore tangential ideas.

I entered into the prototyping process with a curious disposition. Sparked by the initial moments of multicoloured surprise, I continued following Simon's neurodivergent, off-balancing trajectories. My curiosity was focussed on him and what he enjoys. I asked positive questions, rather than asking him what it is he didn't like. This helped draw Simon into the design process and into a space where we could work together. I listened to him and then responded in designerly ways. The discussions with Martha and Fred about his enjoyment of textures, and observations of how he used Lego, led to my choosing to source the foam blocks. Upon learning that his favourite colour was multicolour, I selected as wide a range of colours as possible, including a large roll of polychromatic foam. These approaches might all seem obvious to designers, particularly those interested in processes of co-design, but this is evidently very different from a neuropathological framework, where autism spectrum conditions are seen as a deficit and the resulting behaviours seen as something that need to be 'corrected' and normalised.

After Simon had lost interest in the wall that he had first built from foam blocks, we talked about the idea of a 'soft corner' where he could comfortably spend time. I began rearranging the materials in a corner of the living room and asked him what he thought. He expressed immediate enthusiasm, exclaiming:

> I love it! – It's so soft… all the different textures. It's perfect!
>
> Let's join it together!
>
> Now we need a place to store things! [pulling open a void space concealed by one of the sheets of foam rubber.] It could go behind here.[25]

Never has a project of mine ever received such overwhelmingly positive feedback. The foam blocks were clearly a hit and have had a continuing presence in the house after I left. Dorothy and Simon have continued to reconfigure them. On one hand, what is happening is 'just' kids building cubbies. But viewed another way, these reconfigurations are a kind of 1:1 prototyping: testing things out in the environment and living with them and enabling the children to give clear feedback about their desires and needs, which the re-design of their home will need to respond to.



Figures 10, 11 and 12:
The foam blocks are frequently reconfigured by Simon and Dorothy to create screening walls, storage spaces and reading nooks. Image credit: Martha (research participant), March 2019.

Trampoline

On another visit, Simon's enthusiasm was drawn to the garden. He loves the tactility of the trampoline, and like most young kids, he enjoys being outside and has a lot of energy. Jumping on the trampoline is a great way for him to expend this physical energy in a space that treads a line between safety and frenzied activity. One of his concerns with the trampoline was that although it is enclosed on the sides, it is open at the top. And this allows bees to fly into his jumping space and potentially sting him.

In response, we agreed to enclose the top of the trampoline with a mesh netting used for fruit trees, and Fred and I stretched it across and tied it into place. I then suggested we embellish the sides and ceiling of the trampoline space, and we used ribbons, wool threads and fabric remnants to cover the entranceway. For the next stage, I suggested we try working with Simon's sensitivity to smells.

His sensitivity is such that any ideas of an open plan kitchen-dining-living configuration for the house renovation have been quickly dismissed. A door is essential to mitigate the transmission of upsetting sounds and smells from the kitchen into the rest of the house. The backyard has been planted with many fragrant plants and herbs, particularly lavender and rosemary that we began harvesting, as well as raiding spices from the kitchen cupboard. Lavender was really popular with both him and Dorothy, but rosemary was immediately rejected as the smell made his 'nose feel on fire' – a wonderfully expressive way to describe what was happening so vividly inside him.[26]

Inspired by the sculptures of Brazilian artist Ernesto Neto, we stuffed stockings with these various scented materials selected by both children and then attached them to the new mesh ceiling of the trampoline.[27] Dorothy and Simon jump into their new trampoline, arms swinging, bopping the scented stockings.

Figures 13, 14 and 15:
These scent-filled stockings provided new ways of playing on the trampoline: slowing down to take in the smells, or as items to be hit while jumping. Image credit: Chris Cottrell, June 2019.

After a while Dorothy exits and Simon is able to really let loose. He starts to swing his whole body and arms around, and I get a sense that it's potentially dangerous or scary for his sister to be in there with him. Perhaps the environment of the trampoline offers the opportunity for a kind of self-regulatory 'stimming' with a kind of energy and joy that the neurodiverse artist Prue Stevenson so wonderfully expresses in her project *Stim Your Heart Out*, which was also presented at the *Body of Knowledge Conference*.[28]

Basket wall

And like all prototypes, not everything works! The basket wall was an idea for a room divider that provided storage and screening, while allowing a degree of visual and aural connection. We made it quickly, gathering together the woven storage baskets that were already around the house, being used for laundry and toys. The colours, orientations and porosity offered lots of opportunities that were exciting to me, but it was too heavy, too flexible, and as a result, not taken up by the family.

Figures 16, 17 and 18:
A quick, but unsuccessful prototype that attempted to create visual screening while providing storage opportunities. Image credit: Chris Cottrell, June 2019.

Cardboard constructions

The most recent prototypes have worked with cardboard as a way of testing out more fixed, formal constructions. These structures explore different ways of making smaller spaces within the main living areas that balance privacy, connection, storage and communication, and offer a variety of ways of occupying them. One version (Figure 19) occupies a corner of the living room and provides enclosed spaces for reading, audiobook listening and screen time, as well as angled surfaces for climbing and reclining. Another version (Figures 20, 21 and 22) is a sort of angular tunnel space, which again provides interior and exterior opportunities, including a storage shelf that also works a bit like a post box, or can be opened up to allow for communication and framed views from the inside out into the world. This piece is intended to be mobile, for use anywhere within the house or garden, and can also be rotated to lie flat as a bench seat. The mobility of this second version offers many more opportunities for living flexibly, an important consideration as Dorothy and Simon get older.

Figure 19:
While providing interior nooks and a range of surfaces to occupy, fixing this prototype in the corner of the room limits the flexibility of the spaces. Image credit: Chris Cottrell, June 2019.

Figures 20, 21 and 22:
The canted cardboard prototype is a mobile piece of furniture with an interior that can be occupied. More robust materials would also allow it to be used outdoors. Figure 20 photo credit: Martha (research participant), Image credit: Chris Cottrell, June 2019.

Through these prototyping processes, we have discovered and been able to make decisions on four approaches that will guide us as we move into the more formal (and expensive!) part of the renovation process. These approaches are multicolour, flexible scalable spaces that each maintain a defined sense of purpose, direct access, integration of home and garden spaces, and notions of infinity. As a design approach, 'notions of infinity' came about from a series of conversations and resonances across the project. The first recognisable written character that Simon ever made wasn't a letter or standard numerical symbol, instead it was an infinity symbol. This symbol is also used, with a rainbow coloured gradient, by the neurodiversity movement. And when discussing Simon's education, Martha describes her approach to Simon's education as starting from infinity and working backwards. That is, people normally start with simple concepts, but it is the wonderful complexity and impossible size of infinity that made numbers appealing to Simon.[29] The next stage of the research will put these approaches into play, creating a design for a unique house that is inviting and enjoyable for all its current and future inhabitants and guests.

design guidelines for the autism spectrum

This project began with a curiosity around different modalities of autistic perception, and through a co-design research process of prototyping, has developed a number of specific design approaches that are discussed in the following section. In recent years, other researchers have also been developing design approaches with the aim of providing more general guidelines. The architect and researcher Magda Mostafa has developed the Autism ASPECTSS™ Design Index that comprises seven considerations.[30] These are acoustics, spatial sequencing, escape space, compartmentalisation, transitions, sensory zoning, and safety. Another approach, developed by the architect and academic Ceridwen Owen is a 'pattern language' from her publication *Design Across the Spectrum: Play Spaces.*[31] Owen provides a matrix of eight inter-related design patterns including: structuring the unstructured, sensory diversity, and spaces within spaces. Both these guideline systems certainly have their merits and echo similar approaches that we have uncovered during our initial prototyping phase. However, any set of guidelines will always struggle with issues of transferability in the context of the uniqueness and diversity of experiences for those on the autism spectrum. This raises challenges for spatial designs that must accommodate numerous people with diverse sensory needs, particularly in schools. As Andrew Cutting, a specialist advisor working for the National Autistic Society to advocate for more inclusive educational experiences for those on the spectrum, writes 'a one-size fits-all approach is not appropriate, as every autistic pupil's needs will be different.'[32] Cutting suggests that schools should begin by talking with parents to understand their child's unique strengths and sensory needs; he thus offers a way of straddling between the generality of any design guidelines and the specificity of individual cases.

next steps

The design process is now poised between the bursts of quick, sketchy prototypical constructions that we built together and a desire to make some permanent changes, which still allow flexibility for everyday improvisation, advice on further modifications by occupational therapists, and unanticipated future living arrangements. After three visits of three days each, the family and I are only now revising a briefing document that will inform a more traditional spatial design project. By investing time and foregrounding situated experience early on in the design process, several things have become clearer. The first is to increase the scope of the project, opening the house up to the backyard, which will feature sheltered spaces and a sensory garden. And while the family are fantastically open-minded and prepared to entertain some pretty radical ideas, there is an awareness that the children are growing up, and that the house will need to change with them in ways that can't be fully anticipated. Lastly, the transition to this 'new' *Gentle House* will need to be carefully managed. The prototypes are temporary modifications to the home environment, and ones that Simon has a voice in shaping. The more permanent renovations will be a much larger change. The family and I have discussed ways to help ease the potential shock of such disruptions to his home, using stories, architectural visualisations to explain the imminent changes, and the continued use of cardboard mock-ups to allow him to test drive the experience before we commit to a resolved design proposition. The process has been slow, but immensely rewarding for me as a designer. I have drawn a lot of value from the conversations and time invested in these initial stages and learnt to sensitise and see the world differently. Now, the family and I move forward together with a shared excitement as the potential of the project starts to enter into the next oscillations between the fuzziness of fielding and the focus of perceptual chunking.

acknowledgements

Firstly, enormous gratitude to my collaborators Simon, Martha, Fred and Dorothy who have generously opened their home and life to me. My research has also been informed and supported by colleagues at Monash University, in particular, PhD candidate Anthony Clarke, also principal architect at BLOXAS, Dr Beth Johnson at BrainPark, and through funding from the Department of Design in the Faculty of Art, Design & Architecture. Finally, thanks to the organising committee of *Body of Knowledge* for creating such a diverse and supportive gathering.

I live and work on the lands of the Wurundjeri people of the Kulin Nations, who have been the traditional custodians of these lands for over sixty millennia, and humbly pay my respects to their Elders – past, present and emerging. I acknowledge that sovereignty was never ceded and that their lands and culture have been forcibly occupied and damaged by European colonisation.

author biography

Dr Chris Cottrell is Program Director, Spatial Design at Monash University, Melbourne, AUS. His design research practice operates across architecture, interiors writing, installation, and performative art, to explore how we can create meaningful relationships with our surrounding environments. Alongside ongoing explorations of autistic perception and spatial design, he is currently writing a book for the Routledge Research in Architecture series titled *Atmospheres of Design Practice Research*.

notes

01 See Chris Cottrell, *Architectural Judo: Relational Techniques for Building-Events* (PhD diss., RMIT University, 2017), 72–93, accessed 14 May 2020, https://researchbank.rmit.edu.au/view/rmit:161968.

02 Annalu Waller, (keynote presentation at *Body of Knowledge: Art and Embodied Cognition Conference, Deakin University, Melbourne, Australia, 27–29 June 2019*).

03 Elizabeth B. N. Sanders and Pieter Jan Stappers, 'Co-Creation and the New Landscapes of Design,' *CoDesign* 4, no. 1 (2008): 6, https://doi.org/10.1080/15710880701875068.

04 This is clearly explained by the Australian autism activist Chloé Hayden, 'princessaspien' on TikTok, accessed 27 May 2020, https://www.tiktok.com/@princessaspien/video/6816243444567035142.

05 For a detailed definition of sensory processing disorder please see: 'What is Sensory Processing,' accessed 29 February 2020, https://www.sensorysmarts.com/signs_of_spd.html.

06 Neurotypical is a term used to contrast with neurodiverse. For more detail see note 17 below.

07 Mike Stanton, 'Am I Supping with the Devil?' *Home Education in the UK – Special Education Needs*, accessed 28 February 2020, http://www.he-special.org.uk/articles/aspergersone.php. Note that Asperger's Syndrome is understood as part of the broader Autism spectrum.

08 Author transcription from conversations with research participants. October 2018.

09 All names have been changed to protect the identity of the participants in accordance with an approved Monash University research ethics agreement.

10 Though this project works towards a bespoke design outcome, many parallels with how this family have adapted their living spaces can be seen in the examples discussed in Ceridwen Owen and Damhnat McCann, 'Transforming Home: Parents' Experiences of Caring for Children on the Autism Spectrum in Tasmania, Australia,' *Housing Studies* 33, no. 5 (2018): 734-758, http://doi.org/10.1080/02673037.2017.1390075.

11 Tito Rajarshi Mukhopadhyay, *Plankton Dreams: What I Learned in Special-Ed* (London: Open Humanities Press, 2015), 34-35.

12 Mel Baggs, 'Doing things differently' blog post, (20 November 2006), accessed 1 March 2020, https://ballastexistenz.wordpress.com/2006/11/20/doing-things-differently/.

13 Naoki Higashida, *The Reason I Jump: One Boy's Voice from the Silence of Autism*, trans. David Mitchell and Keiko Yoshida (London: Sceptre, 2013), 76.

14 Erin Manning and Brian Massumi, *Thought in the Act: Passages in the Ecology of Experience* (Minneapolis: University of Minnesota Press, 2014), 16.

15 David Mitchell, 'What My Son's Autism has Taught Me,' (2017), accessed 20 October 2020, https://www.theguardian.com/society/2017/jul/08/david-mitchell-son-autism-diagnosis-advice.

16 Brian Massumi, writing in the prelude to Erin Manning, *Always More Than One: Individuation's Dance* (Durham: Duke University Press, 2013), xxii.

17 For a brief introduction to the self-advocacy movement of Neurodiversity see Nick Walker, 'The Neurodiversity Paradigm,' accessed 20 October 2020, https://autisticuk.org/neurodiversity/.

18 Massumi, *Always More Than One*, xxii.

19 Massumi, A*lways More Than One*, xxii.

20 Cottrell, *Architectural Judo*.

21 Cottrell, *Architectural Judo*, 147-156.

22 Jigoro Kano, *Mind over Muscle: Writings from the Founder of Judo*, trans. Nancy H. Ross (New York: Kodansha, 2013), 71, 94-102.

23 *Shorter Oxford English Dictionary on Historical Principles* (5th ed.) (Oxford; New York: Oxford University Press, 2002), 1467.

24 Henri Lefebvre, *Rhythmanalysis: Space, Time, and Everyday Life* (New York: Bloomsbury, 2013), 25.

25 Author transcriptions from conversations with research participant, October 2018.

26 Author transcriptions, October 2018.

27 See for example: Verena Gamper, Thomas Mießgang and Hans-Peter Wipplinger, *Ernesto Neto* (Cologne, Germany: Verlag Der Buchhandlung Walther Konig, 2016).

28 Prue Stevenson, 'Stim Your Heart Out,' accessed 1 March 2020, https://www.stimyourheartout.com/.

29 Author transcriptions from conversations with research participant, November 2019 and February 2020.

30 See Magda Mostafa, 'An Architecture for Autism,' (n.d.), accessed 20 October 2020, https://www.autism.archi/aspectss.

31 Ceridwen Owen, *Design across the Spectrum: Play Spaces* (Launceston, Australia: University of Tasmania, 2016). The full suite of spatial 'patterns' are: Structuring the Unstructured; Crossing the Threshold; Spaces within Spaces; Active Engagement; Thinking in Pictures; Seeing in Detail; Sensory Diversity; Stepping Stones to Social Interaction and Props to Release the Imagination.

32 Andrew Cutting, 'Reasonable Adjustments for Autistic Pupils' Sensory Differences,' (2019), accessed 20 October 2020, https://network.autism.org.uk/knowledge/insight-opinion/reasonable-adjustments-autistic-pupils%E2%80%99-sensory-differences.