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### **Pocket Technospaces: the Bodily Incorporation of Mobile Media**

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Handheld media and communications technologies are becoming increasingly composite interfaces, combining the functionality of standard telephony, text-based interaction, emails and internet browsing, digital video cameras, PDAs, MP3 players, and game consoles. As devices such as these penetrate and transform everyday cultural practices and spaces, they are effectively transforming the relation between body and world, ready-to-hand and telepresent interaction, and actual and virtual environments. This article focuses on the spatial, perceptual and ontic effects of mobile devices as nascent new media forms, with particular attention paid to the use of games and media content in devices which include telephony as part of their functionality. I will examine both how mobiles are used as phone-game hybrids, and how they also work not simply as communicative conduits, but as 'handy' or pocket containers of data, media content, photo archives and secure microworlds. To date there has been limited attention paid to the corporeality of mobile phones as itinerant game and/or media devices, or to the phenomenological impact of physical mobility on game play and new media consumption/deployment, and the particular sense of transmediatic space and perceptual dispersion that they generate. With these issues in mind, I will consider the impact of recent mobile phone technologies, and share some of the insights afforded by a small ethno-phenomenology of mobile phone and media use in urban Western Australia that is currently in progress.

#### Phenomenology of technology: a word on method

In its phenomenological focus, my approach is framed within the broad premise that every human-technology relation is also a body-tool relation, and as such every mobile-body merger invokes certain kinds of being-in-the-world, and particular ways of knowing and making that world. I suggest that mobile media usage is quite literally a medium specific mode of embodiment, a way of 'having a body' that demands a complex socio-somatic adaptation. Indeed, our use of mobile and wearable media can be described in Drew Leder's terms as an ongoing *incorporation* by which we reshape the ability structure of our bodies (Leder, 1990). In these terms, then, how does this portability and wearability — the prosthetic and orthotic capacities of mobile media — impact upon the body-technology relation? How can we critically interpret the particular *technosoma* to emerge from this relation? Do our perceptions of media and game space become transformed by the physical mobility enabled by portable devices?

Merleau-Ponty's (1962) emphasis on our corporeal and perceptual engagement with the environment can provide valuable insights into the interpellation of bodies and tools in all human-technology relations; in particular, his notion of the *corporeal schema* or *body image* can effectively be applied to the relationship between mobile media and embodiment. The corporeal schema describes the 'expandable,' inherently open and tractable nature of embodiment. In the context of everyday activities, the experience of one's own corporeal schema is not fixed, but may encompass a range of potential body-aspects and body-images in the form of material and technological mediations, and cultural and historical contexts. For example, learning to drive a car involves learning the spatial organisation and limits of the vehicle, its speed, the hand-wheel-direction vector and foot-brake-deceleration continuum, and so on. Within the material shape and capacities of the car, we adjust our physical deportment, spatial orientation, and our entire physical relationship with the world. Drivers need to train their car-body and accommodate entirely new ways of thinking about and moving through space: becoming familiar with emergent ratios of hand-eye and foot-eye co-ordination, judging distances with the visual device of the rear-view mirror (a new vision which warns 'objects are closer than they appear'), and many other techno-corporeal proficiencies. In addition, we must acquire a very complex somatic and semiotic literacy of the built environment, including road-width, signage and artificial lighting. Initially,

learning to drive involves constant attention and concentration, because we must consciously orient our bodies towards the unfamiliar spatial and motile logic of the car, but after some practice driving becomes habitual, and our corporeal schema properly 'dilated' to accommodate the tool. In this way, the car becomes an aspect of our embodiment, part of our repertoire of proprioceptive skills; we have appropriated the body of the car as a temporary body or quasi-body, a supplemental being-in-the-world. Indeed, it is the essential mutability of our *soma*, which adapts according to a complex range of cultural, personal, physical and medium specificities that describes the very nature of embodiment.

Both *as* and *in* context, our embodiment exists as a complex interspersed of physicality and biology, material and cultural environment, somatic memory and habit. Within this relational ontology *qua* embodiment and technology, the body is a material-semiotic assemblage with constantly shifting boundaries; but also, in my analysis, as quite literally *mediatropic* — disposed both metaphorically and materially towards media technologies. Thus, for example, we are now corporeally and conceptually familiar with the phenomenon and experience of telepresence — perception and communication at-a-distance — in everyday life. As Eugénie Shinkle (2003) suggests, media technologies institute 'material parameters', proportions of attention and inattention, by which we measure varying degrees of 'perceptual reach' from objects and others in the world. As is most often the case with our use of contemporary media, for example, the hand-eye-screen interface or the hand-eye-remote control arrangement works as the preferred default. Yet as I will suggest, our use of handheld screens when we are on-the-move complexifies the body-tool corporeal schema particular to screen and televisual media.

Our engagement with screens at a perceptual and phenomenological level is of course deeply embedded in an assorted history of image technologies and collective media-body interfaces. In McLuhan's (1964) understanding of medium specificity, each communication medium works to 'fix' particular sensory ratios, stipulating forms of knowledge and orchestrating the very structure of perception. Yet the body-media relation specific to screen and micro-screen interfaces is not adequately achieved simply via an application of McLuhan's notion of sensory ratios. The corporeal schema *exceeds* a purely sensory perception both in its intercorporeal mingling with the world and in its visceral dimension. Thus rather than use the idea of 'sensory ratio' I will explore the mobile-body relation in terms of *somatic involvement*, a concept which recognises the medium-specificity of both our sensorial spectrum and more broadly our corporeal schema in relation to technologies in use. Mobile media technologies, and tele-technologies more generally, are therefore not simply prostheses or augmentations of our sensorium, but tools which impact upon our body limits, shifting the variable boundaries of embodiment, and altering our sense of having a body: they educe altered 'involvements' of the soma. In what follows I will focus on the media-body relation in terms of the specificity of micro-screens, and the spatial ontologies and corporeal schematics particular to our use of mobile phone media.

## A Phenomenology of Mobile Screens

Contemporary Western culture can be said to have a particular epistemological and perceptual bias, an oculacentrism which works to prioritise visual and screen representations. Critics such as Weibel go so far as to say that

The primacy of the eye... as the dominant sense organ of the twentieth century is a partial effect of a technical revolution that put an enormous apparatus to the service of vision. The rise of the eye is rooted in the fact that all of its aspects (creation, transmission, reception) were supported by analog and digital machines. The triumph of the visual in the twentieth century is the triumph of techno-vision (Weibel, 1996, p. 339).

It has been argued that the prevalence of vision-metaphors and visualising technologies have sustained our epistemological habit of collapsing seeing with knowing, at the same time

separating subject (the seer) from object (the seen), and elevating sight as the one 'true' sense enabling disembodied and objective knowledge. Theorists such as Romanyszyn (1989) have claimed that screen technologies in particular, by providing a frame or window to organise and contain what can be seen, have continued this legacy of visualism. Yet while on the one hand it might seem that new media screen technologies of today are wholly consonant with the ocularcentric paradigm — as Heidegger (1977) claimed, gathering up and ordering the world 'as picture' — I would argue that mobile media screens set up an entirely different relationship to embodied perception, and require a corporeal schema quite at odds with our usual habits pertaining to screens.

In order to grasp the epistemic, ontic and phenomenological status of screen media, it is important to trace their ocularcentric legacy; by understanding this history we can then interpret how mobile screens in particular work to bewilder classical notions of visual perception, agency and knowing, and how they have contributed to what Don Ihde refers to as contemporary polymorphic or compound vision:

Ours is a pluricultural vision... It is a series of multi- and alternative visions, symbolized in the growing presence of the multivisual screens we have become familiar with... One scans the multiple screens, focusing here, then there and, out of the *mélange*, forming new directions and possibilities (Ihde, 1993, p. 29).

The multistable and disparate nature of contemporary vision is thus the partial effect of the many screens encountered in the everyday — televisual, cinematic, information/text display, closed-circuit, video — each with their own technical, environmental and interfacial specificities. What we experience is an aggregate vision, a continuous slippage and merging between televisual events, spatio-temporal zones, and genres of visual meaning (photorealism, animation, simulation). Concurrently, we develop a literacy of a range of imaging techniques, of various modes of visual and audio intervention, such as the freeze-frame, the close-up, and slow-motion, and perhaps even an awareness of some hidden qualities of digital imaging including manipulation, repeatability, and compression. The work of Lev Manovich, Peter Lunenfeld and others on new media and 'interface culture' articulates some of the visual specificities of digital and screen media, from the multiple layering and spatial incoherence of the Windows interface (Manovich, 2001), to the visual maneuvers of hypertext and virtual reality (Lunenfeld, 1999).

In a phenomenological context, we can also determine some general properties of what Introna and Ilharco (2004) call 'screen-ness'. In contemporary life screens are often a primary focus of our attention and concern: they literally display that which is relevant or worthy of notice. This property of relevance has little to do with the specific content of any particular screen display; it rather indicates:

a particular involvement in-the-world in which we dwell and within which screens come to be screens. It is not up to anyone of us to decide on the already presumed relevance of screens; that is what a screen is — a framing of relevance, a call for attention, a making apparent of a way of living (Introna & Ilharco, 2004, p. 227).

Yet while it is possible to describe the broad-spectrum nature of screens in this way, the specific phenomenology of screens — in terms of their functionality, size, sensory and somatic involvement, patterns of use and behaviour — must also be accounted for. As Chris Chesher points out, ways of seeing and 'conventions of looking' are not innate or given, but culturally and materially contextual, such that each 'new visual technology emerges with its own conventions — its own structures of feeling' and concomitant mechanisms of attraction and counter-distraction (Chesher, 2004). The mobile phone is clearly emerging as a distinctive multi-modal screen in its own right, with its own perceptual ratios and techniques.

Describing the particular 'screen-ness' of mobile phones must also involve an account of how the mobile is not just, or even primarily, a screen; it enacts both separately and combined visual, haptic and acoustic incursions into our corporeal schema, and demands variable and oscillating modes of somatic involvement. At times the screen is denied in favour of voice activation and communication via Bluetooth technology, but often the finely attuned coupling of hand and mobile device, the haptic familiarity of the keys, and the ability to use the phone one-handed while texting or navigating with the thumb, also vitiate against focused screen engagement. In part (one-handed) haptic and aural use allows relatively uninterrupted engagement and communication on-the-move, and is thus preferred in some contexts and situations. Newer phones with PDA functionality often have no actual keypad, but rather include a stylus and touch screen for navigation and 'dialing'. This interface requires two hands, and the use of the stylus rather than forefinger is necessary for finer navigation and texting/typing. In focus group interviews, a number of what I would call 'expert users' of mobile phones, who regularly upgrade to just-released models and utilise most or all the functions in their devices, commented on their experience of touch screens and styluses. Interestingly, although several of the expert users desired or owned an all-in-one device combining a high quality digital camera, PDA, MP3 player and mobile phone, they also claimed that while the stylus interface was well-suited to PDAs (which required more focused attention and thus warranted stopping or sitting and two-handed useability), mobile phone functionality (including texting and navigating) should be optionally one-handed.

In part this distinction between functions (if not devices) seems a matter of habit, and the counter-habitual nature of stylus-use in relation to phone functionality. As Robertson (2005) points out, habit, as the 'sedimentation' of action, rearranges our corporeal schema and so quite literally reorganises agency in the world. With sedimented use of a particular mobile phone, 'through an ongoing adjustment of motility', we take 'the motor space of our interaction' *into* our hands and the space of our bodies, such that we come to 'know' its model-specific characteristics in the same way that we know the placement of our own limbs and fingers. She writes:

Merleau-Ponty maintained that the process of learning to type quite literally incorporates the space of the keyboard into bodily space, the situated space of our phenomenological bodies. The space of our cars... of our pens, of our cameras, of our PDAs and of our mobile phones is incorporated into bodily space in the same way (Robertson, 2005).

Other 'everyday' or non-expert users of mobile phones, in separate interviews stated emphatically that they would never use either a stylus or Bluetooth device, but had difficulty providing a reason except in the vaguest of terms ('I don't like them'). A possible explanation may be that both stylus and Bluetooth earpiece affect a less intimate relationship between the hand the phone, and there is no doubt that phenomenologically, hand-tool relations are one of the most significant for our corporeal schematics. As Amparo Lasen insightfully comments, people will often hold and 'handle' their phones even when not in use:

The way mobile phones are held and touched is one of the aspects that make this relationship different to other ICT devices. The attachment to mobile phones is revealed by the transformation from being an object always at hand to being almost always in the hand and close to the body (Lasen, 2004).

In becoming an incorporative aspect of the hand, the mobile phone thus enters into an intimate and habitual relationship with a body-part that is in itself of some consequence as a communicative and world-shaping tool.

Introna and Ilharco suggest that screens of all kinds enter our involvement-in-the-world at the moment we turn them on, at which point we reposition our attention and 'sit down, quit — physically or cognitively — other activities we may have been performing, and watch the screen'

(Introna & Ilharco, 2004, p. 225). Yet this 'frontal' relationship which is typical of our engagement with most screens — where the mediums of cinema, television and computer can be said to discipline the body more or less into a face-to-face interaction — is thoroughly challenged by the mobile media screen. Our interaction with mobile screens is rarely marked by such dedicated attentiveness; indeed, our 'turning towards' them is usually momentary (checking for a text or missed call) or at most can be measured in minutes. In fact, even in the seemingly committed practice of game-play, mobile phone engagement is characterised by interruption, and sporadic or split attention in the midst of other activities, a behaviour quite distinct even from handheld console game-play on the Nintendo DualScreen (DS) or PlayStation Portable (PSP). This is recognised by the growing mobile phone game industry and its labelling of a key market as 'casual gamers', who play at most for five minutes at a time and at irregular intervals; it seems mobile phone gamers don't want immersion (Hume, 2005). In interviews several expert users somewhat paradoxically claimed both that they 'had no time' to play games on their mobile phones because it required continuous visual attention, yet frequently and often on a daily basis *did* play games when they had a few minutes to spare (while waiting for an appointment, on public transport, in a queue).

The suggestion that the proliferation of computer interfaces and digital games have us fixated on screens, and for the most part immobilised by the continuous frontal demands of the interface, is clearly problematised by our use of mobile micro-screens and the phenomenology of the casual gamer. In his analysis of the console game, Chesher (2004) distinguishes between ways of looking specific to cinema, television and console games — characterised by the gaze, the glance and the glaze respectively — yet the ill fit of mobile phone conventions of viewing within this schema perhaps highlights the need to theorise a cross-modal 'regime of vision' specific to both game and non-game use of portable micro-screens. In fact, the mobile phone device crosses over each of these ways of looking if only because we can — and do — watch movies and live TV, and play games, on our phones at varying levels of immersion and distraction. Chesher suggests that console games are 'sticky', holding the player to the screen via both a quasi-visceral immersion in depth-perspective virtual space, and a haptic attachment to the hand-controller and peripherals: 'In glazespace... players suspend their awareness of their day-to-day world to become cybernetically suspended within a virtualised sensorimotor space of the game world' (Chesher, 2004). Casual gamers, on the other hand, must deliberately avoid this 'stickiness' so that they are perpetually ready to resume their temporarily interrupted activities. Mobile game developers are also attending to the specificities of the mobile phone in designing games specifically for the device, explicitly recognising what new game opportunities handsets allow — namely mobility, connectivity, camera functionality and GPS capability. Some location-based games (LBGs) such as Mogi (beta-tested successfully in Japan since 2003), integrate virtual objects into the camera view of the actual environment, and require teams of players to 'capture' them at leisure, or whenever a player happens to be walking past a particular location in the city (Hall, 2004). Social designer of networked environments Amy Jo Kim suggests that Mogi is ideally suited to the casual gamer: 'It nestles in your everyday life, rather than requiring you to change your behavior... It amplifies your ordinary behavior — it changes going on an errand into a piece of a game' (Hall, 2004). Such 'mixed-reality' games or next-generation mobile entertainment platforms, rather than creating an escape from 'real life' through screen immersion, work to integrate play and game interaction into the patterns of everyday life and work.

Digital video and photograph capability via the mobile phone screen is also demanding a perceptual and cultural literacy particular to the medium. More so than the digital camera, the mobile phone is customarily accepted almost as a body-part or appendage, and along with this ever-presence, its multifunctionality renders its status as 'camera' ambiguous. In this way the mobile camera educes a particular kind of ubiquitous visual access, a photo-readiness enabling the capture and containment of immediate and often intimate objects and events. As Pescovitz describes, the photographs exhibited at the Mobile Phone Photo Show (mmps) in San Francisco in 2004 showed how the intimate relationship we have with mobile phones — more intimate

perhaps than with any previous media or communications technology — inevitably ‘bled’ into the images (Pescovitz, 2004). Mobile phone theorists Daisuke Okabe and Mizuko Ito (2005) argue that because the camera phone embodies the phenomenological characteristics of the mobile it becomes a device of different functionality and expectation. They suggest that the mobile phone has three central properties: it is pedestrian (on-the-street, pervading all settings and locations), portable (on-the-body, both inside and outside the home setting), and personal (literally both a self-portal and private archive). Appropriating these properties, the phone camera’s ubiquitous visual access effectively heightens our visual awareness of the everyday, converting every situation into a potential photo or mini-video narrative opportunity (Okabe & Ito, 2005). Interestingly, in discussing their use of the camera phone, several interviewees in my study claimed that although they kept many photos in their phone’s memory (often over a hundred) they never or very rarely sent mms messages or photos to friends, preferring to share their screens in face-to-face interactions or keep them as private reminders of places and people. This use of the mobile phone, as a portable, personal, safe and always-accessible data archive carried on the body — one of the central properties identified by Okabe and Ito — indicates how the mobile phone is so handily appropriated as a pocket technospace or container, becoming integral to our spatial and corporeal schemas in contemporary culture.

### Pocket Microworlds and Mobile Gamespace

There is no doubt that televisual technologies have irretrievably altered our sense of embodied ‘location’ and ‘presence.’ In twenty-first century teleculture it is no longer possible to consider space in terms of the dichotomised categories of here/there, near/far, personal/private, inner/outer or presence/absence, dialectics which dominated our understanding at the beginning of the twentieth century. Technological developments ranging from the telephone through to radio, television, cinema, and video games have created quasi-spaces where a sense of presence can be felt beyond the location of the physical body. Both established and new media technologies frequently function by appropriating space as a framing metaphor to enable consumption and use, and there is much to be said about the configuration of technospaces and media spaces in their specificity, and the relation between these spaces and their effect on our corporeal schematics. In what follows I will consider both the interior and connected spatiality particular to the mobile phone.

In the traditions of Western philosophy, metaphors of space are often formulated as particular kinds of containment, such that our being-in-the-world is always also a mode of ‘holding’ and ‘having’ (Hefferon, 2002). More recently, the representation of computers, game consoles and portable media devices as spaces of containment or microworld reservoirs, implicitly relies on the already recognisable container-like properties of media apparatuses such as the television and radio. As Sofia observes, within the average home:

Books, photograph albums, telephone directories, the television, the stereo, cassettes and CDs: all these media technologies... [have] their container-like aspects. [E]lectronic and print media are storage technologies for other spaces and experiences: a CD or tape can open up a whole concert, or an aural landscape of feelings; a book can disclose another world (Sofia, 2000, pp. 189-190).

Indeed, televisual, computational, and game spaces are dominated by this metaphor of containment, and our ability to enter or *be* in these spaces — and to hold and carry them around on our bodies — is predicated on a perceptual and corporeal assimilation of this metaphor. The Motorola Razzr advertisement broadcast in 2005 very effectively captured our collective understanding of the mobile phone as a device of containment. The ad depicted a woman seated alone in a domestic lounge room in which there were several state-of-the-art digital interfaces such as a laptop and flat-screen panel; the walls and furniture fold into each other, and finally they and ‘the rest of the world’ collapse into an open flip-top Razzr which comes to rest on the woman’s

hand, demonstrating both the safe and handy containment of her environment, and the simultaneous control she has over both actual and data worlds. We both desire and know the impossibility of achieving a neat, compact and foldable being-in-the-world, yet this 'as if' sense of containment is a common experience of mobile phone users; interviewees in my study frequently referred to their phones as microcosms of their lives, far exceeding the containment capacities of wallets and handbags.

Current developments in location-based gaming via the mobile phone make possible even more radical changes to the way we experience the relation between our corporeality and actual and virtual space. Michel de Certeau has famously argued that 'a spatial order organizes an ensemble of possibilities', such as pathways and places where one can go, or objects blocking or redirecting one's path; at the same time the pedestrian trajectory actualises and creates some of these possibilities simply through the 'improvisation of walking' (1984, p. 98). The players of Mogi and other LBGs quite often alter their trajectories through the city, dynamically reworking the spatial order and 'ensemble of possibilities'. A frequent player of the game describes how his trips to the city have become physically 'randomised' or diverted as an effect of the game, such that he gets 'a chance to discover part of the city that I ignored, [motivated] to check out that parallel street I never took' (Hall, 2004). Location-based and next-generation mobile phone games may potentially work to seamlessly integrate the corporeal schematics of actual and virtual worlds as they are actively negotiated on-the-move. LBG creator John Paul Bichard imagines a scenario where the physical environment becomes a 'vast game engine', and objects, places and people 'part of an intertwining series of episodes' (cited in Frauenfelder, 2005). Similarly, Justin Hall envisages a near future where 'virtual data objects are scattered all over the real, physical world' and mobile phones have tangible context-sensitivity (Hall, 2004a).

In location-based mobile phone gaming the mobility of the physical body becomes key to game-play, and the mobile phone and body act together as feedback mechanism and avatar within the combined actual-virtual space (Lahti, 2003). The body is not represented in the game (as for example in the point-of-view or over-the-shoulder style of console and computer games), it is *in* the game, and the game *in* the world, enacting a seamless continuity between the virtual and the physical, and conflating the vicarious link between body and avatar. Moreover, as theorists and developers such as Terry Rueb (2004) and Justin Hall (2004) suggest, location-based mobile games have the potential to engage the pedestrian and motile body and habituate a new range of gestures and movements that bypass the current room- or seat-based restrictions of digital gaming. The elements which would combine to create such next-generation environments are not simply imaginary and fictional with micro-worldly integrity, then, but mutually contingent negotiations between actual and virtual domains — that is, not only can virtual objects be implanted into actual environments, but one can more radically envisage that widespread use of such platforms may eventually effect changes to architectural design and the planning of urban spaces. As such, we might see emergent spatial ontologies of a kind never before experienced in such a collective and interactive fashion.

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Within contemporary theory concerning televisual and screen media, experience is frequently described as disembodied and/or predominantly visual. Against these interpretations, phenomenology can consider the ways that tele-technologies modify the body, and the kind of embodiment afforded by telepresent and mobile media. In this article I have discussed a number of phenomenological issues relating to second and third generation mobiles, including their unique screen properties, the emergent screen-body relation specific to mobile phone media, their capacity to reconfigure our relation to actual and virtual space, and their particular impact upon our corporeality schematics. As I have suggested, mobile devices antagonise any notion of a disembodied telepresence that is sometimes seen as endemic to screen media. While recognising the 'distancings' or alterations to somatic involvement that may inhere in mobile media and



communication, mobile phone 'being' is nevertheless very much embodied, motile and *in-the-world*. The mobile device is simultaneously — and often equally — an aural, visual and haptic interface, requiring an evolving sensibility and inter-modal literacy of which our corporeal schemas, in their ontic flexibility, are inherently and essentially capable.

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