

**Breathing: An artist's reflection
on the visualisation
of an interoceptive experience.
The figurative imagination
dissolves into the flux of process.**

GARRY BARKER

Visualisations of interoceptive sensations slide between visual invention and memories of past experiences, between a need to rely on physical resemblances to other objects and a more abstracted understanding of energy flow. This report explores how images that rose unbidden from the unconscious when trying to visualise a particular somatic experience, were then taken formally further on, as another set of images were developed that responded to more abstract visual principles. This research report also explores how interoceptual research can become inseparable from a growing awareness of how the body knows itself and its own metaphors. Centred on a reaction to a Covid-19 induced problem with breathing there is an attempt to show how in the mind images are enfolded into a continuum whereby differences between subject and object disappear. As the process of drawing and image making develops, the artist first of all finds parallels between remembered visual forms and his experience of the sensations associated with being unable to breathe, then on reflection, a further series of drawings are produced that are responses to the process or flow of somatic awareness.

Keywords: interoception, somatic, body, perception, drawing, experience.

As visualizações de sensações interoceptivas deslizam entre a invenção visual e as memórias de experiências passadas, entre a necessidade de confiar em semelhanças físicas com outros objetos e um entendimento mais abstrato do fluxo de energia. Este relato explora o modo como as imagens que surgiram espontaneamente do inconsciente, quando se tentou visualizar uma experiência somática específica, foram depois formalmente retomadas à medida que se desenvolveu um outro conjunto de imagens em resposta a princípios visuais mais abstratos. Este relato de investigação também explora o modo como a pesquisa interoceptiva pode tornar-se inseparável de uma consciência crescente do conhecimento que o corpo tem de si e das suas metáforas. Com foco na reação a um problema respiratório resultante de covid, faz-se uma tentativa de mostrar como na mente as imagens são encapsuladas num continuum onde as diferenças entre sujeito e objeto desaparecem. À medida que o processo de desenho e produção de imagem se desenvolve, o artista encontra, antes de mais, paralelos entre formas visuais lembradas e a sua experiência de sensações associadas à incapacidade de respirar, para depois, em reflexão, produzir uma série de desenhos que respondem ao processo ou fluxo de consciência somática.

Palavras-chave: interocepção, somatização, corpo, percepção, desenho, experiência.

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Artista, educador e investigador associado à Leeds Arts University UK. Tem um extenso corpus de trabalho que inclui, recentemente, a recolha de reações à atual crise migratória e visualizações da consciência dos idosos no que se refere ao processo de envelhecimento. Trabalhou em projetos artísticos financiados, desenvolvendo também uma prática ligada com galerias de arte. Participa em diversas iniciativas que cruzam e integram a escultura, a impressão, a cerâmica, o desenho, a animação, a publicação e a performance. A sua investigação recente envolve a visualização da interocepção e da percepção somática. Atualmente, é membro do grupo de investigação 'The Observation of Perception, considered through drawing', que integra o i2ADS, Instituto de Investigação em Arte, Design e Sociedade da Faculdade de Belas Artes da Universidade do Porto.

1. INTRODUCTION

Interoception is defined as the sense of the internal state of the body; (Khalsa & Lapidus, 2016, p. 2) can be both conscious and non-conscious and is central to the regulation of our body's internal systems. (Connell, Lynott & Banks, 2018) It is also an aspect of perception itself and is inseparable from it. The perceptual interpretation of received qualia begins with an awareness of the body, which we inhabit and develop a sense of for nine months before we emerge out into the external world. Interoception is in place well before the body begins to perceive external events. An understanding of interoception is therefore essential to the wider understanding of perception itself. If we think of perception as the flowing movement of our awareness, we can picture that awareness changing, sometimes one aspect coming into focus and then another. We abstract out of the flow, even if only for brief moments, we become aware as David Bohm (2002, p.13) stated, that 'various patterns have a certain stability'. However, these patterns dissolve into each other rather like the various flows of waters in a stream, at one moment they are a tightly swirling eddy as they pass amongst rocks and at another, smoothly flowing currents in a wide flat river plane.

2. THE VISUALISATION OF BREATHING

This report was developed by an artist who had had breathing problems associated with Covid-19, and who took advantage of the situation because he had in previous work decided that interoception and perception were entangled and intermingled in such a way that during times of distress clear boundaries between the two states disappeared.

2.1 THE SUBJECTIVE EXPERIENCE OF INNER BODY SENSATIONS

Breathing is central to our perception of life itself and it affects both body and mind. It has been pointed out (Hsu, Tseng, Hsieh and Hsieh, 2020, p. 289) that because breathing affects us in such profound and complex ways, it takes different parts of our brains to actively process breath awareness. Therefore, associated drawings were approached in a variety of ways, from phenomenological awareness to poetic or metaphorical responses to the phenomena experienced.

Anderson, (1986, p. 198) argues when speaking of Heidegger's approach to phenomenology, that 'truth' is what we term 'actual' experience. Drawing in this case is presented as a form of poetic truth to

the experience. When making these drawings they are also seen as an encounter with phenomenological thinking itself. An encounter informed by Gaston Bachelard's (2014) use of poetry to describe how we understand place and space, in particular how we come to a poetic visual awareness of the body's interior. When breathing, opening the mouth wider and using the diaphragm muscles, are actions that form a continuum with using the arms to open a door or a window to let in fresh air into a room: interior actions overlap with exterior events.

As Varela, Thompson and Rosch (1993, p. 26) point out, 'There is no abstract knower of an experience that is separate from the experience itself.' They also point out that reflection on an experience becomes part of that experience itself, (p. 27) and that this opens up new possibilities 'beyond current representations of the life-space'. These new possibilities are what hopefully begin to emerge as the images that try to visualise these inner body experiences are developed.

When exploring the relationship between Merleau-Ponty's concept of 'dasein' and Heidegger's, Morley (2001, p. 74) pointed to Merleau-Ponty's awareness of the lived body and how it grounds personal life in nature, becoming a crossing point between, 'subject and object, body and the world.' (Ibid, p. 75) Morley goes on to state that 'Breath control is the emblem or master metaphor of this goal.' (Ibid. p. 76) The reality of being unable to breathe and the mental control that is then needed in order to get past and recover from the situation, heightens an awareness of Morley's point that breathing sits right at the crossing point of subject and object. The loss and regaining of ability to breathe was also in this case associated with the slipping into and out of consciousness, a situation that suggested that drawings produced in response could be thought of as metaphors for consciousness itself.

Damasio when writing about the birth of consciousness states:

The organism as a unit, is mapped in the organism's brain, within structures that regulate the organism's life and signal its internal states continuously; the object is also mapped within the brain, in the sensory and motor structures activated by the interaction of the organism with the object; both organism and object are mapped as neural patterns, in first-order maps; all of these neural patterns can become images. (Damásio, 2000, p. 169)

The first drawing that was done was a very simple map of where pain had been experienced recently; it was used as a method of thinking about where

rather than what things were in relation to each other. It was like an early map of unknown territory, a rough guide for an exploration of my own body's awareness of itself.

3. VISUALISING THE INTEROCEPTIVE EXPERIENCE WITHIN THE FIGURATIVE IMAGINATION

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When having problems with breathlessness, help with breathing techniques is used to focus one's attention. You are told to draw in breath from deep down using your diaphragm, or to concentrate on nose breathing, or breathing with an open mouth. As you undertake these exercises you begin to feel the insides of the tube of the throat, the movement of the ribcage as it expands and contracts the lungs within, an awareness of the diaphragm muscles in the development of deep, more meditative breathing, or the flaring of the nose as you pull in shafts of air. As attention shifts into an awareness of the body's corporality, a more spatial understanding or three-dimensional somatic feeling tone emerges, one that slips backwards and forwards into the imagination of space. The experience of being unable to breathe had meant that these techniques had all been offered to me as part of the recovery process. As I lay in bed recovering, images of the initial breathing blockage would emerge from memory and one image would begin to slip into another and I often had to re-focus in order to ensure these images had the necessary distancing or 'bracketing' needed, if I was to make them into images that could be drawn.

Normally we spend little time attending to what James Morley (2001, p. 76) termed the 'sentient mass' of our bodies. In fact, usually when we are ill we 'depersonalise' our bodies, in order to distance ourselves from the trauma of the experience.

When focusing on breathing in yoga, participants engage with proprioception (Morley, 2001, p. 75) to enable the practitioner to feel their body's relationship between its inside self and the outside world. When a meditative process of breathing is undertaken, the practitioner gradually becomes aware that it is not something separate from the world, it is the world. Using similar breathing control techniques whilst being ill makes one even more aware of the corporeal space we inhabit. However, in the dream like state that illness induces, one becomes entangled into that psychic space whereby interiority and exteriority or inside and outside spaces dissolve one into the other. Just as the skin flows over the body and slips over the lips to then form the lining of the mouth, the interior of the lungs becomes

part of the space occupied by a flow of air as it passes from outside to inside the body.

The first images to emerge from the process of trying to draw the feeling tone of the experience of breathlessness were developed from dreams of ribs morphing into clinker built boats and organs piping music through the ribbed vaults of Gothic cathedrals; the body's bony ribcage embedded into a poetics of metamorphosis. Memories of a constricted throat became a tunnel's blockage; tiny bronchial tubes became limestone tunnels. I relived a car ride through the Mersey tunnel that my father took me on as a boy, recalling the excitement as we plunged down out of the Liverpool daylight into the darkly lit tunnel. Memories and dream fragments of images of ribs, tunnels, vaulting and boat construction were in reverie glimpsed as if underwater, located alongside memories of the subterranean cisterns under Istanbul; a magical space where the water hides sunken medusa heads and recycled pillars from ancient temples; an inverted world reflected in waters that deepen into a dark infinity. In these dreams inside and outside experiences were blurred, image reflecting waters emerged from the bowels of the earth, wooden walkways become plank made boats with human ribs and past experiences that were associated with breathing took centre stage. Memories of being on a barge travelling through a canal under limestone hills emerged, real spaces becoming triggers for dream spaces as consciousness fell away. Interoceptual sensations seemed to be triggering corporeal awareness for both the conscious and the unconscious body. Particular personal memories became important, walking down into the Dikteon Cave in Crete was remembered as if treading on the insides of a huge body. The body experienced as a continuum of inside and outside is an ancient feeling; one that Lewis-Williams argues (2011) was intensified by rituals and drug induced states. In my case a mind befogged by illness began to let go the strictures of logic. I imagined my entry into the world through a birth canal, re-imagining the birth of Zeus. I sensed something somatically understood, as I began to draw the images associated with these rib/throat dreams and hallucinations.

The initial drawings were made on notebook pages using a biro; scribbled notes of the images dreamt. When art materials could be accessed, further drawings were made using inks and washes and these were scanned and edited in Photoshop. The next series of images began to rely more on collage made partly from sections of previous drawings, such as of ribcages, and partly from photographed images from old books and ones found on the internet, of tunnels, cathedrals, boats and other sugges-

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Fig. 1 *Rib/throat/boat*, 2022. Ink and chalks on paper © Garry Barker.

tive imagery. These were digitally deconstructed, and images that represented both what had been experienced at the moment of a breathing blockage and what had been experienced in reverie, began to emerge. Photoshop was used to adjust these images in order to achieve the 'feeling tone' that seemed to provide the most accurate 'representation' of the experience. Drawings of ribs became layered over photographs of cathedral ceilings, their fan vaulting rib-like, finger like and tree like. The collage process was however beginning to fragment the imagery and this felt unlike the experiences associated with the dreams, so in order to focus and create an essence of these images they were taken into printmaking; the process of converting images into prints uncoupling collage elements from their original associations and colour was used to give coherence and feeling tone.

As this was done it felt as if this working method became an extended part of the experience itself, the dream state extending into the imaginative period of image construction.

Husserl in his search for a pure phenomenological philosophy remarked that, '...each thing that appears has *eo ipso* an orienting relation to the body, and this refers not only to what actually appears but to each thing that is supposed to be able to appear.' (1989, p. 61) I.e., images that emerge from the imagination are also rooted in our deep corporeal grounding. In trying to capture what had been 'seen' during semi-conscious reveries I was finding it hard to differentiate dreams from somatic interoceptions. The drawings, collages and prints made during this time were sitting on a liminal edge between imagination and the representation of an interoceptive experience, and although interesting I decided they as yet failed to directly communicate the experience of loss of breath control.

In the next group of drawn images, ribbed structures began emerging that carried within them personal memories, Figure 4 for instance linking the severe cough I had to the pain experienced when I previously broke several ribs. The image that emerged was also informed by work I had done when developing votives in relation to the visualisation of pain with other people, an experience that I was very aware was directly feeding into this one.

It may appear as if by allowing my sub-conscious mind to take over that I was letting slip the focus for this investigation; however, on the contrary I began to feel as if the inner body and the hidden mind had a connection far deeper than any rational relationship.

By trying to focus on the various sensations that emanated from my body, I found my feelings entwined with the stories I was telling myself in order to understand the situation. What was partly an attempt to isolate interoception from perception, was

becoming a multi-layered complex composite out of which several images were made, all attempts to give imaginative visual form to embodied sensations and suggesting that there was an embodied almost mythic platform that images emerged from.

4. VISUALISING THE INTEROCEPTIVE EXPERIENCE USING IMAGINATIVE ABSTRACTIONS

Images already produced suggested that perception of the external world was both an extension of the internal one and something that could be taken back inside the body as an idea as well as an experience. As Bachelard himself thought, the sharp division between interior and exterior space was misguided, stating, 'outside and inside are both intimate, they are always ready to be reversed'. Bachelard (1958/1994, p. 217)

Another post-Covid-19 experience was a change in energy levels. I had three days when lethargy overtook me, and I could do very little except lie in bed. Partly in response to this, and partly in response to having read Bohm's 'Wholeness and the Implicate Order', I began to imagine my body as a moving mass of energy, sun-like, with hidden currents that would burst up to the surface at unexpected moments. I then, as enough energy returned to allow me to draw, attempted to visually re-insert my own now dissipating body back into the flow of experience and as I did so I realised I was also dissolving subject/object differences. The visual idea of energy flow was now part of my relationship with my body and not a separate thing that stood outside of it. The body as an image became a complex series of related energy flows; electrical energy, chemical change, air exchange, blood flow etc. Liquidised substances became my materials choice in order to visualise the flow and movement of sensations.

When you have Covid-19 one of the things that can happen is that blood flow is affected. Severe Covid-19 infection, it has been argued, (Janardhan, Janardhan, and Kalousek, 2020, p.555) puts people at greater risk of developing blood clots in their circulatory system. Therefore, a decision was made to use various different pigmented fluids, some thicker than others, a process that reflected the fact that haemoglobin and other substances are dissolved into blood.

As I revisited the experience of breathlessness I did so with an awareness that consciousness and emotion are, as Damasio, (2000, p. 16) stated, 'not separable', and that within consciousness the body is represented in the brain in a variety of ways all of which are tied to the maintenance of life. When

Fig. 2 *The throat opens, the ribcage moves, a blockage moves towards the opening like a canal boat moving through subterranean tunnels, 2022.*
© Garry Barker.

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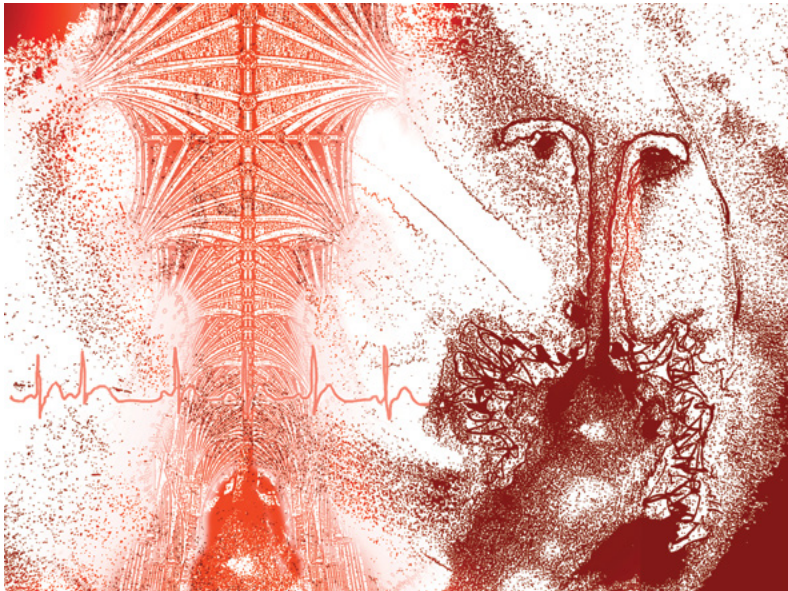
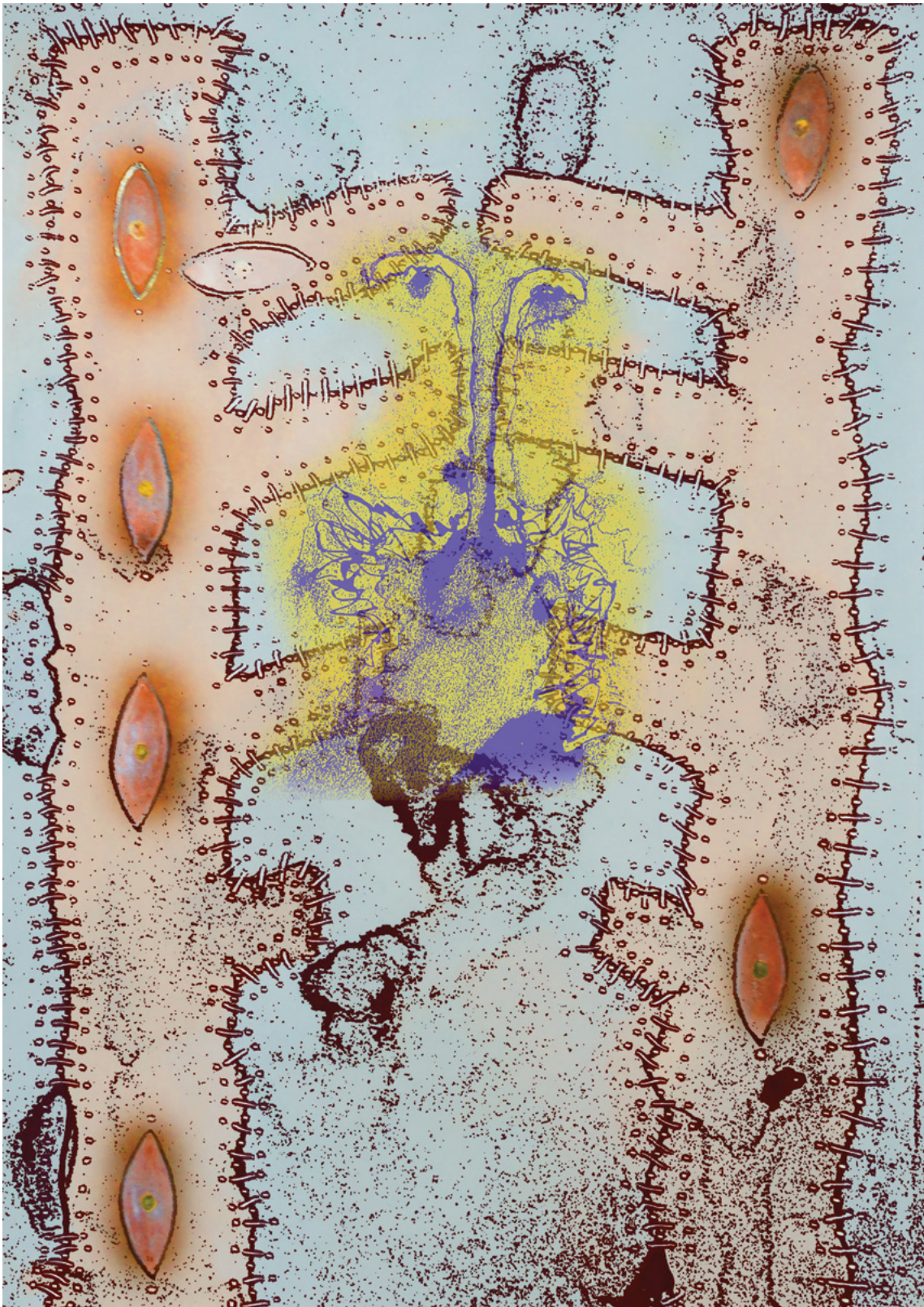


Fig. 3 *A dream of ribs and rhythms: Silkscreen print, 2022.*
© Garry Barker.



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Fig. 4 Days of coughing brings back pains in ribs: Digital print made from ink washes and silkscreen mono-print, 2022. © Garry Barker.

threatened with a loss of consciousness, this became only too clear. Emotion, internal visualisations and feelings alongside drastic changes in my body's physical state, were all entangled in a desperate attempt to survive. I wanted to make a poetic response, but one that also allowed me to engage in phenomenological reflection. Smith and Sparks (2016) suggest 'bracketing' a direct experience, in order to stand aside from the constant flow of it. A series of drawings had already been made attempting to capture the feeling tone of the experience; raw representations of the forms glimpsed in my mind as I was gasping for breath. These images were necessarily sketchy and taken from a time when emotion and physical experiences were both heightened. The next set of drawings were an attempt to bracket the experience, and they consisted of diagrammatic notebook sketches, which were also a response to Damásio's point (2000) that the body is represented in the brain in a variety of ways, and if that is the case, I therefore concluded that my own representations could also come from a variety of aesthetic positions, including mapping.

Nancy states:

If...drawing can find its worth as an element or dimension common to all aesthetic fields, it is because what one calls "aesthetic" concerns a "feeling", not as a sensory faculty that records information but a sensing, in other words, a faculty of making sense, or of letting it be formed. (2013, p.21)

He goes on to explain that a drawing does not give us information, what it does is communicate a sense of something. (Ibid). This 'sense' of something has to be achieved via or through the use of a particular visual language, and it was this language that I needed to continue to evolve if I was to suggest both the flow of the experiences and the way that we can abstract things from that flow.

I was also very aware that my visual research was part of a wider exercise in exploring drawing as a tool for the documentation of the act of perception itself. I wanted to foreground the central nature of interoception to an understanding of perception and highlight how drawing is key to this understanding. As a communication system I had begun to believe that it mirrored perception itself. Every image we make, like all experiences, is open to interpretation or perceptual expectation. This is what Gombrich (1980) called the beholder's share. The predictive theory of perception, as outlined by Seth (2021, p. 118), uses Bayesian inference concepts, a method of statistical inference used to update the probability for a hypothesis as more evidence or information becomes available. The predictive the-

ory (Kersten, et al. 2004, p.3) is used to explain how we decide in terms of a best guess what something is and how we react to things we have constructed and continue to re-construct from constantly changing inputs. Drawings made in an attempt to visualise the normally invisible sensations of interoception, have emerged from a constantly being moved-about body of wet materials, a complex morass that is not just an originator of interoception, but is a type of Rorschach ink blot on which the artist's visual system can perform its interpretive act. Each drawing made in this situation, is also an image trying to evoke the interoceptual act, a metaphor for Bayesian inference at work. In the act of a drawing's interpretation, interoceptual and metaphoric awareness slip between each other. An understanding emerges from overlapping simultaneous responses to the visualisation of the invisible somatic feeling tones of the body. This particular awareness when fused with Mark Johnson's use of basic shapes to show how our internal senses can be used as an 'imaginative schemata' (Johnson, 2007) then led to a way of working that began with notebook drawings made in response to 'live' events, followed by more reflective visualisations, that attempted to integrate a more painterly drawing language into the diagrammatic language of the notebook drawings.

5. DRAWING THE SOMATIC INTEROCEPTIVE EXPERIENCE

The notebook image Figure 5 was an attempt to bracket the feeling of the throat closing. The chest was starting to hurt and emotionally there is an attempt not to panic. The drawing has an open mouth at the top, surrounded by spiral signs for the air that was passing. The two lines below the mouth represent the throat, with a cross at the bottom representing an obstruction. Below, with a few lines representing ribs, are the malfunctioning lungs, surrounded by forms representing both pain and pressure.

From the notebook drawing, Figure 6 was made using pigments dissolved in water, felt-tip pens, brushes and a dip-in pen. The image is also a metaphorical representation of the fact that over sixty percent of our bodies consist of water and it is this water that facilitates the various chemical exchanges need to keep our body functioning. The drawing began using water dissolvable felt-tip pens responding to the scribbled note done the day before. Brushed water was used to loosen the initial drawing and to open the image out to a more 'liquid interpretation', and as forms began to appear they were worked up by adding additional pigmented liquids and using a dip in pen to draw through the damp surfaces in order to visually echo the initial sensations that were experienced. Colour gradually became more important, in particular the throat became red to represent the raw feeling of the restricted passage. What were initially marks made to represent ribs, were now visualised as forms squeezing the airway shut; the process of image arrival being not so much about logic, but about intuitive responses to an emotive situation. What had been the mouth was now a dying flower or trapped jellyfish, the drawing's liquid surface constantly being brushed into new forms, and as these came into being, some seemed to suggest what the experience felt like and others what it ought to look like. This process was more about energy flow than the representation of things.

On reflection the image seemed more authentic than previous attempts, but still failed to fully communicate the lung restriction felt at the time. So I went back to the notebook drawing and focused on the chest, the rib marks now becoming ribs inside the lungs, taking up half the space and being irritated by what I began to think of as grains of pollen, represented by orange dots of paint. The lining of the lungs was still red, but blue became the colour of suffocation, as if my insides were drowning.

Finally the more successful drawings were photographed and then adjusted in Photoshop, partly to tweak the colour but also to ensure the image would work for both print and screen.

Central to the medical concerns when your breathing is affected is sputum expectoration (Pra-

bawa, Silakarma, Manuaba, Widnyana, and Jeviana, 2021, p. 495). For the person suffering from breathlessness this is a 'rattling' or 'wheezing' effect, the feeling of something inside your chest that is needing to move, but is stuck. This is something you can't see, but you can feel and as you control your breathing, you will either be able to ease the situation or the effort of breathing will bring on a bout of coughing. This became the focus for the next series of drawings.

The cough forced the mind/body conjunction to have to grapple with another aspect of the sensation of narrowing air passages. In the resultant drawings, Figures 9 and 10, both texture and colour became vitally important. Forms were developed from drawings made to represent airflow and the opening and closing of lung spaces. These images were more about the feeling tone associated with muscles controlling breathing. Instead of having to represent an inability to breathe, the emerging images visualised the fact that I could breathe. The initial images were representations of the pent-up sense of air being put under pressure.

The visual sense of pent-up pressure was not however powerful enough, it was too static.

Using a collection of various coloured liquids and water-soluble felt tipped pens a new drawing was made of the feeling associated with a constricted airway. I began by indicating the various spaces that I sensed were blocked off and which opened out as a cough emerged. I was also very aware of the emotional intensity of the situation I had faced when a coughing fit led to an inability to breathe.

A zig-zagging orange form that drops from the top of the drawing was initially drawn in orange felt tip, then wet with brush and water, drawn over using a dip in pen and ink and then whilst still wet touched with a loaded brush of powdered orange pigment. This was dried off using a hair dryer and then another layer was added to suggest a thin cover that had been in parts broken through by the effort to breathe. This wasn't pre-planned; it was a response to the manipulation of materials. The flow of water suspended pigments suggested forms and I followed what was intimated. My attention during this drawing was on the possibilities of bracketed representation, sometimes direct memory experiences would reassert themselves and decisions would become more directed by them. I was not sure where marks would go, but gradually I became more assured in my decision making; in effect dissolving myself into it. I was in effect inside the actions I was taking, an arriving representation of a cough being something that emerged just as much from myself as an experienced cougher, as from myself as an experienced drawer. This was I decided at last an image that carried the formal conviction that I needed to communicate how something had actually felt.

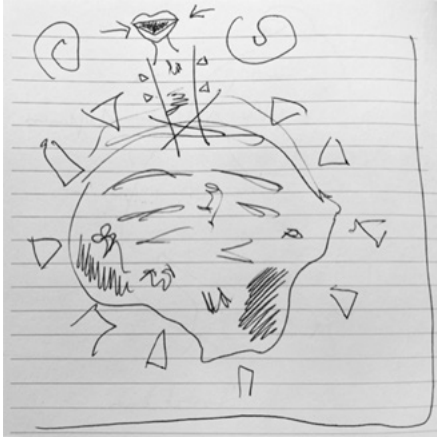


Fig. 5 Notebook page:
Lungs can't access air,
2022. © Garry Barker.



Fig. 6 *The feeling of the throat*
closing, 2022. © Garry Barker
Digital print made from ink washes.



Fig. 7 The lungs feel restricted,
2022. © Garry Barker Digital
print made from ink washes.

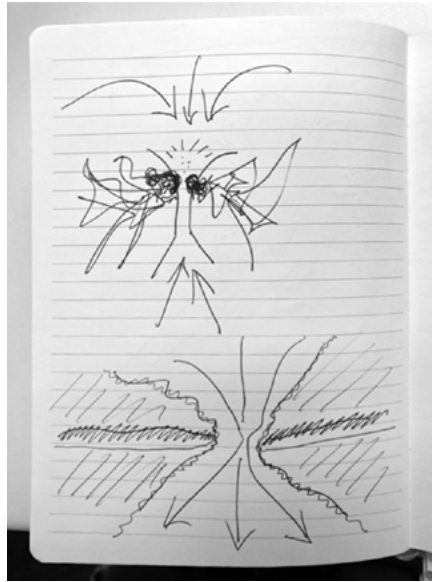


Fig. 8 Notebook page with sputum
retention/dry cough images, 2022.
© Garry Barker.



Fig. 9 The air in the lungs under
pressure, 2022. Garry Barker Digital
print made from ink washes.

Fig. 10 The restricted space
in the lungs through which emerges
the cough, 2022. © Garry Barker
Digital print made from ink washes.



The visualisation of interoception as an aspect of perception can be understood as the drawing of informed predictions; as Seth, (2021, p.186) states in relation to perceptions, they are ‘controlled hallucinations’. This, coupled with Robson’s (2022) description of the mental activity relating to perception in his book, ‘The Expectation Effect’, as a ‘prediction machine that constructs an elaborate simulation of the world’ (2022, p.10), has led to an understanding that the process of interoceptual visualisation through the drawing of images, not just mirrors this process of prediction, but that it can also operate as an analogous metaphoric activity.

The drawing imagination in this case is shown as based in a corporality that is both an interior and exterior experience. Morley (2001, p.76) explains, ‘I am made aware of the body, habitually experienced as an “outer body” in contact with the external world, as being also an “inner body,” not just occupying physical space, but as inhabited, psychical space.’ The body and the world it inhabits, when imagined through these drawings, becomes a continuum; and we ought not to regard the drawings made as separate from ourselves. I have realised that an idea that begins in the body is also an extension of that body.

The imaginative representations of inner body experiences emerge from the body/mind of a particular animal. In making drawn images in response to this somatic body it is seen that drawings can be both the measure of experience and the source of the animal’s figurative imagination.

Mark Johnson uses basic shapes to show how a human being’s internal sense of balance can be used as an ‘imaginative schemata’; (Johnson, 2007) and he explains how these basic schemata can lead to concepts such as the balance of logical argument and mathematical equality. There are various ways that these sorts of schemata can be combined, and the drawings made have embedded within them formal elements that can be read as complex body schemata.

It is in the recognition of the human body as a fluid process that is inseparable from and dissolved into the world, that we can hopefully find ways to avoid binary oppositions in our thinking and this series of drawn images hopefully helps us to visualise the situation.

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