Embodiment and the experience of built space: the contributions of Merleau-Ponty and Don Ihde[1]

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Abstract

This paper explores the problem of how we perceive built space and the ways that we relate to its abstract representations. Poincaré presented the problem that space poses for the 20th century in his essay 'The Relativity of Space', in which the human body and technics are already a part of our spatial perceptions. Merleau-Ponty, the "philosopher of the body", and Don Ihde, a philosopher of technology, ground their work on the phenomenology of Edmund Husserl and Martin Heidegger (to different degrees). For Merleau-Ponty, our primordial perception is general, pre-reflective, and ambiguous. One's own body (body-subject) is the means of having an already inter-subjective world. Merleau-Ponty explicates our irreducible relation to the world by showing that bodily motility, the spatiality of one's body, and habit acquisition inform our spatial experiences, as well as the syntheses of our perceptions and the unity of the world. Merleau-Ponty describes the constitution of embodiment relations (by means of habit acquisition) with artefacts that mediate our interaction and perceptions in the world. Ihde poses his intentional human-technology (artefactual) relations that transform our perceptions of the world and ourselves. These relations are ever-present in our everyday lifeworld of which built space forms the background or foreground of our projects and actions. In this paper, I provide a phenomenological explication of a specific space to test how both philosophers' work compare to and/or supplement each other.

1. Background

1.1 The problem of space: tension between theory and practice

Space, as a notion that simultaneously effects and affects our everyday lives, has perhaps never been as apparent in both academic and professional practices as in the last few years. In addition,…this new multidimensional spatial discipline will only increase its presence in our daily discourse….Space has been at the forefront of almost every major discovery starting from Isaac Newton's witnessing the force of gravity through the falling of an apple, until Alexander

Graham Bell's path to the telephone. However, throughout this historical devel-
opment, space remained within a Cartesian paradigm.(Vollebregt 2005: 1)

The substantial difference between how we experience lived built space in our every-
day lives and how we conceive of built space when we 'read' the representation of
lived space on orthogonal graphic projections, such as plans or maps, is problematic.
The tension between geometry and lived space is a well-researched theme in contem-
porary social and natural sciences and ranges from urban design to social and natural
geography, sociology, politics, environmental design and behaviour, architecture and
philosophy. David Seamon, Kimberley Dovey, Henri Lefebre[2], Ed Casey, E. Relph, to
name a few amongst many others, have published extensively on the conception and
perception of space, architectural spatial qualities, the ontological and metaphysical
aspects of place, and the difference between space and place.

In 1897, Henri Poincaré presented the problem of space for the twentieth century in
his text *The Relativity of Space*:

[t]here is no direct intuition of magnitude…, we can only arrive at the relation
of the magnitude to our measuring instruments. Accordingly, we could not
have constructed space if we had not had an instrument for measuring
it….[T]hat instrument to which we refer everything, which we use instinc-
tively, is our own body….that serves us…as a system of axes of co-ordinates.
(Poincaré 1897: 5)

Poincaré (Ibid: 13) believed that we have created the space that is the subject of geom-
etry studies and which we have adopted for our lifeworld. This aspect leads me to the
question, if geometry is to be considered as part of our lifeworld, why is the translation
between lived space and geometrical space difficult, and why do we have to under-
stand the phenomenon of lived space if it basically and intrinsically is part of our exis-
tence? In order to unpack this explication, let us focus on the important point of
Poincaré's essay, namely, that we use our body as an instrument of measurement in or-
der to ascertain distances and sizes relative to our body.

Here we have two important aspects of how we relate to space: space is experienced
by means of our embodiment; and it is natural to think of the magnitude of (built)
space in terms of sizes and distances which implies some form of technics of measure-
ment in order to relate it to ourselves. These two aspects directed my enquiry towards
the philosopher of the lived body and perception, Maurice Merleau-Ponty (1908-1961)
and the philosopher of technology, Don Ihde (1934-) who specifically focused on hu-
man-technology relations in the lifeworld.

1.2 Process and method

In this paper, I relate the body as explicated by Merleau-Ponty to our technologically
mediated perception of our lifeworld as explicated by Ihde, in order to see the extent
in which it can shed new light on our perceptions and experience of built space. I com-
bine Merleau-Ponty's explications of bodily spatiality, habit, and spatial perception
with Ihde's concept of the structures of human-technology relations in our experiences
in and of the world after which I test the combination of both phenomenologists' work

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2   Although a very influential work, Henri Lefebre's text *The production of space* (1979), is not fur-
     ther referred to in this paper because the focus in this paper is on lived bodily spatial experiences and
     the structures thereof rather than Lefebre's third person approach to spatial practices and underlying
     techniques of spatial production in its various manifestations.

by means of a phenomenological explication applied to a specific example. Phenom-
enology as a method enables us to access and understand the problem as set out above,
as Dovey writes, 'Phenomenology entails a critical distinction between lived-space
and geometric space, between the experience of place and the geometric simulations
that are a means to its effective transformation.' (Paraphrased by Seamon 2000:
22-23).

1.3 The phenomenological method

Edmund Husserl, the founder of the phenomenological method and movement, set out
to establish a way in which philosophy could be practiced as a (presuppositionless)
'rigorous, eidetic science' (Moran 2000: 126,132; Bakker 1977: 82). Husserl was cer-
tain that phenomenology provided the way to 'return to the things themselves'. Phe-
nomenology holds that consciousness is always directed at something – in other
words, consciousness is intentional. To do phenomenology, we should apply a set of
procedures which Husserl called the 'reduction': we should 'suspend' our pre-concep-
tions (and naive 'taken for granted' views) of the evidence of the natural world. By ap-
plying the phenomenological reduction of which the *epochē* forms part – through re-
flection we could describe the essential structures of the object that we intended
(*noēma* or 'what is thought') as well as our intending consciousness (*noesis* or 'act of
thinking') as correlative parts of the structures of the mental process. (Moran 2000:
151,154,155).

   Despite its worldwide influence, Hussel's phenomenology has been criticised for be-
ing transcendental and idealistic. The recent 'internalist-externalist' debate on
Husserl's concept of intentionality has been refuted by Dan Zahavi's argument that
Husserl's phenomenology – especially his concept of intentionality – has largely been
misunderstood: Husserl's concept of intentionality should not stand on its own nor be
interpreted without taking his transcendental-philosophical theory of reduction and
constitution into consideration. (Zahavi 2004: 57).

   Zahavi also believes that Husserl-research has shown that Merleau-Ponty's interpre-
tation of Husserl's work is well founded; that Merleau-Ponty could articulate
Husserl's 'unthought thought' and his reading of Husserl was ahead of its time. '[T]o
a large extent [Merleau-Ponty's interpretation of Husserl's texts] anticipated results
that have only much more recently been confirmed by Husserl-scholarship.' (Zahavi
2004: 64).

   Merleau-Ponty viewed phenomenology as a 'practice' (and not a fixed system to ex-
amine 'things' or our relation to 'things') that enables one to examine the relation be-
tween consciousness and nature. Put differently, phenomenology enables us to exam-
ine our lived experiences. Consciousness for Merleau-Ponty is a 'presence of our-
selves to ourselves' before any philosophy begins (*PP*: xiv, 403-404). Most impor-
tantly, our body is our *incarnated consciousness* that is (pre-reflectively) directed and
open towards the world with which our body forms an inextricable unity. (*PrP*: 5).

   Hence, it is only on condition of the *tacit cogito* that inter-subjectivity is made possi-
ble. (*PP*: xiii). Furthermore, one should regard the reflective experience as a 'creative
operation' that partakes in the facticity of that experience. Merleau-Ponty says that it is
for this reason that phenomenology refers to a 'transcendental *field*'; this term indi-
cates that reflection is partial and of limited power because it cannot hold the whole
world at a glance. Phenomenology is thus a study of the *advent* of being into con-
sciousness, instead of presuming its possibility as given in advance, and therefore, 're-

flection can never make me stop seeing [the sun] 'rise' and 'set', or thinking with the cultural apparatus with which my education, my previous efforts, my personal history, have provided me.' (*PP*: 61, Merleau-Ponty's italics).

Let us move to Don Ihde's appropriation of the phenomenology of Husserl, Heidegger and Merleau-Ponty and its development into a pragmatic method called 'post-phenomenology'.

1.4 Ihde's 'post-phenomenology'

Ihde's main enquiry is on the nature of the mediating role that technology plays in the human – world relation; to determine what kinds of lifeworlds are made possible by different means of technologies and how technology mediates or transforms our perceptions of ourselves and of our lifeworlds.

Ihde's hybrid method differs from the classical conception of phenomenology in the sense that he adapts Merleau-Ponty's notion of the body-subject and Husserl's 'ego' to 'human embodiment' (to steer away from Cartesian philosophical dualist connotations). Ihde 'expands' the concept of hermeneutics to include the interpretation (by machines) of naturally invisible phenomena to 'convert' it into perceivable phenomena for human interpretation. Furthermore, Ihde bases his method on applied 'practice', especially in scientific research and development. Ihde combines his interpretation of Merleau-Ponty's body-subject (which Ihde calls 'body one') with the Foucauldian notion of an objectified body on which political power is exerted (Ihde's 'body two', viewed from a third person point of view); 'body two' is also a cultural view of bodies as gendered. (*PT*: 1-25). [3]

For Ihde, technologically mediated perception[4] is based on a praxis philosophical stance. The 'ways of access' or mediation by means of technology differ in the manner in which we relate and engage with technology. Ihde examines these different ways of access to reality (through technology) as variations[5] on the basic structural relation between humans and machines in terms of the Husserl-Heidegger intentionality correlation

<div align="center">Human ⇔ World</div>

It will become clear in the following section that primordial bodily spatiality is the origin of space. Since this is a major aspect in perception and our active engaging with the world, one would expect Ihde to develop his human-technology relational structure to include a theory of space and/or spatial perception (direct or mediated through technology) or at least to elaborate on how the primordial body-world intentional structure

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3   Ihde's concept of 'body one' and 'body two' is quite a late variation to his preceding work; these notions are built onto his concept of micro- and macroperception. The difference is the addition of arguments that show the interplay between technology and politics, ecology, ethics and gender to his concept of 'macroperception', which he now calls 'body two'. Ihde's concept of 'micro- and macroperception' assumes embodied human beings in the world as part of and co-creating the inter-subjective cultural world that is equally part of the lifeworld. The lifeworld as explicated by Husserl and especially Merleau-Ponty, naturally implies politics, ecology, etc. Therefore, Ihde's decision to use 'body one' and 'body two' in combination with 'micro- and macroperception' is in my view duplication. The terminology 'body one' and 'body two' might be misleading: we must remember that perception is not a passive event; body one and body two are both active in perception.

4   Cf. Embree 2010: 1-11. I think Embree's term 'indirect encountering' should include Ihde's notion of technologically mediated perception.

5   As explicated in *TP*, Ch. 1-4; *ET*, Ch. 3,5,7 & 9 and *TL*, Ch. 4-6.

and innate spatiality is mediated by technology. Nevertheless, Ihde's view is that spatial perception is a cultural phenomenon, which strongly relates to Henri Lefebre's conceptions and explications of spatial practices. Let us see how the Merleau-Ponty-Ihde combination enables us to understand our experiences in and of the built environment.

2. The body

2.1 The spatiality of the body and habit

The implications of the notion of my body 'as my own' were identified and developed by Merleau-Ponty, along with aspects of Husserl's philosophy such as the differentiation between the 'lived body' (*Leib*) and the objective body (*Körper*), which lead to Merleau-Ponty's development of the 'body-subject' in *PP* and *N*. His notion of the body-subject as irreducibly entwined with the world reflected Merleau-Ponty's effort to move beyond a purely psychological (idealist) or a physiological (empiricist) view of the body. Rather, the physical and psychical 'gear into each other' (*PP*: 77), which Merleau-Ponty explicates by means of his studies of pathological behaviour. Here he showed that a person's 'intentional arc' is the place whereby personal projections and biological life (which he terms 'layers', 'modalities' and 'folds' of embodied experience) intersect. In *PP*, Merleau-Ponty uses various terms to describe these interacting layers or twofold modalities: the habitual body and the personal body, the customary and the body at this moment, the biological and personal existence, the organic and the existential (*PP*: 82, 84, 87, 130). In short, my habitual body guarantees my body at this moment.

Casey describes Merleau-Ponty's philosophy as a philosophy of depths of two kinds: the depth of the body itself in thought and habit, and the depth that the past supplies to anchor our temporal being. These kinds of depth are grounded in the world by means of our bodies. Merleau-Ponty posits that we cultivate habits and that this cultivation causes a renewed or changed body schema (*PP*: 142), as well as a bodily understanding of its significance. Motor habit throws light on the nature of bodily space, which means that generally a habit lets us understand the general synthesis of the body. Thus, every motor habit is equally a perceptual habit (*PP*: 152). For the body to understand 'is to experience the harmony between what we aim at and what is given….the body is our anchorage in the world'. Merleau-Ponty describes habit also as 'a knowledge bred of familiarity', and 'sedimentation' (*PP*: 144,130,441).

'Sedimentation' is described by Merleau-Ponty especially in relation to language and history. In *PW* (110), Merleau-Ponty writes: 'Man feels at *home* in language….'. This metaphor of dwelling is a phenomenological concept that indicates our familiarity and acquaintance with the world. [6]If the world is perceived as the theatre of our patterns of behaviour, our bodies must possess stable organs and pre-established circuits

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6   The notion of 'habitus' as worked out by Wolff (2010b) is applicable to what I believe Merleau-Ponty means by 'dwelling' and 'inhabiting'. Wolff (2010b: 10) writes:'*Habitus* is the bodily, pre-reflective, pre-predicative mode of existence of 'I can' (Merleau-Ponty). *I can* is the way in which the body is familiar with the *world* – familiarity in a non-intellectual, non-consciousness-centred way, but without excluding the consciousness; *I can* means having to do with matters in such a way that a horizon of familiarity takes form, not only in my consciousness, but in my action. The metaphor used in phenomenology to describe this acquaintedness by my very being in the world, is dwelling. The *dwelling*-metaphor helps me to illustrate what this technical prefiguration or pre-understanding is like: it is familiarity or socially and symbolically (culturally) formed know-how. For example, my acquaintedness with my

(habit acquisition is a condition) in order to 'acquire the mental and practical space which will theoretically free [us] from [our] environment' to allow for reflection' (*PP*: 87).

Sedimentation implies bringing the past into the present in order for it to be constantly renewed, and memory is our intentional threads from the horizon of our past that are brought into the present (*PP*: 86). For Merleau-Ponty, the synthesis of time and space is a task that one's body always has to perform 'afresh'. Casey (1984: 287) describes 'habitual body memory' as combining permanence with temporality, perception with motor action and self with world. Casey refers here to a form of being that Merleau-Ponty describes in *PP*, namely 'near-presence' or 'ambivalent presence'. This form of being is similar to virtuality, as illustrated in the horizon, in things situated behind me, or the phantom limb. These call for 'a middle term between presence and absence', and all these forms of being inhabit the phenomenal field through the lived body that situates us in the field. Casey (1984: 287) sums up this idea as follows: 'This body is therefore a 'habitual body' or 'virtual body' which acts to guarantee the actions of my merely momentary body while enlivening my strictly customary body.' Therefore, there is a mediating force situated in the body, which itself is conceived as 'the mediator of a world' (Casey 1984: 287).

Being a mediation of the world, one's body 'understands' its practical and imagined worlds. The body projects a cultural world by making and using technical objects and has the power to communicate and think on the literal and figurative levels. Finally, the body creates and uses symbols to mediate the social world (Wolff 2010a:4). Merleau-Ponty illustrates the roles that the lived body plays in habit in three ways.

Firstly, my bodily space is 'the matrix of [my] habitual action [and is] an objective setting; [my] body is at [my] disposal as a means of ingress into a familiar surrounding… [and my body is also] the means of expression of a free spatial thought' (*PP*: 104). Merleau-Ponty refers here to the habitual and spontaneous body and to symbolic and concrete space.

Secondly, my body also expresses habits through gestures: '…thought and expression…are simultaneously constituted, when our cultural store is put to the service of this unknown law, as our body suddenly lends itself to some new gesture in the formation of habit. The spoken word is a genuine gesture…'(*PP*: 183). In the last pages of *The Visible and the Invisible* ([1969] 2000), Merleau-Ponty attempts to show how the perceiving human body as structured for potential future action is 'structured as language'. (PrP: 201,205).[7]

Thirdly, our body gives to our life 'the form of generality, and develops our personal acts into stable dispositional tendencies' that constitute our individual styles (*PP*: 146,147).[8] Our body 'at all levels performs the same function which is to endow the instantaneous expressions of spontaneity with 'a little renewable action and independent existence.

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shower (of opening the tap, locating the soap, standing without slipping, etc) is just one element out of a whole bodily 'vocabulary' or 'semantics' of the kind of action that would be possible for me as agent.'

7   Notably the idea that a language is about differentiating between signs and 'thereby constructing a linguistic universe'; that the signs themselves do not have meaning unless they are related to other signs. The meaning of signs therefore lies in their differentiation from other signs that form a system (Matthews, 2002:17). Structuralism falls outside the scope of this paper.

8   This stable disposition is what Bordieu calls *habitus* (cf. Wolff 2010a), which Bourdieu ([1972] 1977:78) defines as that which produces individual and social practices; which is 'the product of his-

Habit is…a form of this fundamental power' (*PP*: 146). Consider the woman with the feather in her hat, who automatically, without any calculation, keeps a safe distance from things that might break off the feather. Merleau-Ponty says she feels where her feather is just as we feel where our hand is, and she automatically incorporates the feather into her body *schema*. The hat has 'ceased to be [an] object with a size and volume which is established by comparison with other objects. [It has] become [a] potentiality of volume, the demand for a certain amount of free space' (*PP*: 143).

The blind man's stick has also ceased to be an object for him because it is not perceived as a thing in-itself. 'Its point has become an area of sensitivity', almost as if his senses have extended to the tip of his stick and almost as if the tip of his stick has replaced a biological organ of seeing with feeling. (*PP*: 143). The handling of the stick in order to find one's way amongst things is an acquired motor habit and equally an example of perceptual habit (*PP*: 152). The stick becomes an instrument with which the blind person perceives; the 'hand-stick point of exchange of forces' are replaced by the tip of the stick-world points of exchange between the perceiving body and world. Merleau-Ponty tells us that the stick becomes an extension of the body and is synthesised in the corporeal *schema*.

The blind man becomes acquainted with the way of using his stick as a result of testing the position of things that are immediately within the reach of his extended arm to the tip of his stick. However, there is no comparable estimation between the objective length of the stick and the objective distance to the goal to be reached (*PP*: 152), since he perceives the world 'directly' at the place where the stick and his hand meet.

Merleau-Ponty says that to 'get used to a hat….or a stick is to be transplanted into them, or conversely, to incorporate them into the bulk of our own body. Habit expresses our power of dilating our being in the world, or changing our existence by appropriating fresh instruments.' (*PP*: 143). 'It thus elucidates the nature of the body image. When we say that it presents us immediately with our bodily position, we do not mean, after the manner of empiricists, that it consists of a mosaic of 'extensive actions'. [The body image] is a system which is open on to the world and correlative with it' (*PP*: 143ff).

Brey (2000: 46-48) proposes that the blind man's cane and the woman with the feathered hat present two kinds of embodiment. The cane is indeed an example of an embodied artefact that extends a perceptual human faculty, while the example of the feathered hat is an example of the woman's tacit knowledge of the location of the feather in terms of her environment[9] and not an extension of a perceptual sense. I partly agree with Brey, however, that because the feather is incorporated into the woman's body *schema*, she has acquired a new style of movement. Because she has an innate knowledge of the spatiality of her own body (Brey 2000: 48), she would not bump against a doorframe with or without the feathered hat. Since the feather is incorporated into her bodily spatiality, the feather might just as well be a 'virtual' extension of her tactile sense.

tory, [the *habitus*] produces individual and collective practices, and hence history, in accordance with the schemes engendered by history'.

9   Brey (2000: 48) argues that there is tension in Ihde's work in terms of the different notions of embodiment relations that is to be resolved by returning to Merleau-Ponty's original account how embodiment relations are developed, and to serve as a proto-theory for an extended version of different kinds of embodiment relations which includes Ihde's notions thereof.

Brey adds that the woman does not perceive the world through the feather (as the blind man does through his cane), nor does she gain knowledge of the world in the form of direct feedback as mediated through the instrument. Thus, the primary function of the embodied artefact (feathered hat) is not to mediate perception (cf. Brey 2000: 46).

Artefacts that are incorporated into the body *schema*, such as a hammer or a pen, mediate interactive skills. Limited perceptual feedback from the environment is obtained (such as the texture of the paper one is writing on), since the artefacts' primary function is to act on the world (Brey 2000: 54),[10] while various artefacts in an embodiment relation mediate both perceptual and motor skills to function in an interactive manner. Merleau-Ponty's example of the blind man's cane is such an example: firstly, a motor skill is acquired in using the cane and through its skilled use; it withdraws as he learns to negotiate different floor surfaces, ramps and so on, which he can feel through the tip of the cane.

2.2 Mediation: Merleau-Ponty and Don Ihde

For Merleau-Ponty, our engagement with the world is mediated through our body's 'I can' (*PP*: 137), with or without the mediation of technological artefacts. This is where Ihde's explications of the different human-technology relations (as variations of the original intentional human-world structure) become an interesting addition to Merleau-Ponty's explications of habit acquisition.

It is important to note that Ihde's variations of the basic intentional structure laid out below, are invariant structures that apply to different cultures and contexts (cf. Eason 2003: 178).

The human – machine relation could be what Ihde terms an 'embodiment relation' (which I would rather term an 'embodied relation', since embodiment is by default our way of being-in-the-world), in which the artefact or machine is incorporated into the body *schema*, (exactly as Merleau-Ponty described the phenomena of the feathered hat, the blind man's cane and the organist) whilst extending one or more of the body's senses through which the world is directly perceived. The invariant aspects of the structure of the embodiment relation are that the artefact becomes partially transparent, that my experience is transformed in this relation and that, as Ihde says, a simultaneous sensory-extension-reduction relation occurs by means of the technology in use, for example, the telephone that extends the audible sense while reducing the other senses. Ihde's representation: 'Human-machine-World'.

The second variation in human-machine relations is the hermeneutic relation that requires an interpretation by the person within this relation. Hermeneutics, in philosophy, was initially applied to the social sciences, specifically, in the field of theological textual interpretation. Ihde claims to 'expand' Heidegger's notion of hermeneutics to include the domains of technology and of the natural sciences. For Heidegger, all human behaviour and action is hermeneutic (hence Wolff's claim that all technical relations are hermeneutic). However, Ihde's conception of hermeneutic technical relations

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10 In *PP* (152), Merleau-Ponty says: 'Learning to find one's way….with the stick, which [is] an example of a motor habit, is equally an example of perceptual habit. Once the stick has become a familiar instrument, the world of feelable things recedes, and now begins….at the end of the stick.'

in this instance differs from both in that the technical artefact is text-like[11]. Ihde's account of a technical hermeneutic relation shows that the perception ends with the machine because the machine interprets some aspect of the world, which is then relayed in some form (as text, symbols or codes). Examples of artefacts, where one engages in a hermeneutic relation, include reading a thermometer that depicts an aspect of the world such as outside temperature, or, reading a bathroom scale on which I stand. Therefore, no direct perception of the world takes place. Thus:

Human – (machine-world)

In turn, the user has to interpret the data in order to understand that aspect of the 'real' world that the machine interprets. The person's experience is of the machine itself. The complexity of these relations increases in Ihde's explications, especially in *TL* and *BT*, where he shows how, with the increasing complexities in technological advancements, the boundaries between humans and 'non-humans' or the 'other' (in alterity relations in which we interact with machines) become blurred by the use of metaphor.

What Ihde means by the term 'alterity' in terms of praxis include 'an analysis of the positive [experiential aspects outlining the relation of] humans [and] technology as relations to or with technologies, [moreover] to technology-as-other' (*TL*: 98,100). Ihde borrows the term from Levinas, but Ihde modifies it for his analysis of human-technology relations (*TL*: 98). In alterity relations, the technology becomes the 'quasi-other' or 'technology as other to which I relate' (*TL*: 107). The machine or artefact appears in front of the world, as if it is experienced as the world. In his diagram, Ihde places 'World' in parenthesis to indicate that technology (in these relations) is experienced as 'the other', albeit not as completely autonomous:

Human – technology -(-World).

Ihde refers to our technological environment as a 'technosphere' or cocoon in which we find ourselves, encompassing all dimensions of our relations, which he sketches as follows:

Human – machine
World   (TP: 14).

This represents the background relations such as air-conditioning systems, artificial lighting, or even our built environment in which our lives unfold. In background relations, we are not directly engaging with technological artefacts. In the correct functioning of the machine, artefact or instrument, there is a fluidity or transparency in my engaging with or by means of the artefacts with the world. In all technical relations, as Ihde shows us, we only become aware of a specific machine or instrument when it malfunctions, and is therefore perceived as a present 'absence'. In a functioning state, technology exists on the fringes of our awareness as an 'absent' presence, and we have no direct contact or interaction with these background technologies.

Lastly, Ihde describes horizonal phenomena in which he discusses bio-technologies in their various functions and forms which do have an influence on our perception of our lifeworld, in addition to being a determining factor in the transforming our lifeworld. A body of research has been published on questions such as, where does human agency end and technology begin, or are we in a 'post-human' or 'cyborg' era? I

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11   I owe this idea to Wolff.

believe our corporeal existence and our primordial 'cleaving' to the world is innate (an inborn complex), so that the irreducible intertwining of body and world cannot be 'unravelled' by technology.

2.3 Spatial perception

Merleau-Ponty's approach to the question of spatiality and spatial perception is that we can approach the problem in two ways. On the one hand, we could perceive space as our living in things *unreflectively*. We could view space as a universal power that connects all things: at one moment as that vague milieu in which things are, and at another moment as a common characteristic of all things. The concrete relation between my body and things appears to me as an 'irreducible manifold variety' (*PP*: 244), as expressed in terms of top, bottom, near or far (we are concerned here with regional, physical space or 'spatialized' space). On the other hand, we could reflectively grasp space 'at its roots and think at the moment of the relationships which underlie this word….only through the medium of a subject who shall describe and sustain [these relationships], and passing from 'spatialized' to 'spatializing' space' (*PP*: 244).[12]

In examining the question of whether the conception of space is either a matter of perceiving things in space (the Kantian notion of 'form'), or of space as 'the indivisible system [that governs] the acts of unification [which is] performed by a constituting mind' (*PP*: 244), Merleau-Ponty concludes that we can only study these ways of our conception and experiences of space when we consider extra-ordinary situations. It is difficult to explicate certain experiences in our everyday life, such as the experience of 'up' or 'down', in a phenomenological way. Thus, he refers to the exceptional cases in Stratton's experiments as documented in *Some preliminary experiments on vision without inversion of the retinal image*, and Wertheimer's experiments (*PP*: 245-247), after which Merleau-Ponty postulated a third spatiality, which is neither the Kantian notion of things in space, nor that of spatializing space (*PP*: 248).

Amongst other results, the experiments show that the image does not govern our experience of 'up' or 'down', nor when the tactile body links up with the visual body; therefore, 'one cannot take the world and orientated space as given along with the contents of sense experience or the body in itself' (*PP*: 247).

Furthermore, Stratton's experiments demonstrate that spatial experience cannot be grasped by looking at the contents in a setting, nor can it be grasped by a pure subjective synthesis. Wertheimer's experiments show that, even without moving one's body during the experiment, the oblique image could become 'rectified' for the subject; as the body finds certain visual 'anchors' which the objects seem to have attracted to themselves as a 'vertical'. As a result, the physical, stationary setting (the original horizon) 'tilts' to become aligned with the 'vertical anchoring points' in the image (*PP*: 249).

These findings lead to the conclusion that the significance of everything that determines space, for example, 'up', 'down', 'there', and so on, depends on an actual start-

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12 'In the first case [spatialized space], my body and things, their concrete relationships expressed in such terms as top and bottom, right and left, near and far, may appear to me as an irreducibly manifold variety, whereas in the second case I discover a single and indivisible ability to describe space. In the first case, I am concerned with physical space, with its regions of varied quality; in the second with geometrical space having interchangeable dimensions, homogeneous an isotropic, and here I can at least think of a pure change of place which shall leave the moving body unchanged, and consequently a pure *position* distinct from the *situation* of the object in its concrete context….here we want to compare it with our experience of space….' (*PP*: 224; Merleau-Ponty's emphases).

ing point, an absolute 'here', which explains the body as the point-horizon in space (*PP*: 246-249; cf. SB: 194). Normal perception recognizes a previous established spatial level'[13] as the reference-point for the way in which the current spectacle appears.[14] This suggests that history is inscribed in our bodies as in the world that human beings 'inherited': the world is as already given prior to our personal existence. Having a body also means that I have inherited, with the world, innate 'human' structures to be in the world in specific ways (as pre-given bodily potentialities) that develop into habitual structures.

Then, ultimately, what do 'top' and 'bottom' mean? Merleau-Ponty demonstrates that Wertheimer's experiment proves that the 'spatial level' cannot be identical to the orientation of our body, and Stratton's experiments prove that the space of our perception is neither the space of things, nor a 'spatializing space', but that my body has a form of possession of my world by means of a spatial level (cf. Kockelmans 1970: 282-287).

The crux of the matter is situated in the organic relation between the body-subject and space: it is the 'gearing of the subject to his/her world which is the origin of space' (*PP*: 251). Hence, the only method whereby we can understand space, and achieve optimum clarity in perception and our actions, according to Merleau-Ponty, is the body's constitution of a spatial level, which always presupposes another previously given special level.

It follows that space is 'always already' constituted. In other words, my bodily actions towards optimum perception define a 'perceptual ground' as a basis or a general setting for co-habitation between my body and the world, therefore my body constantly gears itself towards the world by, for instance, constituting a new spatial level in the light of its tasks (through my body's 'I can') in a specific setting (*PP*: 251) Merleau-Ponty describes the body's innate ability to 'change' spatial levels as similar to transposing keys in singing a melody. The question arises about how these additional subtleties would enrich Ihde's project. This might, partly, be answered later on in this paper in the analysis of the example. However, I believe it requires an in depth study.

13 The spatial level and bodily orientation should not be confused: each spatial level presupposes a previous spatial level. There is no absolute first spatial level anywhere, and that space always precedes itself. In the constitution of a spatial level the tactile body plays a vital role, Wertheimer explains, and, as Merleau-Ponty says: '[M]y personal existence must be the resumption of a pre-personal tradition… [which] is my body' (*PP*: 249-251). It is the virtual body with its phenomenal place defined by its task and situation that is a system of possible actions; this system counts for the orientation of the spectacle.

14 In an excerpt from Stratton's (1899) test results, he writes about the 'denial of the original spatial character' of one of the senses (either touch or sight) in the experiments, which led to certain behavioural outcomes which Stratton describes: '…the process by which the different sense-perceptions, whatever may be the ultimate source of their extension, are organised into one harmonious spatial system. The harmony is found to consist in having our experiences meet our expectations. When sight suggests some definite place in the touch-field and the object is actually felt in that position, and when touch suggests some definite visual position where the object shall be seen, and it is actually seen there, sight and touch are then harmonious. The essential conditions of the harmony are merely those which are necessary to build up a reliable cross-reference between the two senses. This view, which was at first based on the results with the inverting lenses, is now given a wider interpretation, since it seems evident from the later experiment that a given tactual position may have its correlated visual place not only in any direction, but also at -any distance, in the visual field' (Stratton 1899: 501-502). Merleau-Ponty's brilliance in identifying the notion of 'spatial levels' is apparent.

In *PP* (153), Merleau-Ponty explains that 'the primordial level is on the horizon of all our perceptions', but each level appears when 'we cast anchor in some 'setting' which is offered to us'. The positing of a level shows us that 'space has its basis in our facticity' (*PP*: 254). In other words, space is already constituted, but it is only through my embodiment that I can conceive of space in a field of vision (as part of and in unison with the tactile and other senses) in a way that provides a possible reference point (an anchor). Spatial perception is a structural phenomenon, of which my body is the subject (of space) within this structure (cf. Kockelmans 1957: 394, 1970: 301). We see the world as temporal, spatial outlines – which means that when I look at something there is a constancy: '[W]hen I perceive, I belong, through my point of view, to the world as a whole' (*PP*: 329).

By showing us that the origin of space is my lived body, the world also provides us with 'anchors' that teach us how to deal with situations. For example, my body understands gravity: apart from visual spectacles, my body senses the 'meaning' of up and down, and of weight. Even geometrical thinking does not transcend perceptual consciousness because the notion of an essence (for example, the sort of material essence of the triangle in which the words 'up', 'down', 'left', and so on holds meaning) is borrowed from the world of perception. Therefore, because of my implicit general grasp of the world, I can conceive of a geometrical form because it can 'potentially [be] situated in my perceptual field' (*PP*: 386).

The body's own spatiality exists in action (and is shown in movements such as grasping and pointing), which Merleau-Ponty demonstrates in his comments on pathologies such as psychic blindness[15] (*PP*: 103). Goldstein even shows that in normal perception, the body and things in contact with the body are difficult to perceive unless there is movement (*PP*: 108). I find a *lacuna* in Ihde's analysis of the role that bodily motility and the body's spatiality in the human-technology relations (other than the embodiment relation between human-technological artefacts) plays in the technological mediation of perception and experience of our lifeworlds.

btIn this sense, Merleau-Ponty's descriptions of bodily motility, the spatiality of the body and *Gestalt* perception informs Ihde's philosophy largely, insofar as it opens up many possibilities for phenomenological and inter-disciplinary studies. Through our implicit bodily hold on and view of the word, a 'geometrician' (and architect) can construct line drawings that depict lived space and express the essence of form (as the presumption of a completed synthesis (*PP*: 387), which is simultaneously an expression of our corporeal possibility for experience.[16] Therefore, we cannot reject mythological space, ritual space, or space experiences of my dreams or those in hallucinations, because all these spatial experiences are based on a primordial spatiality of which, according to Merleau-Ponty, these experiences are modalities (*PP*: 281-287).

This is important for me as an architect because specific spatial experiences are derived from our facticity, which enables me to design by means of a specific skill or technique, a style, a signification that is inter-culturally understandable as the possibil-

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15 Gelb and Goldstein studied the phenomenon of the patient who, with his eyes shut, is unable to perform abstract movements or describe the position of his body or even his head. He also could not identify a point on his body that was touched by the doctor. (*PP*: 102-103).

16 The constructions of a drawing of a triangle (to use an example) 'possess a demonstrative value because I cause it to emerge from the dynamic formula of the triangle. It expresses my power to make apparent the sensible symbols of a certain hold on things, which is my perception of the triangle's structure' (*PP*: 386). Kockelmans (1970: 289) explains that space and perception constantly refer me to my existence and contact with the world that is older than my thinking.

ity for bodily experience of space or place. Merleau-Ponty expresses our bodily relation to space as verbs: the body 'haunts' space (PrP: 5); it 'inhabits' space (*PP*: 139,429); it radiates intentions in terms of possible movements in space (PrP: 5, cf.*PP*: 109). We 'transport' our phenomenal bodies in space (*PP*: 106), and also, my body 'applies itself' to space like a hand to an instrument (PrP: 5). How does my body do this? Merleau-Ponty may not have described this specific notion in depth, but one discovers a treasure that I believe deserves emphasis. Firstly, the body is a 'place', a situation. Secondly, the body is an active intentionality, the notion of 'I can', and the experience of space presupposes motility. Thirdly, the body applies itself to space as a form of habituation.

2.4 Lived space

Lived space is that practical space which is bodily space – it is oriented around the body's physical structure and projects in order to fulfil the needs of the body. An example of practical behaviour is that I blink, squint, and raise my hand to my brow when walking into the sunlight to protect my eyes from blinding and potential damage from the naked sun. This movement occurs pre-reflectively. Merleau-Ponty says this is not a stimulus-response event as empiricists claim, since bodily motility cannot occur in objective space (*PP*: 102,103). Near, far, accessibility, within reach, out of touch, have meaning in terms of bodily motility and the body-subject's (notion of) 'I can', which shows the body's own intentional structure that is pre-predicative and pre-conscious in lived space.

   The spatiality of one's body, according to Merleau-Ponty, is a spatiality of situation rather than one of position (like that of external objects), which means that 'here' does not refer to a specific position in relation to other positions, but to the 'anchoring of the active body in an object, the situation of the body in face of its tasks' (*PP*: 100). In terms of spatial position, the relationship between human beings and objects is not one of distance, but rather that of a 'vertiginous proximity' (*WP*: 66). This relation implies reciprocity. The opposite applies to the differentiation stage in the child's development, for example, when an objective ground is established between her and others: unless the relation of 'vertiginous proximity' (dizzying proximity) is replaced with a 'lived distance', neuroses and other psychological illness set in (*PrP*: 154).

   The examples of the woman with the feathered hat and the blind man's cane are beautiful examples that Merleau-Ponty uses to explain this concept. In the analysis of bodily space, he tells us, experience teaches us that space and the perceived object are mutually inclusive, that our body pre-reflectively has a 'primitive spatiality', which is part of its being. Thus, through the body that I am, I am tied to my world. I am not in space; I am *of* space (*PP*: 148). Referring to Husserl, Merleau-Ponty writes that in our carnal relation with the other, we become who we are:

> I am no longer the universal being of space, but a human enclosed in a sack. My perceptions … [become] localized events in space and time. I …become a *Raumding*, a spatial thing. The universe of [things] closes in on me, whereas previously I was a rip, a gap torn open in the world…the idea of a thing-for-X is introduced for every subject that communicates with us. (*N*: 76)

By virtue of bodily motility, each 'there' is a potential 'here'. For Merleau-Ponty, this tension created by bodily space is the beginning of its transformation into universal space and theoretical space (*PP*: 108,109). Bodily motility and its possibilities are

grounded in this tension (*PP*: 109), and they provide the foundation for spatial orientation whereby space forms a horizon for multiple possible movements, expressions and so forth. The body-subject's constructed space provides the background for abstract movement 'by virtue of the possibilities opened to it by thematization of the 'I can,' consciousness is liberated from the immediacy of the bodily projects made in response to the concrete and given context, and may now undertake movements in the human space of potentiality (as opposed to the physical space of actuality)' (*PP*: 109).

Bodily space and universal space derive their meaning in a reciprocal manner (*PP*: 102). For Merleau-Ponty, every figure will stand out against this 'double-horizon' of bodily and external space (*PP*: 101). He does not note a relation between space as a 'setting'[17] for the positioning of things, nor to space as a container. Rather, he believes that space is the power that binds things together (*PP*: 243). It is important to remember that, just like lived time, lived space, or, oriented space, has its own variable 'measures': a great distance in terms of objective space can be experienced as a quite a short distance or vice versa, depending on my mood during the experience. Thus, for example, when I walk a given distance whilst happily engaging in an intriguing conversation with my best friend, my experience is that time and hence the distance covered seem to have 'flown past' (cf. Bakker 1965: 411-414).

Lived space is also an expression of our cultural practices, for example, our personal space preferences: I might feel relatively comfortable in an aeroplane whilst sitting very close to (and in economy class, sometimes literally rubbing shoulders with strangers on both sides). Firstly, we do not have eye contact and, secondly, I form a personal 'bubble' around me so that I experience the strangers as being further away. Similarly, in movie theatres or concert halls, strangers are physically very close to one another, yet communally engaged in watching a movie or listening to a symphony. Our perception in lived space and the 'description of human space … can be developed infinitely' (*PP*: 287).

The question of depth perception can be rephrased: how does space reveal its own particularities to visual perception? Can it do so? When I observe a landscape, I cannot see depth itself, so how do I know that there is depth? This is a very important question in terms of the nature of the problem stated at the beginning of this paper. I am concerned with the primordial bodily experience of space, as well as with the different levels of spatial perception, such as visual perception in a concrete setting, when I am stationary or moving; visual perception of a representation[18] of space in two or three dimensions. In all these different ways of perceiving (space), I am able to gain knowledge of others and myself in the world. Let us return to what Merleau-Ponty says about Euclidean and lived space, as distinct from formal geometry.

Merleau-Ponty considers depth to be the most existential dimension of the three Euclidean dimensions that constitute a representation of space that is understandable to, and practical for, human beings. He argues that depth is the only dimension that belongs clearly to our perspective and not to things. Therefore, depth cannot be extracted from our perspective, nor can consciousness put depth into things (*PP*: 256).

17 Spiegelberg (1965: 162) explains that Husserl thinks of the lifeworld as oriented with the living self at its centre. The spatial setting of the lifeworld is then experienced as stationary.

18 In two dimensions such as the classical perspective drawings on a piece of paper, or in three dimensions, such as a virtual 'fly through' computer-generated model of a building, but still perceived on a flat computer screen, unless one is in a Virtual Reality room with all the necessary concomitant bodily apparel.

The problem of depth is that we assume that depth is immediately equivalent to width or breadth (we assume that space is isotropic), because we can move to the side of an object and perceive its breadth. If we attempt to understand the origins of depth, Merleau-Ponty says that the phenomenon of the lived world must be described as faithfully as possible. Depth is the dimension of space (more than height and breadth) that requires us to suspend our assumptions and to reveal our original experience in the world, which will show us that depth is existential.[19] We experience depth at the 'crossing' or 'collision' of body and world (Morris 2004: 23; *PP*: 429).

Merleau-Ponty says that the ability to grasp the significance of convergence as a sign of depth (apparent size and distance):

> 'is conditioned by my knowledge that there is a world of undistortable objects….My ability to understand convergence as a sign of distance is conditioned by my visualizing my gaze as the blind man's two sticks, which run more sharply together in proportion as the object is brought nearer….by my inclusion of my eyes, body and the external world into one objective space [can I understand converegance as a sign of distance]' (*PP*: 257).

Apparent size as it is experienced is a way of expressing our vision of depth (*PP*: 259). This is also why Merleau-Pontly was so fond of Cézanne's approach to his world, regarding Cézanne's paintings as the products of his primordial perception, to be analogous with Gestalt psychology, namely, that perception of changes in shapes and sizes when things are moved away or rotated (such as a disk) happens at a slower rate than we would expect according to geometrical principles of projected perspective.

The apparently distorted perspective in Cézanne's paintings is actually correct in terms of what is perceived in lived space. If the constructed geometrical perspectives were provided to us through lived experience, we would not need to 'learn' to construct perspective, as we have to in the Renaissance paintings (*PP*: 260). This geometric perspective is, for Merleau-Ponty, a style; a form of perception and expression at a certain point in time that was more than a mere technique since this perspective also indicated the 'position' of the perceiver as dominating his /her world. (*PW*: 53,54,56).

The body's notion of 'I can' is a tension created by my bodily space that is the beginning of its transformation into universal and theoretical space. (*PP*: 108,109). All reference to 'oriented space', bodily space, or, to the universal form of space, is laden with anthropological associations, otherwise 'top' and 'bottom', 'on', 'beside' or 'under' would be indistinguishable for us (*PP*: 101-102). The result of Merleau-Ponty's analysis of bodily space can be generalised in the sense that corporeity and all perceived things share the fact that '…the perception of space and the perception of the thing, the spatiality of the thing and its being as a thing' are the same problem, because 'the experience of our own body teaches us to realize space as rooted in existence.'(*PP*: 148).

Now that we have a brief overview of Merleau-Ponty and Don Ihde's ideas on embodiment and technologically mediated perception, and how these structures operate and interrelate, let us test both philosopher's work by means of an example from the lifeworld.

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19 Cf. *PP*: 255-256.

3. Built space

3.1 The technical artefact: an example put to the test

Perceiving the physiognomy of the Beijing Airport[20] is only possible by viewing the building from the air. This building has been 'contextualised' in that a cultural symbol[21] has been imposed onto a general functional typology. However, there are aspects of myth (the fire-blowing dragon) and *mimesis* that one can recognise, and the mechanical 'dragon' takes on a 'life' of its own, in a number of ways.

1)   The baggage system operates as networks of arteries through the buildings. [22]

2)   Over 400 elevators articulate the wings' verticality and physical depth of 80m.

3)   The metal clad structure[23] can contract and expand up to 800mm laterally and vertically over the width of each dragon wing to allow for thermal movement and that of potential earthquakes. Each structural frame has loosening connections that comprises of 32 steel joint sockets. The structure thus performs movements similar to skeletal bones, ligaments, and knuckle joints. Roof windows (skylights) that resemble the 'scales' of dragon skin serve the function of letting natural light into the building. For me, these sizes are mere abstract figures on a Cartesian grid.

By performing the phenomenological reduction, the essence of an airport (such as Beijing or O.R. Thambo in Johannesburg) is a constructed place or nexus for the spatio-temporal transition of the human body by means of technology.

What constitutes the Beijing airport's technicity? Firstly, the building in use is a *system* that is part of a larger one (the air transport industry). It is 'served' by other transport industries such as the automobile, railway, and shipping industries, which culminate in the global transport industry. Below, are some sub-systems that directly and indirectly interrelate within the whole.

1) The architectural representation and documentation serve as the 'blueprint' for the building contractors' construction methods and materials. 2) The construction processes and the labourers' engagement with the materials and interaction and communication with one another. 3) Building services reticulation comprising of their sub-systems. For instance, mechanical services, electrical systems, data networks and telecommunication services (computers, telephones, imaging devices such as electrical billboards for flight schedules, control tower radar, x-ray and tomography) form part of the security system.

Other sub-systems are plumbing and sewer systems, human transport (horizontal and diagonal escalators and elevators), and fire control systems (fire-staircases, sprinklers, smoke alarms, etc). Restaurants, shops, and many other ancillary systems, oper-

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20 *Man made Marvels*. 2007. Television program. National Geographic. Discovery channels - Asia. Beijing & London. 27 June 2009.

21 The new soccer stadium for the world cup event in Johannesburg is another instance of a superficial imposition of a cultural symbol (in this case a 'calabash') on a predetermined form derived from function and structure alone.

22 Running three levels deep, this system moves at a speed of 68km/h to distribute 250 000 pieces of luggage per day.

23 The building structure comprises of a series of steel portals that span as far as 800m with unsupported cantilevers of 35m . The length of each wing is more than 2 km. This airport is described as the largest roofed space on the planet. The way that this built space is referred to is as if it has been observed from outside our lived world.

ate separately and collectively within the whole. The whole system is only functional through human agency. The staff, crew, passengers, and visitors, complete the system.

Secondly, the technicity of the airport is manifested in the different modes of interface between human and technology. Effectively, most processes in airports are regularized: firstly, at a very basic level, passengers are identified by their seat numbers, luggage contents, and weights are checked. On a deeper level, submission to regularized actions, for example, the walk-through scanners, personal body checks, along with the 24-hour 'gaze' of security staff and cameras in and around the airport contribute to the objectification of humans. This demonstrates Foucault's argument[24] on the 'technologies of power' that the State uses to justify mechanisms (such as racism in its different forms, i.e. criminals, the mentally ill, or other 'anomalities'[25]) for its exercise over human individuals and societies.

The question arises whether Ihde's model of human-technical relations, as well as his question (what kind of lifeworld is made possible by means of technology) is inherently dichotomous. His model for analysing the structural relations through the human-technology interface is done on a physical level, whilst his question on the kind of lifeworld made possible through technology is interpreted in accordance to the Heideggerian ontology of *Gestell*[26] as a cause of Ihde's relations on an ontic level. Heidegger views the physical, artefactual aspect of technology as one of the results of the way that the 'Sein' of this epoch is revealed.

Ihde's approach in his structural relational model questions the role of material technology in perception and experience of the lifeworld, and complements Merleau-Ponty's question on the role of the body-subject in perception and experience of the lifeworld. Let us consider Merleau-Ponty's ideas on embodiment of artefacts through habit acquisition, which, in turn, changes the body schema and thus enables the body-subject-world relation to function in new and different ways. Let us compare that to Ihde's notion of embodiment relations that mediates perception and action by examining the example of passengers pushing their luggage trolleys to the check-in counters.

For Merleau-Ponty, the body-subject is primordially intertwined with the world. This is an aspect that Ihde neglects to discuss in his explications of embodiment relations (*PP*: 143 footnote; Brey 2000: 46-48). The principle in Merleau-Ponty's account of the woman with the feathered hat that becomes embodied in her 'style' of moving about, which shows the change to her body schema, also applies to the passenger wearing a backpack and pushing the trolley. The woman pushing the trolley is in a different kind of embodiment relation than Ihde's perceptual extension/reduction binary resulting from perception by means of the artefact. I think we can say that it is a matter of 'expectation', or what Merleau-Ponty says, 'perception runs ahead of itself' (cf *PP*: 418,421), in that the passenger does not expect to perceive anything by means of the trolley, but by pushing the trolley she may accidentally bump against a rail that gives her perceptual feedback from the world. I think this principle of 'expected' and 'unexpected' feedback that our world provides in our engagements applies to all kinds of our relations with technology.

In watching the dragon from the aeroplane, the passenger is in a hermeneutical relation with the dragon because the passenger interprets the symbol/ sign as a cultural

24 Cf. Foucault (2004 Ch. 11). '17 March 1976'.
25 Ibid: 258.
26 Botha 2001: 117-118.

artefact. Husserl said that cultural objects have a 'thereness-for-everyone', or an objective actuality, which is also 'my transcendental clue [of] the experienced other.'[27] The mythical world, just as the landscape of hallucination, is described by Merleau-Ponty as '*having the value of reality*'(*PP*: 342) and is thus perceived as real. In his text, *Signs*, Merleau-Ponty wrote that, the role of myth in contemporary cultures is to resolve some local or present tension by recreating the mythical structure. (*S*: 117).

Mimesis pervades in contemporary cultures by means of contemporary technics. It might be ascribed to human beings' awareness of their own facticity: in trying to overcome it by projecting themselves onto 'timeless being' and re-projecting timelessness and power beyond our natural capacities back onto ourselves. As if we project our own projects (our cultural world) back onto ourselves.

Ihde shows us a deeply embedded ('cross-cultural') structural invariance in which humans interpret themselves by pointing to 'something which is 'other' than human' in *ET* (72). The character of our lifeworld is technologically textured and 'likened to us', which shows how deeply the metaphor of the machine 'dominates contemporary self-interpretation.'(*ET*: 73, 74). The machine-metaphor, as a way by which reflexive self-interpretation occurs, is functionally the same as most primitive reflexive self-interpretations. 'Our de-animated or mechanized 'world' is internalized in a fashion that is no different from the way archaic humans reflected their more animistic (familiar to them) 'world'.

We become 'like' our 'world' in the same way that they did theirs.' (*ET*: 74). Ihde also describes interpretation as always referring some kind of otherness, in other words, interpretation is always interpretation of…..... (*ET*: 76). This notion is, I think, underpinned by Husserl's (and thus Merleau-Ponty's) notion of the intentionality of consciousness. Let us return to the lifeworld and our airport example in order to examine Merleau-Ponty's and Ihde's notions of the 'other'.

At the check-in counter, the passenger places her bags on the scale, which displays 20kg on its LED (light emitting diode) screen. In this situation, our passenger is in a hermeneutic relation with the digitized scale. She has pre-booked her ticket online and the machine issues her with a boarding pass. In this situation, the passenger is in an interactive engagement with the e-ticket machine (the machine being a 'quasi-other'), which constitutes an alterity relation. Merleau-Ponty's notion of inhabiting the world applies to all our interactions and relations as aiming to fulfil the goals in our inherent bodily intentionally. This includes all of Ihde's human-technology relations.

Our passenger feels uncomfortable because the people standing behind and next to her are uncomfortably close. She has moved a few times to create some distance from the people around her, but to no avail. She finds herself in a situation of cultural difference in spatial perception. Ihde calls this phenomenon macro-perception, or cultural perception. An excellent example of Ihde (and Merleau-Ponty's) notion of cultural habits and cultural perception is the work of ethno-anthropologist Edward T. Hall, who writes that an invariable structure exists in human spatial perception, which he calls 'proxemics'.[28]

For Ihde, the transformation of perception and experience that is mediated by technology does not stop with direct sensory and lived body experience. Technologically mediated experience of the world is reflexive in different ways: 'a growing technologically mediated experience of the world reflected back upon such phenomena as hu-

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27 Husserl 1999: 90-92.
28 Cf. Hall 1990 (1966), ch. 10 & 11.

man *self-interpretation* and its cultural variants' (*PT*: 112). Our lifeworld is 'techno-logically textured' to such a degree that it is no accident that we refer to our bodily functions in a technologically metaphoric way: our hearts are 'pumps', brains are 'wired', language is 'pre-programmed' and so forth. (*PT*: 112, 113).

3.2 Spatial experience

The passenger at the airport is engaging with the world in the field of her practical, lived space. Her orientation and her 'sense' of the spatiality of the building is grounded in her body. Thus, she will perceive the building as 'huge' in relation to her visual field and the distance she has to walk between different destinations within the building. The sense of height will be perceived in relation to her own bodylines and her personal history of previous spatial experiences.

She inhabits the same space; be it the space enveloped or formed by material struc-tures (such as the airport, her office or home) or the space of the expanding valley on a hiking trip, or the experience of height when she stands on the hilltop overlooking the valley; all being part and within the horizon of all horizons. However, the significance and meaning of each place (built space) is based on her past personal history of spatial experiences, as sedimented in her habitual body that she brings with her perceptual field into the present, whereby the sensible qualities of the spectacle in which she finds herself part (even if she experiences this airport for the first time) are somehow 'known' and 'understood' by virtue of her corporality.

She also 'spatializes' space in light of her present intentional actions in the situation. The stability of the structure of her habitual body allows her to engage skilfully and spontaneously in her inter-subjective environment, by means of her body's capacity to act and move in adaptive and variational (in relation to the habitual structure) modes. Whether it be any new built environment that one experiences, our body is our point of orientation and the capacity to adhere blindly to the 'volumenicity' of space.

Ihde's reference to spatial experience and perception is that it is primordially cultur-ally informed (*ET*: 110, 111; Ihde 1986: 128-133). He refers to spatial praxes on mi-cro- (on the level of the lived body, or 'Body one') and macro- (or 'Body two') per-ceptual levels. Proximity in different social and interpersonal situations (inter-personal bodily distances in conversation situations, for instance) vary between Middle Eastern and Western cultures. Navigational praxes, such as reading maps to determine one's orientation relative to the longitudinal and latitudinal lined global 'grid', which is viewed from the perspective of an 'overhead position' (a historically a Western cul-tural praxis) versus applying rational bodily and cognitive skills (of the Pacific island-ers) indicate cultural perceptual differences. (*PT*: 113; *ET*: 111,112).

Ihde and Merleau-Ponty's philosophies merge when we look at the human body as inhabitant of built space in the following ways. To 'inhabit' implies *habere* ('to have') and 'habit' translates as the innate bodily skills of our being-in-the-world. A place such as one's house or one's workplace becomes 'lived through'. For example, I ha-bitually become accustomed to the smells of the polished timber, fresh fruit, coffee and the cigarette smoke that is entrenched in my books and furniture. As the smell of one's own perfume recedes through constant use and familiarity, so does the specific tactile 'grip' of the small brass cupboard door knobs and immediate reach for the light switch in the dark become 'transparent' habitual actions solicited by (living in) my house.

From an Ihdeian perspective, one can reflect on the various ways in which one is related to one's house as lived-through space. My house and I constitute an embodiment relation as I focus on the landscape outside. In another sense, my house and I form an embodiment relation in the way that I become part of the 'embodiment' of my house. In this sense, the artefact embodies the human being in the way that it acts like a static hammer that withstands the 'blows' of nature. Built space becomes a meaningful place and a temporal setting for our personal and interpersonal lives to unfold.

In a foreign country, I begin to understand the meaning of words 'through their place in a context of action' (*PP*: 179). Words begin to make sense to me when their conceptual meaning is 'deduc[ed] form a *gestural meaning*' (*PP*: 179; Merleau-Ponty's emphasis). In this sense, I learn to make architectural drawings, because it is by showing the symbol's relation to our lived experience of the object (walls, doors for instance), that this process becomes habituated to such an extent that the drawings themselves take on a life of their own; as if I inhabit it, similar to inhabiting language. Merleau-Ponty writes that inhabiting language and expression have 'an existential meaning beneath the conceptual meaning of the words'(*PP*: 182).

Similarly, drawings have an existential meaning beneath the meanings of the drawing line types, conventions and symbols, so that 'the process of expression [drawing plans] brings its meaning into existence' (*PP*: 182); it brings us to a new level of experience[29] insofar as that the drawings start coming to life for those who understand and have acquired the habit of communicating in this 'language'. Thus, architectural drawings and its conventions are acculturated through habit.

4. Conclusion

Any building is a technological artefact. It may be a work of art; it may invoke aesthetic feelings, or emotions that might affect my way of inhabiting the built space. However, we always (excluding exceptional cases and illness) will have that anonymous experience of *praktoknosia*. In a similar way to how a memory is stored in each cell of my body-soul, a memory is brought to life by moving my phenomenal body. I will also be, as any other healthy human being, in specific relations with technological artefacts, irrespective of the culture, social, or, geographical setting, in which the artefact is used. It might be necessary to acquire techniques or adapt to a certain cultural *habitus* in order to deal with things and others in certain manners. However, different *habitus* would not change the basic structure of the human-technology-world relations.

We perceive, experience and relate differently to the natural world than to technological artefacts. Our body is the 'hexis' of all of our perceptions, in addition to a 'place' where meaning and significance originate in terms of our perceptions. What we have learnt from Ihde and Merleau-Ponty is that all of our experiences and perceptions occur on different levels. It is only in the mythical world and the world of the new-born infant that subject and object are not consciously differentiated, although there might be traces for the possibility of self-awareness. The 'undifferentiation' of subject-object means that developed natural and normal perception varies from the pre-self-conscious level to the level of 'having at a distance', in order to be involved in hermeneutic and alterity relations with technological artefacts as a means of obtaining knowledge through our mediated perceptions of the world. Merleau-Ponty's phenomenology of the body is a reminder to us not to dismiss 'lived experience' and embod-

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29 Cf. Embree (2010: 1-11) where he gives a detailed reflected account of 'reading' plans as an example of 'indirect engaging'.

ied perception in our technologically textured lifeworld. He reminds us not to forget that beneath our cultural worlds is the natural (primordial) world that is intertwined with our body (the natural world to which our body 'cleaves'), which we so easily take for granted.

Since Ihde fails to develop a theory of embodied spatial perception (which I believe plays a paramount role in our everyday lifeworld), specifically, on whether embodied spatial perception is technologically mediated or not, Ihde's philosophy lacks depth in that I miss the richness and subtleties of Merleau-Ponty's explications, from which Ihde could greatly benefit in his future projects.

Understanding human perception and the experience of one's own body helps us to understand the freedom of the temporal structures of the body and world. In addition, it allows for our present and future spontaneity and the view that habits give unity to our experiences as well as understanding the anthropological structures, that phenomenology lays claim to without objectifying the human body, are paramount principles for designing buildings for human inhabitation.

In the world of architecture and design, we have to realize and design for the different structural variations of human-technology relations. In other words, this means to accommodate human-technology interaction with the concomitant social and cultural *habitus* and body technics. We have to be aware that built spaces can enhance the 'optimum' fields of sense experiences through means of coloured textures or different surfaces, which can refract or reflect lighting as focus or in the background, providing an enhanced perceptual field for music performances, or in designing exhibition spaces, and so forth. If we understand how human beings inhabit the world, for example, that the 'other' inhabits the same natural world as I do, that the cultural world is a projected world around us, how the gaze 'inhabits' an object, or, if we are filled with 'wonder' when we learn to see instead of look, we will be better equipped to create built spaces for human inhabitation.

List of abbreviations

Texts by Maurice Merleau-Ponty (in alphabetical order)

N: Nature: Course Notes from the Collège de France
PP: Phenomenology of Perception
PrP: The Primacy of Perception
PW: The Prose of the World
S: Signs
SB: The Structure of Behaviour
SNS: Sense and Non-Sense
VI: The Visible and Invisible
WP: The World of Perception

Texts by Don Ihde

BT: Bodies in Technology
ET: Existential Phenomenology
IR: Instrumental Reality
PT: Philosophy of Technology: An Introduction
TL: Technology and the Lifeworld
TP: Technics and Praxis

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