

# Birthspace, Light and Embodied Experience:

## Insights from the writings of Maurice Merleau-Ponty and James J. Gibson

This article was originally a response to the AIARG conference session on the theme of Person, Place and Time. My doctoral work in progress focuses on a practice-based, architectural ‘reimagining’ of the birth environment – that is, the hospital-based labour and delivery room – a contested, ‘medicalised’ space that some see as a technologically superior and ‘safe’ space, and others see as humanistically impoverished, hostile and even unhealthy. Yet this room is the site of entry into life on earth, a most profound human experience. The project, a phenomenological study, finds that light – which I define as the inseparable trio light/darkness/colour – is a key affordance for birth, as it influences mind/body in fundamental ways that can impact birth processes. Through a reflective and reflexive design praxis, I have explored possibility rather than causality, allowing for the emergence, through my working process, of conceptual understandings about the value and meaning of light as a crucial architectural aspect of an evolving concept of birthspace. This is important because environment cannot be separated from mind/body. This paper focuses on the insightful comments concerning light/darkness/colour which I have drawn out of the writings of two acknowledged ‘fathers’ of ‘embodiment theory’, Maurice Merleau-Ponty and James J. Gibson. These are brought together for the first time, to consider how their understandings of light as spatial experience could be mined further as we seek to design important spaces for human lived experience – of which the birth environment is certainly one.

### Introduction

My doctoral work on the birth environment is the ‘terrain’ in which this paper moves. This practice-based architectural project is focused on returning to the birth experience as ‘embodied’ experience – away from the medicalised notion of the body as ‘object’. As Robbie Davis Floyd (2004) has suggested, the body (the woman’s body) is understood, in the medical paradigm, to be a mechanical entity...like a car...indeed, a car that needs ‘fixing’. Fahy, Foureur and Hastie (2008) have made a strong case that the environment itself can influence birth processes – that birthspace can influence birth processes. In a symposium held at University College Dublin in June 2013, organised by myself and Martina Hynan, twenty-six speakers from across the world address the visual and sensory culture of birth, providing ample evidence that birth is a complex topic of interest in the early 21st century ([www.reimaginingbirth.com](http://www.reimaginingbirth.com), n.d.). My own project/dissertation aims to re-

imagine the birth environment, recasting it as an architectural space of import for human being and becoming. Through a studio-based process of exploration, ‘empathic observation’, and reflection, I have come to an understanding of light as ‘*affordance*’ (Norman, 2015) within birthspace. The writings on light by James J. Gibson and Maurice Merleau-Ponty support my own practice-based findings.

Natural light connects us to the cosmos. Contemporary, institutionalised birthspace not only lacks ‘cosmicity’ (connection to cosmos through light/darkness/sky) but also deprives us of ‘intimacy’ (connection to closeness, sensuality, privacy). Light – understood throughout this article as the indivisible trio, light, darkness, and colour – provides deeply felt physical and metaphysical presence that is inextricably woven into our lived experience within built environment. Thinking about light is one aspect of thinking about embodied perception. As designers, we are aware of

the elements and languages that we may utilise in developing human spaces – places of meaning and sensitivity – through shaping material and immaterial architectural form and space. Hence, we know that we can create and influence atmospheres, moods, feelings, meanings (e.g. of authority, of awe, of comfort, of angst, of calmness, of control, of delight). Our own lived experiences and creative practices inform us that our emotional and physiological responses to environment are not just in the mind...nor are they just in the body...we cannot really separate them into compartments. Architects and designers do know well that we design in order to create and influence settings and places, for those who live and move within them. As Bruno Zevi (1974, p.32) famously stated, with respect to architecture as space for human experience, “Architecture is environment, the stage on which our lives unfold.”

Now, if we agree that the mind and body are inseparable, and further, that the environment (a cloister courtyard, a sunny breakfast room, a Greek temple or a Shinto shrine, a Gothic cathedral, a forest, a windy beach, a moonlit night in the desert, a misty twilight, a warm hearth) can influence our feelings and our thoughts – then we must be aware that mind/body/environment are intricately connected. And here we find ourselves in the natural domain of the two aforementioned key figures in the arena of ‘embodiment theory’ – Maurice Merleau-Ponty and James J. Gibson.

Maurice Merleau-Ponty (1908–1961) and James J. Gibson (1904–1979) both began to think, in the mid-20th century, about the intertwining of mind/body/environment... from their disparate places and fields: Merleau-Ponty as a phenomenological philosopher (in France) and Gibson as a psychologist (in the US). Both were seeking to understand visual perception, but both moved into a much deeper discussion of perception as being ‘of the body’ – and of the ways in which mind, body and environment were connected.

Tim Ingold (2011, p. 3) reminds us of the Gibsonian argument for the interwoven and complex nature of our environmental perception/experience:

Perception, Gibson argued, is not the achievement of a mind in a body, but of the organism as a whole in its environment,

and is tantamount to the organism’s own exploratory movement through the world. If mind is anywhere, then it is not ‘inside the head’ rather than ‘out there’ in the world. To the contrary, it is imminent in the network of sensory pathways that are set up by virtue of the perceiver’s immersion in his or her environment (Ingold, 2011 p.3).

George Lakoff, a leading protagonist in ‘embodiment theory’ has stated that new understandings from cognitive sciences indicate that ‘reason’ (which we have considered as a distinguishing aspect of being ‘human’) can no longer be considered “a transcendent feature of the universe or of disembodied mind.” Rather, it is “shaped crucially by the peculiarities of our human bodies, by the remarkable details of the neural structure of our brains, and by the specifics of our everyday functioning in the world”. Further, it evolves out of our animal nature...and develops from “perceptual and motor inference present in lower animals”. Reason, he adds, is “mostly unconscious,” “largely metaphoric and imaginative” and “not dispassionate, but emotionally engaged”. Lakoff argues that the embodied mind is such that we derive our conceptual systems by drawing upon “the commonalities of our bodies and of the environments we live in”. Thus “much of a person’s conceptual system is either universal or widespread across languages and cultures” (Lakoff, 1999, pp.4–6).

It is beyond the scope of this paper to further elaborate the recent and rich history of developing theories of embodiment and embodied cognition. However, we will be able to recognise, in the writings discussed herein, that Gibson and Merleau-Ponty were key figures, in different ways, in recognising that perception, cognition and experience are embodied. As Merleau-Ponty stated it:

Insofar as, when I reflect on the essence of subjectivity, I find it bound up with that of the body and that of the world, this is because my existence as subjectivity [= consciousness] is merely one with my existence as a body and with the existence of the world, and because the subject that I am, when taken concretely, is inseparable from this body and this world (Merleau Ponty, 2012, p. 408 in Smith, 2013, p.n.p).

As my own exploratory research project has evolved, its transdisciplinary nature required

## References

- Anon (n.d.) [www.reimaginingbirth.com](http://www.reimaginingbirth.com/) [online]. Available from: <http://www.reimaginingbirth.com/> (Accessed 20 April 2016).
- Betsky, A. (2015) The Evolving Landscape of Architectural Affordances [online]. Available from: [http://www.architectmagazine.com/design/culture/the-evolving-landscape-of-architectural-affordances\\_o](http://www.architectmagazine.com/design/culture/the-evolving-landscape-of-architectural-affordances_o) (Accessed 19 April 2016).
- Bachelard, G. (1969) *The poetics of space*. Boston: Beacon Press.
- Balabanoff, D. (2011) ‘Aspects of Light: Colour, Form and Space/FormTime’, in *Proceedings of the Midterm Meeting of the International Colour Association (AIC)*, June 2011 Zurich University of the Arts, Switzerland: AIC. p. [online]. Available from: <http://www.aic2011.org/proceedings.php>.
- Carman, T. (1999) *The Body in Husserl and Merleau-Ponty*. *Philosophical Topics*. 27 (2).
- Davis-Floyd, R. E. (2004) *Birth as an American Rite of Passage: Second Edition*. 2nd edition. University of California Press.
- Dotov, D. G. et al. (2012) Understanding affordances: history and contemporary development of Gibson’s central concept. *Avant*. III (2), 35–36.
- Gibson, J.J. (1979) *The ecological approach to visual perception*. Boston: Houghton Mifflin.
- Heft, H. (2001) *Ecological psychology in context: James Gibson, Roger Barker, and the legacy of William James’s radical empiricism*. Mahwah, N.J.: L. Erlbaum.
- Lakoff, G. (1999) *Philosophy In The Flesh*. Revised ed. edition. Basic Books.
- Lattanzi, M. (1998) *Transdisciplinarity*.
- Mallgrave, H. F. (2013) *Architecture and Embodiment: The Implications of the New Sciences and Humanities for Design*. London ; New York: Routledge.
- Merleau-Ponty, M. (2002) *Phenomenology of Perception*. Psychology Press.
- Merleau-Ponty, M. & Lefort, C. (1968) *The visible and the invisible; followed by working notes*. Evanston [Ill.]: Northwestern University Press.
- Merleau-Ponty, M. & Smith, C. (2015) *Phenomenology of perception*.
- Nesbitt, K. (ed.) (1996) *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965 - 1995*. 2nd edition. Princeton Architectural Press.
- Norman, D. (2015) *Affordances: Commentary on the Special Issue of AI EDAM. Artificial Intelligence for Engineering Design, Analysis and Manufacturing*. [Online] 29 (Special Issue 03), 235–238.
- Robinson, S. & Pallasmaa, J. (eds.) (2015) *Mind in architecture: neuroscience, embodiment, and the future of design*.
- Sanders, J. T. (1993) *Merleau-Ponty, Gibson and the Materiality of Meaning*. *Man and World*. 26 (3), 287–302.
- Seamon, D. & Zajonc, A. (1998) *Goethe’s way of science: a phenomenology of nature*. Albany, NY: State University of New York Press.
- Smith, D. W. (2013) ‘Phenomenology’, in Edward N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy*. Winter 2013 p. [online]. Available from: <http://plato.stanford.edu/archives/win2013/entries/phenomenology/> (Accessed 19 April 2016).
- Turrell, J. (2013) James Turrell June 19 2013. Facebook post. [JamesTurrell/Art](https://www.facebook.com/JamesTurrellArt/posts/671920959501226) [online]. Available from: <https://www.facebook.com/JamesTurrellArt/posts/671920959501226> (Accessed 14 November 2015). [online]. Available from: <https://www.facebook.com/JamesTurrellArt/posts/671920959501226> (Accessed 14 November 2015).
- Zevi, B. (1974) *Architecture as space: how to look at architecture*. New York: Horizon Press.

a delving into diverse fields. I have engaged with knowledge from many disciplines, including architecture, art, design, art history, aesthetics, midwifery, medicine, anthropology, biology, neuroscience, epigenetics, aesthetics, existential phenomenological philosophy, environmental psychology, and more. As I have proceeded, E.O. Wilson's concept of consilience (*'unity of knowledge'*) (E.O. Wilson, 1998), and which transdisciplinary theorists embrace, has become important to my approach.

Of course, architecture is by its nature an interdisciplinary field, and as Kate Nesbitt (1996, p.28) has pointed out, architectural theory has, in one of its strains, developed along phenomenological lines, moving from an earlier focus on issues of physical site towards the body in environment. Though she does not mention Gibson and Merleau-Ponty, one can feel their ghostly presence in the following passage:

One aspect of this interdisciplinarity is the reliance of architectural theory on the philosophical method of inquiry known as phenomenology.... this philosophical thread underlies postmodern attitudes towards site, place, landscape... Recent theory has moved towards... the body's interaction with its environment. Visual, tactile, olfactory, and aural sensations are the visceral part of the reception of architecture, a medium distinguished by its three-dimensional presence.

In engaging with the writings of Merleau-Ponty and Gibson, one finds issues that have provoked much debate in the fields of psychology, but also in industrial design, interaction design and further applied fields. Mentioned in the same breath by many – e.g. Sanders (1993), Heft (2001); Carman (1999); Dotov et al(2012) –Gibson and Merleau-Ponty are evoked often in discussions concerning *'embodiment'* and *'affordance'*. Donald Norman has recently commented on the *'separate lives'* Gibson's concept of affordance leads contemporaneously in diverse fields (including ecological psychology, design, and engineering design), and noted that a *'comprehensive'* overview by Dotov et al (2012) ignores the work outside of their own field of perceptual and ecological psychology (Norman, 2015). We should note that architecture is not mentioned by

Norman in the list of disciplines discussing affordance – while a recent article by Aaron Betsky (2015) calls it the new *'buzzword'* in architecture schools and firms alike. Certainly architecture has been engaging with concepts of embodiment (if not the idea of *'affordance'*) for some time, and there will be more discussion and development in the future – see, for example, Mallgrave (2013), Robinson & Pallasmaa (2015).

As Dotov et al (2012, p.35-36) have noted, Gibson and Merleau Ponty have been noted as *'similar'*...in regards to the concept of *'reciprocity'* between perceiver and environment that comes into play within existential philosophy, Gestalt psychology and Gibsonian ecological perception theory.

The similarity between Gibson and Martin Heidegger and Maurice-Merleau-Ponty has been pointed out a number of times (Dreyfus 1996; Heft 2001; Kadar & Effken 1994). Compare their ways of bridging the subject-object divide: *"An affordance is neither an objective property nor a subjective property; or it is both if you like"* (Gibson 1979: 129) and *"Perceivedness ... is in a certain way objective, in a certain way subjective, yet neither of the two"* (Heidegger 1982: 314).

The *umwelten*, the perceiver-centered animal-relative worlds of von Uexküll (1957), also converge with Gibson's thinking—more specifically with the way an affordance-structure defines an animal's niche (Chemero 2009). We do not know if Gibson was familiar with von Uexküll's work but both Merleau-Ponty and Heidegger read von Uexküll, and Gibson was familiar with Merleau-Ponty (Heft 2001: 161). There are several other theorists whose ideas were closely related to Gibson's affordance concept but who were representationalists. These include Egon Brunswik and the Gestalt psychologists.

Taylor Carman (1999, pp.221–222) accurately highlights the consilience between Merleau-Ponty and Gibson in their understanding of the body as a *"permanent structure of perception"*....Merleau-Ponty's thick conception of perceptual agency already implicates the body in all perceptual acts. Our ongoing background perception of our own bodies is nothing like an object-directed awareness focused on any of its distinct parts, as for example when we locate tactile sensations

on our skin or in our joints. Our sense of embodiment is bound up instead with a primitive understanding of the body as a global and abiding horizon of perceptual experience. For Merleau-Ponty, my body simply “is my point of view on the world” (PP, 70).

The body, then, is a permanent structure of perception, over and beyond the peculiar features of any one of the five traditionally differentiated senses. Indeed, as J.J. Gibson has argued in his “ecological” theory of perception, all the senses play a role in the combination of kinesthesia and perception of external objects, that is, between proprioception and exteroception: “Proprioception or self-sensitivity is seen to be an overall function, common to all systems, not a special sense”. Like Gibson, for example, Merleau-Ponty insists that “all the senses are spatial, if they are to give us access to some form or other of being, if, that is, they are senses at all” (PP, 217). Perception is holistic, and the body’s background self-awareness is one of its permanent horizons: “External perception and the perception of one’s own body vary in conjunction because they are the two facets of one and the same act” (PP, 205).

My interest, however, in the two theorists, lies in a deeper specificity. I have sought to follow their thoughts on light (light/darkness/colour), which I have not seen comprehensively gathered, or discussed together in any depth, with specific reference to architectural theory or practice. The term ‘gathered’ is apropos, particularly in the case of Merleau-Ponty, as his observations on light (and discussion of psychological studies on perception) are interspersed throughout his work. I have found (in their writings) what I believe is an important discussion for architecture today...about the role light (light/colour/ darkness) plays in embodied and lived experience in architecture.

As noted earlier, through my own practice-based research findings, I have found, over time, conceptual understandings that are in alignment with the ideas about light expressed by these two thinkers...and that support my doctoral thesis that light itself can be a potent affordance and, therefore, a valuable formative driver of a re-imagined architecture for birth. What I mean by this will be clarified at the end of the article.

I begin the discussion with a concise list of ‘points of consilience’ between Gibson and

“a transcendent feature of the universe or of disembodied mind.” Rather, it is “shaped crucially by the peculiarities of our human bodies, by the remarkable details of the neural structure of our brains, and by the specifics of our everyday functioning in the world”.

Merleau-Ponty → I have distilled these from my own comparison of their key concepts. Section 2 introduces light as an aspect of ‘embodied experience’ as thematically explored in/through the two theorists’ works. Section 3 concludes with a condensation of my preliminary understandings relevant to architectural/environmental design in general, and birthspace as a particular special case.

### 1. Ecological and Phenomenological

#### Perception: Points of Consilience

It is useful, I propose, to begin from a position of understanding that underscores the consilience between Gibson (1979) and Merleau-Ponty (2015; 1968). Therefore, I have prepared the following list that I believe captures the key points relevant to this discussion, and that concerns perception, perceiver and environment/world.

Both theorists consistently:

- 1) rejected ‘non-aliveness’, or a mechanical view of the world

- 2) argued against reductivist/dualist models of human perception
- 3) opposed the concept of abstract space (of physics) as the ‘map’ that can situate our ‘place’, our ‘here’
- 4) asserted that the agency of the perceiver-in-motion is crucial to embodied experience
- 5) proposed a deep reciprocity between perceiver and environment
- 6) posited that our body/perceptual system evolved with/through nature, and hence directly understands nature’s environmental visual/sensory ‘language’
- 7) found that ‘mobility’ in space was fundamental to ‘perception’.

From this strong common grounding that underscores the interrelationship of person and environment, we can begin to address a topic that is as yet invisible in the list.... light. By light, I should clarify, I mean, always, the inseparable trio light/darkness/colour. They are as inseparable as mind and

body, though like mind/body, they are often studied separately.

## 2. Light and Embodied Experience

Cosmicity: A first principle about light and space/place is the cosmological. I make the point to my students that each building site in the world is unique in its relationship to the sun, and in the opportunities that this situation holds for making architectural experience that situates us in the world/the cosmos. Further, quantum physicist Arthur Zajonc reminds us that light is invisible, until we put something in its way. Only then do we see light (cite). This important conceptual understanding is, or I suggest, ought to be, at the heart of architecture and the making of human experience in architecture.

Light gives to us our largest-scale sense of place. An important artist of our time whose work has centered on colour and light, James Turrell (2013) speaks of our *'being in space'* – in the cosmos...he notes that this fundamental awareness is diminished by nighttime urban lighting. Gaston Bachelard, author of the acclaimed text *The Poetics of Space*, writing in the same decade as Gibson and Merleau Ponty, lamented our loss of *'cosmicity'* in the urban life of his time (1969, pp.26–27). We have moved much further in this direction since he mentioned the problem.

For Gibson, an overarching aspect of light is this provision of cosmic orientation. Gibson describes the three key elements of our environment – the medium, surface and substance. *'The medium'* – the air/water in which earth's creatures move, *"has an intrinsic polarity of up and down"* – light comes from above, gravity pulls downwards. Our world has an *'absolute axis'* of reference, the vertical axis. Unlike the *'space'* of physics: *"Even the two horizontal axes of reference are not wholly arbitrary, for they depend on sunrise and sunset"* (1979, pp.26–27). Gibson reminds us, too, of the *"moving source of illumination"* built into our perceptual system: *The motion of the sun across the sky from sunrise to sunset has been for countless millions of years a basic regularity of nature. It is a fact of ecological optics and a condition of the evolution of the eye in terrestrial animals. But its importance for the theory of vision has not been fully recognised....*(1979, p.87).

This, of course, is not something we can discover in a laboratory. And our ideas about

lighting the built environment have come closer to a laboratory concept of human perception – where a subject *'waits for'* something to happen, and then we capture their response... we have been focused, for many years, on lighting rooms and spaces with *'even'* and measurable light - working from a static/controlled notion of space/time.

Gibson describes our experience of symmetry in the pattern of light and dark in which we live: *...all the surfaces that were lighted in the morning will be shaded in the afternoon, and those that were shaded in the morning will be lighted in the afternoon. There is a continual, if slow, process of change from lighted to shaded on certain slopes of the layout and the reverse change on certain other slopes. These slopes are related by orientation* (1979, p.87, my emphasis).

Merleau-Ponty, by contrast, uses theatrical lighting as his metaphor for our intrinsic experience of light (still noting the richness and play of shadow and light, tracing out or making visible what we shall see at any given moment): *If I imagine a theatre with no audience in which the curtain rises upon illuminated scenery, I have the impression that the spectacle is in itself visible or ready to be seen, and that the light which probes the back and foreground, accentuating the shadows and permeating the scene through and through, in a way anticipates our vision...by those paths traced out for it by the lighting...* (Merleau-Ponty, 2002, p.276, my emphasis).

He observes the infrastructural synchronicity of body and environment, facilitated through what he calls the gaze – our engaged perception in the world:

*Perception presupposes in us an apparatus capable of responding to the promptings of light...of concentrating diffuse visibility and completing what is merely foreshadowed in the spectacle. This apparatus is the gaze...the natural correlation [between what we see and do]...experienced as the involvement of our body in the typical structures of a world* (2002, p.276, my emphasis).

## Light and the self

Gibson coins the term *'affordance'* to capture the notion that environmental conditions facilitate our capacities for action. Our perception, he says, is grounded in the body's specific form (the human body is bi-pedal,

bi-symmetrical, vertical, with a swivelling head/neck, and two eyes). We are made for perception in motion, and the ‘*visual array*,’ the light-facilitated cone of our visual field moves with us (1979, p.183).

Proprioception (self-awareness) is another key feature of Gibson’s perceiver – we see ourselves in the picture, always – we can see our hands, our noses, our feet, etc. Light facilitates this capacity to see ourselves, fundamentally, as part of our environment. Interestingly, for Merleau-Ponty, light is affiliated with our visible, spatially situated self, and bodily space is understood as ‘*darkness*’ – that ‘*interiority*’ that we cannot see (2002, p.32) – similar, he says, to the darkness needed in the theatre “to show up the performance...” Darkness is “the background of somnolence... against which the gesture and its aim stand out, [in which] precise beings, figures and points can come to light”. Here he is referencing not only the darkness of the audience-as-self, but of the dark stage before the objects and surfaces within it are lit.

Gibson describes nature as an ecological world in which there are ‘*nested*’ spaces (worlds into which we ‘*fit*’ well, made for us through natural processes over deep time). Darkened spaces, for Gibson, suggest protective ‘*niches*’ in an animal’s territory, where he/she can see from, but cannot not be seen. The ‘*enclosed*’ nature of darkness (how else do we create it architecturally?) means that darkness, privacy and intimacy are deeply connected (1979, pp.120–128). One is reminded of the embodied beauty of the interior of a bird’s nest, formed, in the end, by the bird’s body itself.

### Light and Constancy

Light and ‘*constancy*’ are inseparable aspects of perceptual understanding. ‘*Constancy*’ is the term in perceptual theories that refers to our recognition of the ‘*sameness*’ of something despite ‘*differing*’ conditions – e.g. the ‘*whiteness*’ of a piece of paper in diverse lighting conditions. Perceptual constancy applies across various areas of visual experience, and provides consistency and reliability – our capacity to recognise similarities, to find the world ‘*familiar*’.

In the introduction to Merleau-Ponty’s last, posthumously published work, *The Visible and the Invisible* (Merleau-Ponty and Lefort,

1968, p.L), translator Alphonso Lingis points to the resonant implications of ‘*constancy*’ for Merleau-Ponty’s study of lived experience. Constancy can be understood as the unity we experience in the world, in which variety is always implicit. He says: “*Perception is not first perception of things, but perception of elements...which are dimensions, which are worlds ...Once we have understood that the thing is a dimensional this, we [understand] that the vision of the rose is already an introduction into rosiness, into the species rose, into a family of like beings*” (p. 174)...to be introduced into a style of visible being is already to be introduced to the pregnancy of that style. And pregnancy, Merleau-Ponty tells us, means not only typicality, but also productivity, or generativity.

For both Merleau-Ponty and Gibson, constancy is the unity required for the variety that (invariably) accompanies it. The terms Gibson uses are Invariance and Variance. In describing the opportunities given to us by ‘*the medium*’ or ‘*ether*’ in which we live/move, Gibson lists six ‘*invariant*’ affordances – what we are enabled to do (all but the first related to light) : 1) respiration (breathing) 2) locomotion (movement) 3) illumination (seeing) 4) vibrations and emanations (sound, smell) 5) homogeneity (solidity of material) 6) vertical axis of reference (orientation). Implicit in all these ‘*invariants*’ (things we can count on) is the idea that ‘*variance*’ exists within them; and this ‘*changeability*’ is built into our agile and yet always situated perceptual system. As we actively engage in our ‘*tasks of survival*’, illumination, from any point within the medium, provides an ‘*ambient array*’ which serves our ‘*navigational system*’ with information (both variant and invariant), refreshed moment by moment (1979, pp.16–17).

In his own ‘*systems*’ approach, Merleau-Ponty (2002, pp.279–80) tells us that there are three co-existing elements of ‘*colour/light constancy*’. They are: 1) the lighting, 2) the ‘*organisation of the field*’ as our body contrives it, and 3) the thing illuminated in its constancy. Merleau-Ponty notices that ‘*constancy of colour*’ is related to our immersion in surroundings (the field) – it only appears when we move close enough to what we are observing that it becomes an intimate part of our surroundings – that is, when we ‘*become one with it*’. Whatever the colour shift in ambient lighting (say

from daylight to incandescent light), our perceptual system uses ‘constancy’ to compensate for it, so that it becomes ‘neutral or normal’ (stabilised) in our close-up perception of the objects, surfaces, and substances in this localised environment:

The level [of ambient light] is laid down, and with it all the colour values dependent upon it, as soon as we begin to live in the prevailing atmosphere...Taking up our abode in a certain setting of colour, with the transposition which it entails, is a bodily operation, and I cannot effect it otherwise than by entering in to the new atmosphere, because my body is my general power of inhabiting all the environments which the world contains, the key to all those transpositions and equivalences which keep it constant (my emphasis).

The language here is succinct and emphatic: it is my body that is the ‘power’, the ‘key’ to constancy. But I have also emphasised the language here that repeatedly speaks of ‘taking up abode.’ “Lighting and the constancy of the thing illuminated,” says Merleau-Ponty, “...are directly dependent on our bodily situation” (2002, p.310). As we move into close range, we adjust...the environment adjusts, as it were. We become attuned to one another through coming together.

The ‘phenomenal body’, this body that knows, is invoked implicitly in the distinction between ‘lighting’ and ‘the thing lit’ (2002, p.278) – what we might call respectively the ambience in which we find ourselves and the light that illuminates a particular element in view: *...the object lighted stands out before us and confronts us. The lighting is neither colour nor, in itself, even light, it is anterior to the distinction between colours and luminosities. This is why it always tends to become ‘neutral’ for us. The penumbra in which we are becomes so natural that it is no longer even perceived as penumbra.* (emphasis in original)

The word ‘penumbra’ suggests a darkening... that is an interiority...we are in architectural space, in this reading, whether day or night. The point Merleau-Ponty makes may seem obscure – what is the ‘lighting’ if it is not ‘light’ – but the reminder is that there is an ambient condition present already, that qualitatively shifts our architectural experience and engagement, and that has

a foundational homogeneity. We bring our adjustment with us as we enter into a particular spatial setting and colour and light adjust with us.

### Light and Surface

Light/darkness/colour, as we have seen, cannot be separated from ‘environmental’ or ‘bodily’ orientation. But further, our relationship with light is mediated through the materiality of the world...that is, through light’s interactions with ‘surfaces’ and ‘substances.’

Merleau-Ponty describes “a topography unfolding by differentiation, by segregations [holding together] through the reflections, shadows, levels and horizons between things” (1968, p.160). For Gibson, this is a valid description of ecological perception: colour and texture, inseparables modulated and revealed by light, provide affordances for living in the world, passing on information about materiality that we understand... about “composition of the substance [as] important for survival, safety and wellbeing” (1979, pp.30–31).

Merleau-Ponty’s (2002, p.162) sense of embodied perception through surface/substance goes deeper, into psycho-physiological resonance. He tells us that perceiving colour, e.g. “mat red” is not first a ‘sensation’, and then a ‘motor reaction’ (a bodily feeling). It is rather “a power which is born into...a certain existential environment...” and this ‘synchronisation’ or ‘power’ that colour is in the body (that it offers, that we ‘lean into’) is likened to the way we fall asleep. One voluntarily prepares to sleep, and “suddenly it is as if my mouth were connected to some great lung outside myself which alternately calls forth and forces back my breath”. Similarly, he notes, “I surrender a part of my body, even my whole body, to this particular manner of vibrating and filling space known as blue or red”.

Again, in concert with Gibson, Merleau-Ponty (Ibid, pp.183–184) observes: “This red would literally not be the same if it were not the ‘woolly red’ of a carpet. Analysis, then, discovers in each quality meanings which reside in it.” He describes the interwoven relations between light, colour, materiality and perception in ways that Gibson would have appreciated:

“...each colour, in its inmost depths, is nothing but the inner structure of the thing overtly revealed. The brilliance of gold palpably holds out to us its homogenous composition... The senses intercommunicate by opening onto the structure of the thing. One sees the hardness and brittleness of glass, and when, with a tinkling sound, it breaks, this sound is conveyed by the visible glass. One sees the springiness of steel, the ductility of red-hot steel, the hardness of a plane blade, the softness of shavings. The form of objects is not their geometrical shape: it stands in a certain relation to their specific nature, and appeals to all our other senses as well as sight”.

Another finely-tuned observation of his comes very close to the Gibsonian ‘reading’ of environment...how affordances are communicated: “In the jerk of the twig from which a bird has just flown, we read its flexibility or elasticity, and it is thus that a branch of an apple-tree or a birch are immediately distinguishable” (2002, p.184).

### 3. Considerations for architectural design and implications for birthspace

The passage above shows the careful and extensive ‘empathic observation’ (Seamon and Zajonc, 1998) that both Merleau-Ponty and Gibson utilised in considering light in environment. I find that their sensitivity and insight into the structure and meaning of embodied experience has supported my own interest and research into light as a central aspect and affordance of the re-imagined birth experience. The following list offers a glimpse of the concepts emerging from my practice-based research that are connected with the ideas expressed in the work:

- 1) Materiality is meaningful – not simply as visual aesthetics but as fully embodied experiential information, for communicating affordances provided in a given space
- 2) Colour and textural properties are not separable, the resonance is in the colour as deeply structural material understandings
- 3) Light (light/darkness/colour) should be used with awareness of the resonance/feeling it generates in the body
- 4) Colour/material/light interacting creates variety/aliveness and agency for action – that is, movement and sensory, bodily activation conducive to birth processes.

- 5) Light (natural light) provides fundamental orientation and deep familiarity through the body, through the moving body
- 6) Agency, personal intentionality, is at the heart of embodied perception, and light is implicated.

I conclude with the thought, which requires further elaboration (forthcoming) that the design approaches we choose to utilise for reimagining birthspace should be concerned with both deeply felt orientation and sensitive empowerment of action... and that light can play an important role in providing these. Movement, situated agency, a sense of belonging, temporal experience, the body, and sense of place and light are inseparably interwoven. If we can find these understandings valuable for birthspace, then we can also find them useful for furthering the ways in which human needs and desires can be addressed through phenomenologically sensitive architectural design.