Finding Home: From Space to Place in Transit

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

Trevor Lloyd Morgan
2013.
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Introduction
This research project starts with the proposition that people transform public transit space into personal place by adapting themselves to feel comfortable and at ease, which I define as feeling ‘at home’. The specific research questions it addresses are:

- Can the ways that people transform space into place be revealed in an experiential and subjective way through video artworks?
- What types of media tools would be needed to capture and present the subjective experience of the artist in transit space?
- How would people engage with these artworks?

Addressing the proposition and the research questions involved consideration of the discourse on space and place in terms of my own perceptions of where I am, how I came to be here and where I’m going. This involved thinking about the research project in the context of my personal history of space and place, my past art practice, discourse on space and place amongst humanist geographers, emerging theories of surveillance, and the artistic community of practice in video art. In this context, the project addresses some of the ways that space and place can be explored by using new media tools to focus on visual and subjective experiences of space and place, see Chapter 2: Context.

A Practice Based Research (PBR) methodology was used to create new tools and video artworks to address the central proposition. The three main problems that had to be resolved included the design and development of the tools and resources; the selection of suitable locations, journeys and tasks to perform and record; and the preparation of artworks that could explore and illustrate the subject of interest to engage viewers more fully.

The new media tools that I developed and named were the Personal Documentation Unit (PDU) and Head_X media format. The PDU records space and place from the vantage point of the visual domain of a body in movement. The PDU is a body-worn device comprising five small CCTV cameras concealed in a hat to capture forward, backward, upward, left and right views in the act of motion. Sound is recorded with stereoscopic in-ear microphones. The Head_X media format was then developed and used to review material captured with the five PDU cameras simultaneously in post-production.

The PDU and Head_X media format were systematically applied in a series of creative development cycles to produce artworks that responded to the research questions. This involved repeating journeys and activities while recording with the PDU until I felt as though I had forgotten I was wearing the device, so my movements and experiences would reflect an ‘at home’ experience of place. The recordings were
then reviewed in Head_X format for hundreds of hours to gain a deep familiarity and intuitive ease with the material that merged my lived experience of the recording with the artistic results, see Chapter 3: Methods.

Six video artworks were produced for consideration in the research project.

*Head_X: Commuter Space I & II* were created while the research methods were being formalised and the tools were being developed. They focus on the central theme of how people feel ‘at home’ in transit. *Head_X: Commuter Space I* is a 27-minute video journey that captures a typical urban commute from an apartment in East Berlin to an office in West Berlin. The place of the journey and the feeling of being ‘at home’ is described in the artwork by body movements and sounds in transit space. *Head_X: Commuter Space II* is a 42-minute video journey which captures a routine shopping trip to a media electronics store in Alexanderplatz, Berlin. In this work, the Head_X image construction slowly rotates to distance the intentional view as only one of several perspectives in the recorded visual domain of the PDU.

*Head_X: Exit Zimmerstrasse 12* is a one-minute video loop that explores transitional spaces within a commuter journey (passing from one space into the next). The artwork depicts a transition from the domestic space of an apartment through the communal space of the stairwell onto the public space of the street. It was exhibited at the *Way Out: Laboratorio #4* exhibition in Lisbon (2009).

*Head_X: Washing Up* is a 23-minute video that investigates body spatiality in domestic space, to contrast the movements that were revealed in the commuter journeys. At the Kunstpunkt exhibition in Berlin (2009) it was presented alongside Margaret Raspé’s *Alle Tag Wieder – Let Them Swing* (1974), where comparison of the artworks stimulated discussions about technological change in film and video technology (a recurring challenge throughout the project) and the intentional view she framed through the lens and I framed with my body.

*Head_X3: Ulica Piotrkowska* is a 96-minute video journey of a pedestrian walking up and down the main thoroughfare of Lodz, Poland. It was exhibited in *Archeology of Piotrkowska Street* at the Lodz Biennale (2010) and at Memory of Present, Coup de Des, Berlin (2012). To produce the work, post-production focused on animating the Head_X format to create a three dimensional journey that enabled viewers to engage with the subjective experience of a pedestrian journey from an objective perspective, within the black space of the video frame.
Head_X: Forest is a 20-minute video loop that reveals a 5-minute directionless walk in a thick, forested area presented in four different ways. The artwork was produced in a setting where the visual domain is not related to external reference points, such as a horizon line or the parallel and intersecting lines and planes captured in transit space. It is presented in static and animated versions of the Head_X format.

The artworks drew inspiration from many aspects of everyday experiences, including: how we move through transit and domestic space; how we orient ourselves from a body spatial perspective; the changing perceptions of surveillance and camera technologies in our everyday lives; the technologically augmented body; and how we come to understand new ways of viewing imagery. They are described in detail in Chapter 4: Artworks.

Responses to the artworks came from informal observations and conversations with viewers at exhibitions and studio visits. In these interactions, I compared my sense of the works as the producer and performer of each video journey with the way someone might experience the results for the first time, to re-position myself as a first time viewer. Audience feedback from the interactions informed creative development cycles throughout the project.

The results from the project included the artworks and the research methods that emerged through the PBR methodology. These are described in Chapter 5: Conclusions, together with insights from informal audience feedback and potential ways the new tools could be used in further research by academics, architects, planners, activists and viewers.
Context
The question that has always driven my art practice is: “What is home?” Addressing this question involves understanding where I am, how I came to be here and where I’m going. It’s a topic that considers space and place in a very personal sense, as a spatial orientation on a physical and metaphysical level.

It arises from a lifetime of travel. I was born in Canberra Australia and by the age of sixteen, I had lived in twelve locations, three countries, two continents, and attended thirteen schools, in urban, suburban and rural areas in Australia, Papua New Guinea, and the USA. Each place was a new start, where the triumphs, mistakes and embarrassments of the last place were gone. I quickly adapted to new places and circumstances. I made friends fast, but by the time I formed deeper attachments, my family would move again. I learned the pitfalls of talking too much about where I had been, which made other children envious or bored. I learned to be slightly guarded and careful in my approach.

For my family, moving from place to place was an established routine. The moving company would arrive for a day of pre-packing and boxing while my family cleaned and sorted objects. The next day the truck would arrive, the contents of the house would be taken away and the whole family would scrub the old place clean from top to bottom. Getting to the next city or country was a vacation that usually took the form of a road trip. I vividly recall an 1800 km drive down the east coast of Australia to Point Lonsdale in Victoria and a bus trip from Los Angeles California to Washington DC via New Orleans. I have countless memories of moving landscapes, cities, farmland, deserts, mountains, oceans and skies while peering from a car, plane, train or bus window.

When we arrived at each new house, it was always exciting to explore the domain, by physically placing my body everywhere in the empty house it could fit, inside each cupboard, closet and corner of every room. In hindsight, I realise I was doing what Gaston Bachelard might have described as creating intimacy with place to feel at home (1994). My parents managed the whole routine like clockwork. I loved the excitement of it and knew no different. Home wasn’t our geographic location; it was the continuity of my parents, their routines and attitudes and the process of relocating.

In 1987, after a two-year period in Melbourne Australia, my parents moved again and I stayed behind. I wanted to create a subtle intimacy and understanding with one place over time, which I achieved over the next decade. I became extremely familiar with Melbourne, eventually identifying myself as “from it”. But throughout this period I travelled to South East Asia each year for months at a time on self-assigned,
photographic journeys. I needed to absorb myself in places that were culturally and geographically completely different. I loved returning to my childhood feelings of anonymity and discovery. In the exhaustive editing processes that followed each journey, I came to realise that my artistic focus lies with how people inhabit space in order to create place, irrespective of their geographic and cultural location.

Over the past fifteen years I have created and exhibited photographic and video works on this theme. For example, *Habitation: Human Form as Domestic Space* (CCP Melbourne 1998) studied engagement with the spaces we call home through the technological manipulation of discrete body images, while *Hearth* (Spaceforce, Tokyo 2004; Span Galleries, Melbourne 2003) located a simulated fireplace as the focal point in domestic homes in Australia, Germany, Japan, Lithuania, USA and UK.

More recently, works such as *Parkway Turnpike Tunnel* (Socrates Sculpture Park, New York 2004; Urban Screens Manchester 2007) used video to investigate the way we create a sense of feeling ‘at home’ through repeated commuter journeys in private cars. To create these artworks I mounted a video camera in the back seat of my car looking through the front windscreen to show the journey ahead and its history through the rear vision mirror, see images below.
When I moved to Berlin Germany and started using public transport in place of a private car, I wondered how to capture a subjective view of this experience, navigating and moving through public transit space. These deliberations prompted the key questions for this research project and the idea to develop new media tools for the task.

**Space and Place**

The starting point for this exploration of space and place arose from responses to the video artworks I made in cars, which focused on the way I used repeated journeys to carve a routine that created a sense of home in a new location. I was referred to Kevin Lynch (1960), because he described the customary and occasional routes people use to make their way through cities as important cues for effective mapping. According to John Gold, Lynch saw the sensory experience gained from travelling along paths through urban space as ‘qualitatively important in image formation’ (eds Hubbard & Kitchin 2011 p. 294)

I was also drawn to Yi-Fu Tuan’s interpretation of concepts of space and place as requiring each other for definition. In *Space and Place: The Perspective of Experience*, Tuan wrote of place as security and space as freedom, describing people as ‘attached to the one and longing for the other’ (1977 p. 3). This addressed both the sense of adventure I enjoyed when I relocated to the USA and the sense of security I felt at the wheel of the car I used to navigate and understand my new environment. It also focused my thinking on the car as a fixed and constant point in the journey, which reflected his observation that ‘if we speak of space as that which allows movement, then place is pause’ (1977 p. 6). As a result, I started to envision the car as a place of pause; a kind of second skin or extension of the body or home (Morgan 2006).

When I swapped the car and highways of New Jersey for public transport in Berlin Germany, and started work on this research project, Tuan’s thoughts on space and place provided a useful framework to think about my subjective experience of journeys in transit space, where the private comfort of my car was replaced by my preferred position on the train. This reflected what Tuan would refer to as the need for ‘a personal place, whether this be a particular chair in a room or a particular corner in a moving carriage’ (1977 p. 32).

These ideas were the basis for a limited review of writings on space and its relationship to place. Here, Helen Couclelis’ table of definitions of space and their associated terminologies (eds Abler, Marcus & Olson 1992 p. 231) helped me to position my research methods alongside the academic discourse. For example, mathematical space speaks to the
configuration of the images I produce with my equipment and lenses. Socioeconomic space locates me as an artist conducting research in Berlin. Behavioral space captures the journeys and creative actions in the research project, and experiential space refers to the performances and artworks and what they convey to viewers.

Edward Relph’s emphasis on the importance of place in ordinary human life appealed to me. In *Place and Placelessness* (1976) he asked ‘how could one study place attachment, sense of place or place identity without a clear understanding of the depth and complexity of place as it is experienced and fashioned by real people in real places?’ (eds Hubbard, Kitchin & Valentine 2008, pp. 43-44). To meet the challenge, Relph used a phenomenological method to examine what David Seamon and Jacob Sowers described as ‘everyday human experiences and meanings that are typically unnoticed’.

Around the same time, Tuan defined experiential space (place) as ‘an organised world of meaning’ (1977, pp. 179-183), acquired through feelings, over time:

> How long does it take to know a place? … The visual quality of an environment is quickly tallied if one has the artist’s eye. But the “feel” of a place takes longer to acquire. It is made up of experiences, mostly fleeting and undramatic, repeated day after day and over the span of years. It is the unique blend of sights, sounds, and smells, a unique harmony of natural and artificial rhythms, such as times of sunrise and sunset, of work and play. The feel of a place is registered in one’s muscles and bones.

This research project explores the meaning and experience of place as it is experienced and fashioned by me, a real person, researcher and artist, performing and recording my feelings of being at ease in a real

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2.05: Helen Couclelis’s table of four spaces, reproduced from Geography’s *Inner Worlds* (1992 p. 231)
place, which I define as feeling ‘at home’. It responds to Relph’s question: “how can place be explored through real experiences in real places?” by offering new tools to understand visual and subjective experiences of space and place. The Personal Documentation Unit (PDU) documents space and place from the vantage point of the visual domain of a body in movement, for as Maurice Merleau-Ponty wrote (ed. Edie 1964, p. 178):

I do not see (the world) according to its exterior envelope; I live in it from the inside: I am immersed in it. After all, the world is all around me, not in front me.

Inside the PDU, which I developed as part of the research, five cameras simultaneously capture forward, backward, upward, left and right views in the act of motion, to create what Tuan refers to as ‘a rough coordinate frame centred on the mobile and purposive self’ (1977 p. 12).

Video material captured by the PDU is then reviewed and analysed in Head_X format. This introduces an additional, temporal dimension to the analysis because the camera views can also be perceived as the future (forward), past (backward), and present (left, right and up). The figure below shows still video images in the Head_X format and the individual camera views captured by the PDU.

2.07: The Head_X format and contributing camera views showing stills from a test recording for Commuterspace I
The research project was largely conducted in public transport spaces (railway stations, train carriages and pedestrian precincts) as a laboratory to investigate place and the feeling of being ‘at home’. Transit space can be described by its architecture, rules and regulations, and the journeys of the people who use it. Transit space, like any other, can be considered as a process that is continually changing and made up of our varying relational engagements with it.

Everyday, millions of people traverse complex cities, consciously or unconsciously moving from place to place. From my personal experience as a commuter, I understand that the process of moving through transit space involves establishing and sustaining a set of consciousness levels from the passive to the forewarned, immediate and fully alert. While commuting on a plane, train, tram or bus, one can be immersed in a book, a soundtrack, a phone conversation, or a day dream; relying on an experienced perception of specific and learned attentions, or alert wakefulness, to respond to a great variety of external signals, such as the next stop, public announcements, inconvenient delays and surprising incidents. As commuters we float to work alone, whether in private cars or on public transport, while our cumulative visions interplay with intrusive and ambient signals from authorities. We engage with transit space on a multitude of levels and our thoughts and perceptions constantly change, depending on factors such as the reason for the journey, the mood, the weather and the people and activities around us. Ben Anderson notes Doreen Massey’s description of these factors as ‘products of relations between all manner of heterogeneous bits and pieces that are simultaneously natural, social, political, economic and cultural’ (eds Hubbard, Kitchin & Valentine 2008, p. 231).

My observations of commuters in transit space are documented in the database of hundreds of digital images I captured during the research project with a pocket camera for the inTransit series of images, see Appendix A.

When journeys are repeated over and again, commuters organise their visual and social comfort. At the 1998 International Conference on City and Culture in Stockholm, Birgit Modh described this process as an ‘act of appropriation, when we reconcile our mental and physical place by accepting, modifying and identifying it as a location where we can settle in and be comfortable’ (Modh 1998). Through this process, the experience of the commuter journey can therefore acquire meaning and stability that constitutes a larger place that Tuan describes as a ‘repository of memories and dreams’ that constitute home (Tuan 1977, p. 164).
Seamon & Sowers describe Relph’s concept of ‘insideness’ as when a person feels ‘inside a place, here rather than there, safe rather than threatened, enclosed rather than exposed, at ease rather than stressed’ (eds Hubbard et al 2008, p. 45). As the researcher physically experiencing the transformation of transit space into place, this insideness is what I understand as feeling ‘at home’. I am here, I am in my body, my body is in place, I understand my purpose here, I inhabit space to form place. The concept is also closely associated with repetition. For example, Tuan describes home as ‘a place where everyday is multiplied by all the days before it’ (1977, p. 144). This research project investigates how the feeling of being ‘at home’ is achieved through repetitive journeys.

As previously mentioned, Tuan writes of place as pause. Within the PDU captured commuter journeys, we see the experience of place as pause, when the commuter waits on the platform or stands in a moving vehicle, and symbolically, when the commuter achieves a rhythm of movement or familiarity within a journey that reveals the feeling of being ‘at home’ between origin and destination.

As any railway map shows, transit spaces and places can be identified and recorded as locations in objective terms. From my own recordings with the PDU for this research, it became clear that the Head_X media format I created in the research revealed location as a further dimension of the journey, by identifying the location of the PDU wearer (me) in objective terms. The upward panel presents the transit space above the wearer, while the forward, backward, left and right panels record my position. In this way, still images in the Head_X format mark specific locations at any point in the journey.
The relationships between transit space, place and location that were investigated in the commuter journeys are presented in the following diagram.

**Concealed cameras, surveillance and sousveillance**

These artworks were created in Germany, where the Basic Law (Constitution) provides two rights that impact the artistic action of recording in public spaces: the right to freedom of expression for the artist, and the right to privacy for the people that may be recorded in the work. Article 5 entitles every person to the right to “freely express and disseminate his opinions in speech, writing, and pictures and to inform himself without hindrance from generally accessible sources. Freedom of the press and freedom of reporting by means of broadcasts and films shall be guaranteed. There shall be no censorship.” Article 10 entitles declares: “the privacy of correspondence, posts and telecommunications shall be inviolable” (Bundesministerium der Justiz 2012).
In discussions with German intellectual property lawyers and a transcribed interview with expert Dr. Michael Kummermehr (Appendix D) legal opinions consistently confirmed that the question of which right prevails - freedom of artistic expression or the privacy rights of third parties - is determined on a case-by-case basis in civil law.

Further, to record videos on the German public transit system, artists are required to seek written permission from the Deutsche Bahn, which was granted for this project in 2008, see Appendix D.

Many artists have worked with concealed recording devices in public in the history of photography, film and video art, from Dziga Vertov’s *Man with the Movie Camera* (1929) and Walker Evan’s *Subway Series* (1938-1941), to Toufic Beyhum’s surreptitious recordings of commuters in *Emotions in Motion* (2007) and Paul Graham’s photographs of people on the streets of New York in *The Present* (2007-2011). In *Visions of Modernity* Scott McQuire notes that Vertov’s goal was to observe and record life as it is (1998, p. 15) while Walker Evans described his subway pictures as “what a portrait ought to be … anonymous and documentary and a straightforward picture of mankind” (Evans & Agee 2004, p.198). It should be noted that these artists intentionally selected and framed their subjects in unguarded moments to allow people to be un-self conscious. In contrast, this research project focuses on my movements as the artist, transforming social space into a place where I (and therefore the viewer) feel ‘at home’.

*At the Foot of the Flatiron* (Weed, 1903) presents one of the first recordings of the camera as a distraction when “many, if not most of the people in their short passage through the camera’s frame, look at the camera, and sometimes more than once” (Lewis, 2007 p.42). They know themselves to be subject and therefore ‘present themselves’ (as with mirrors in a lift). But unlike the compact, wireless devices most commuters carry with them today, which are rarely “subject to the quizzical gaze” that caught the attention of the Flatiron passers-by, the PDU is an extensively wired and body worn apparatus that attracts attention and interest (see figure 2.06, p. 17).

Artists have also explored surveillance and sousveillance. Andy Warhol’s *Outer and Inner Space* (1965), introduced concepts of high-tech surveillance to the art world. Julia Scher’s *Security by Julia* (1988) invited the viewer to actively participate in surveillance culture. For example, in a New York Times article about her installations, Michael Rush reported that viewers were seated in front of a bank of monitors showing their own real time surveillance with CCTV cameras, and “invited to make printed copies of their own image as it appeared on the monitors, or to make prints of someone else’s image captured from a half-dozen other cameras sprinkled throughout the space. Visitors could look at
themselves, spy on others and become paranoid about who might be watching them from some unseen location in the gallery, all at the same time” (Rush 2001). More recently Hasan Elahi documented nearly every hour of his life for three years from 2002 by publishing over 20,000 personally recorded images of himself and anyone else who happened to be there, alongside all his financial transactions and tracking his real-time physical location on a map recorded by a GPS device in his pocket.

In Evidence Locker (2004), Jill Magid humanized the Liverpool video surveillance network by sequestering footage of her own movements amongst the crowds in city streets of Liverpool. Here, the passers-by are essential to the work because they signify the social space of surveillance. To humanize her own presence in this context, Magid composed and submitted Subject Access Request Forms - the legal document required to obtain the footage from the government - as highly personal love letters. Once retrieved from the city government she transformed the footage into a personal video diary.

![Evidence Locker](image)

2.15: Jill Magid Evidence Locker Liverpool Biennial 2004

What this research project adds to the community of practice on surveillance and sousveillance is a new system, comprising the PDU and Head_X media format, to observe surveilled space from a body spatial perspective. In this sense, the PDU wearer is a moving observation machine recording spatial experience of surveillance space from the perspective of the body, as a point in place moving through space.

Also, while the objective that guided many of the artworks mentioned above was to capture unguarded portraits of people in transit, my intention was to avoid focusing on any specific individuals in the course of my journeys, as this would distract viewers from the central theme of recording my movements through urban transit space. It was obvious to me that if the PDU was exposed, I would become a spectacle, and this would change the way I am perceived in the space.
and how I react as I move through it as well. Had people around me seen the recording devices, they would most likely have waved or posed before the cameras, or retreated away from me. To address the research questions in this project, concealed recordings were therefore used to record my movements through transit spaces as one amongst many in the crowd.

In addition, during the review phase of the project, when I appraised the captured recordings of my journeys with the PDU, performances that were interrupted by noticeable activities, such as buskers and people selling street magazines, were not used. Any abnormal incidences captured in the journeys that could have caused embarrassment to people (such as people falling over, or stealing, for example) would have also been rejected for use in the artistic works.

After reviewing one of the central artistic works in the project, Dr. Kummermehr stated: “I think, bottom line, your film is perfectly fine. Even if there’s an infringement of personality rights because you publically show certain likenesses and images of people, you make it for one specific purpose: for the purpose of art, and you are very sensible, sensitive to the ethics of the recording process”. (Appendix D)

My views on the subject were also confirmed in a qualitative survey of artists, gallerists and curators to investigate their views on ethics in relation to art practices generally, and the representation of passers-by in artistic works, see Appendix D. The responses consistently showed that the concealed recordings in public spaces, and the inclusion of passers-by in artworks, were not cause for ethical concern. Justifications were twofold. Firstly, respondents strongly believed that ethical conduct in art practice is wholly concerned with the artist’s intention for the work. If the intention is to capture the artist’s performance or gaze, as opposed to tracking an unknowing individual, most respondents believed there were no ethical issues at play. Secondly, respondents argued that artists are entitled to record passers-by in public spaces, as are any other members of the public, with their compact cameras and phones.

In Australia, the Arts Law Centre advises readers of its website that “there are no publicity or personality rights in Australia, and there is no right to privacy that protects a person’s image … it is generally possible to take photographs in a public place without asking permission. This extends to taking photographs of buildings, sites and people” (Arts Law Centre of Australia 2013)

Urban transit space is characterized by vast surveillance systems. For example the UK House of Lords Constitutional Committee on Surveillance: Citizens and State reported that Transport for London used
10,000 CCTV cameras to deliver a safe and secure environment for those who travel and as an essential component of protecting the system from terrorism (2009 p. 340).

But within these networks, Mann, Nolan and Wellman have described the way people increasingly use wearable computing devices to perform inverse surveillance or ‘sousveillance’ (2003, p. 331). Sousveillance occurs when people observe the surveillance network that normally observes them. For example, commuters frequently use their mobile devices to constantly document their experiences in transit. Here they are not necessarily observing the surveillance network, but simply documenting their own experiences. In this context, the PDU was used as a sousveillance device – a portable, personal technology that records an activity by a participant in the activity. By wearing the PDU in journeys through transit, the wearer becomes the camera(s) observing everything that is observed. Transit space becomes a laboratory where the PDU is used to gather data from the perspective of the body, as the point oriented in place and moving through space. The Head_X image then locates the body and presents it’s movement to share the environment it inhabits, which is necessarily a public and social space.

In transit space, surveillance is used to pinpoint the abnormal and different. By contrast, sousveillance with the PDU is used to analyse and de-construct what is normal, banal and ‘at home’.

2.16: A sousveillance necklace, with a wireless webcam dome

2.17: Wearing the PDU as a sousveillance device at the Rosenthalerplatz subway station in Berlin
Defining a community of artistic practice

In addition to the artists who deal with the emerging issues of surveillance, this research project was influenced by a community of artistic practice that has been working with video since 1958 in three broad areas: media technology, media imagery and media content.

To understand the artistic context for the research project, I developed a heuristic diagram that helped me to scope the dominant artistic influences from the canon of video art on this project and position my work amongst these. The diagram comprises three independent but overlapping fields. The media technology field refers to video artists who primarily work with the hardware and technological basis for video. The media image field refers to artists who primarily focus on the process, or form, that conveys the video. The media content field groups together

![Diagram of the community of artistic practice addressing media technology, image and content with this research project](image)

2.18: A representation of the community of artistic practice addressing media technology, image and content with this research project
video artists who largely focus on what is captured in front of the lens. Examples for each of the artists mentioned in the diagram are detailed below.

In this research project the development of the PDU is located in the media technology field; the development of the Head_X media format is located in the media image field; and the focus on feeling ‘at home’ in everyday transit spaces is located in the media content field. None of the fields are reducible to each other: the same technology can capture different content or create different image forms; the same image form or process can be created with different technologies while conveying any imaginable content; and the content itself can be captured with different technologies and presented in many different image formats. For this reason, the research project is logically located at the central point where all three fields overlap, see figure 2.18.

The media technology field encompasses artistic works that focus on material technologies and hardware, such as Nam June Paik’s TV Buddha (1974) and The Electronic Superhighway (1995); and Wolf Vostell’s German View from the Black Room Cycle (1958) and Television Décollage (1963). Both artists used the television as an essential material in the artwork itself, re-purposing domestic hardware in spatial sculptures. This influence on the research project is seen in the way I subverted domestic video recording hardware, together with corporate CCTV technology, to develop the PDU. The major difference is that Paik and Vostell embed the technology in the artwork, while the PDU hardware is only revealed when the viewer de-constructs the Head_X image to discover how it was produced.

The media image field encompasses the framing and form of the presented image as projected light via electrical signal. Here, the artistic influences were on works that focus on the signal output. For example, Peter Campus creates highly technical composite images and superimpositions to explore issues of identity, loss and memory over time. In Three Transitions (1973) Campus asks the viewer to engage with the image as a technical process. Bill Viola explores the everyday human condition using high-end camera equipment to produce extreme slow motion in the lush imagery of The Raft (2004). Here, Viola invites the viewer to absorb every pixel of the produced work. But while both artists present these highly technical images without revealing the technology that creates them, the Head_X media format developed in this research is used to reveal the production process in the artworks themselves.

The media content field refers to the performances and subject matter in front of the camera. In this regard, Bruce Nauman was especially significant because of his seemingly passive approach to the content.
In *Mapping the Studio 1* (2001), for example, fixed cameras are used to present the walls of the absent artist’s studio on the four walls of the installation space. Viewers roll around the space on office chairs to follow the scurrying movements of a cat and mouse chase. By contrast, in the works produced for this research project, the viewer stands in front of the content and sees the invisible artist by observing (my) embodied movement to sense an ‘at home’ feeling in transit space.

Time is a factor in all three fields as it relates to the capabilities of the technology, the manipulation of the image in editing and presentation, and the content depicted in the image. For example video technology records at a certain speed (PAL 25 frames per second) and was invented at a certain time (it’s difficult to imagine any of Naim June Paik’s works in the absence of broadcast television). Time is also fundamental to the image as an electrical process of light and also our perception of how the configuration of the image is conveyed. Media content is a temporal proof or evidence. Time is a substrate from media because the process of media is just structuring time. The use of time in many of the artworks was of interest through the research project.

In the interface between media technology and media image, I positioned Douglas Gordon’s, *24-Hour Psycho* (1993). Here, the famous cinematic work is treated as “a piece of found footage that (is) reframed through technical modification and institutional displacement” (Hansen, 2004, p. 243). Gordon appropriates cinema projection technology from the perspective of video time to dramatically slow the frame rate and deliver a new image. This approach is reflected in the research project by the way video recording technology is adapted to develop the PDU and enable the construction of the Head_X image format. Further, Gordon appropriated instantly recognizable footage from Hitchcock’s *Psycho* (1960) so viewers could focus their attention on recognition, repetition, time and memory. In this research project everyday journeys through transit space and instantly identifiable tasks like washing the dishes are used as a strategy to shift the focus of the viewers’ intention from what is happening to how it is happening, in terms of my body spatiality and its depiction in the Head_X image format.

In the area where media image and media content overlap, I positioned works by David Claerbout. For example, in *Vietnam 1967, near Duc Pho* (2001), a large-scale video projection presents a still image of the disintegrating body of a US fighter plane layered over a moving video landscape. The image format challenges the viewer to reconcile expectations about photography and film, while the content reveals the dimensions of time as history and moving image (Green, 2005). In *American Car* (2002 – 2004) the narrative content presents the passing
of time, as two men sit in a car, waiting for something to happen. In this research project, considerations of time played a significant role in the review process, see Chapter 3: Methods. The content – my real time walking movement – is used as an important technique to enable the viewer to recognise what is happening so they can immerse themselves in the artwork.

In the interface between media technology and media content, I positioned Margaret Raspé’s *Helmut Works* (1974). Here Raspé adapted the technology of the time by mounting a Super-8 camera on a construction hat to record herself performing tasks. The timeliness of the content she selected is also important, because the repetitive domestic tasks she performed provoked gender discussions when the works were first shown. Raspé’s works were of interest in this research project because we share the use of body worn devices to record repetitive movement. The differences lie in her use of the intentional view through the camera lens, and my recordings of embodied movement. These are discussed at length in Chapter 4: Artworks.

Irrespective of their positioning in this diagram, many of the artists have deployed multiple channels, projections and video players to amplify their messages. All of these explorations are relevant or referenced in the Head_X media format, which compiles the five video streams of the PDU in one image projection. For example, Daniel von Sturmer presents a suite of small-scale video projections in *The Truth Effect* (2003) to enable the viewer to playfully experience space within the artistic context. This strikes a chord with my efforts to create a space within the Head_X image format where the viewer can deconstruct the multiple screens within the image to understand what was created in the PDU recordings. On a much grander scale, Paul McCarthy uses multiple projections in *Santa Chocolate Shop* (1997) and *Caribbean Pirates* (2001 - 2005) to re-create his performances in the installation context. My efforts to integrate the recorded performance of *Head_X3: Ulica Piotrkowska* with the installation setting on the same street it portrayed at the Lodz Biennale, could be seen as referencing this approach. An important distinction here is that the multiple screen effect was achieved by projecting the image through a storefront window to deliver two perspectives (interior and exterior) with a single screen.

The influence of the artists cited in the diagram varied over the course of the research project. For example, Mark Wallinger’s *Threshold to the Kingdom* (2000), a slow motion video of passengers entering the arrivals gate at Heathrow Airport triggered my initial interest in creating video artworks, prior to the commencement of the project. During the course of the research, works by other artists were pertinent to specific
deliberations. Xu Zhen’s *Shouting* (1998) was of interest because he provoked passers-by in transit space, although my use of concealed cameras was totally contrary, and works by Shaun Gladwell such as *Storm Sequence* (2000) informed my interest in the creation of a contemplative space for the viewer. Olafur Eliasson’s spatial explorations of Berlin in *Inner City Out* (2010), in which he reveals the techniques used to create the works, made me reflect on my choice to conceal the PDU in recordings by avoiding reflective surfaces. Jess MacNeil’s use of mirrored video streams in works such as *Angle of Incidence* (2012), were a useful point of comparison in light of the various configurations I explored to develop the Head_X media format. Martha Rosler’s *Semiotics of the Kitchen* (1975) was a useful point of comparison for my decision to use a domestic task in *Head_X: Washing Up*.

As stated above, this research project is positioned where the three artistic areas overlap. The PDU addresses the media technology, the Head_X format offers a new way to edit and present the media – image captured by the PDU, and the performance of the moving body that wears the PDU in transit spaces provides the content. Because the body, as opposed to the intentional view through the lens, frames the content the project is positioned slightly away from media content in favour of media technology and media image. I see the works of two artists particularly in this overlap, Jeffrey Shaw and Gary Hill.

Parallels can be drawn between this research project and Jeffrey Shaw’s large-scale media installations such as *PLACE-Hampi* (2006) and *Configuring the CAVE* (1996), because they entail the development of new media technologies, new modes of image display and immerse the viewer in a recorded space.

Shaw’s *PLACE-Hampi* (2006), for example, was developed in collaboration with the iCinema group to forge new ground in the area of media technology and media image, and to comment on the media that is used to present the image and the perception of the image itself. According to the iCinema website, *PLACE-Hampi* is a virtual landscape, comprising sixteen cylinders with augmented high resolution stereoscopic panoramas, a Data Terrain Model, 3D projections, computer graphic characters, a user interface that enables interactive viewer exploration and a spatial aural field made from decoded ambi-sonic 360 degree recordings.

“This real-time interactive rendering and delivery system (uses) sophisticated mapping and transformation strategies that the user controls (to) navigate the space (in) a sonic experience, which is intimately and deeply connected with the visually presented and augmented space. *PLACE-Hampi* articulates an unprecedented level of viewer co-presence in
the narrative exploration of a virtual cultural landscape ... the work is ... at the forefront of international developments of virtual environments and the complex arrangement of technical and aesthetic parameters that are required to develop them” (iCinema, 2013)

The collaborative effort needed to produce the work spans three countries and comprises over 15 investigators, the award winning Paprikaas Animation Studio and two multi-disciplinary research institutes; the iCinema Centre for Interactive Cinema Research at UNSW and ZKM Karlsruhe. But while the scale of Shaw’s vision necessitates international collaboration and institutional resources, my objective is to work with the home made, by adapting and developing the new PDU technology from readily available products, such as portable video recorders, in-ear microphones and a 12 volt battery, and developing the new Head_X image format using off the shelf software on a personal computer. In this sense, my development choices construct the subjective and personal theme of the research project – feeling ‘at home’ in transit space.

For me, the spectacular content in Shaw’s work plays a supporting role as the touchstone for the user to engage with the image and technology. PLACE-Hampi reveals the “drama of Hindu mythology at the most significant archaeological, historical and sacred locations of the World Heritage site” (iCinema, 2013) while Configuring the CAVE immerses the viewer in a richly symbolic virtual environment that “assumes a set of technical and pictorial procedures to identify various paradigmatic conjunctions of body and space” (iCinema, 2013). While the content of my work could also be seen as secondary, the major difference is that I am not interested in new and augmented worlds, or the genre of the spectacular, but the everyday settings of the transit system. The familiarity of the content in my works is the key strategy I use to help the viewer relate to and mentally position themselves in uninterrupted, unedited journeys that are personalized by my movements, the embodied technological device and the embodied image.

Finally, the actions of the viewers in relationship to the works are clearly opposite. In Configuring the CAVE, Shaw creates a fantastic interface in the form of a “near life-size wooden puppet that … can be handled by viewers to control real time transformations of the computer generated imagery and the sound composition.” (iCinema, 2013) In my works, there is no intention for the viewer to directly interact and manipulate the content. Rather, the viewer is a passenger in the journey, not the driver. I want the viewer to perceive the image as I produced it, and engage with it in an internal dialog, by orienting themselves within it to make the captured space their own.
The work that is most closely related to my work with the PDU is Gary Hill’s *Crux* (1983 / 1987). To create *Crux*, Hill attached five video cameras to his body as he moved through a wooded area in upstate New York. Three cameras were attached to his chest, one directed toward his head and two toward his feet, while the other two cameras were strapped to his hands viewing outward, emulating Christ. The captured video was then projected simultaneously to five monitors mounted in the shape of a crucifix.

The similarities between Hill’s *Crux* and the PDU include the use of five body-worn cameras, the intention to capture movements through space and a resulting installation that explores the nature of the video medium, conveying it as a language for the body - video as body, body as video. The dissimilarities are stronger and arise from the intent of the work, positioning of cameras and their influence on body spatiality, and installation design. My interpretation of Hill’s work is that he set out with the intention to undertake a metaphysical exploration of spiritual crucifixion. This is observed in the arrangement of the cameras, the installation and subject matter - a man alone in a decaying, autumnal landscape.

By contrast, I work in the landscape of everyday urban space and use the PDU to situate myself within it. I use my body as a platform to capture video data and then create works from the resulting material. Hill’s work depicts the divine body moving toward death. In my work, I am the human body in everyday life trying to understand where I am.

As to the positioning of the cameras and their influence on body spatiality, Hill’s choices in both subject and technology dictate a series of unnatural movements that pre-determine the visual result, which is then consumed by the viewer as an objective view of the artist (we see his head and feet). By contrast, the five cameras in the PDU are positioned to capture the visual domain and the technology is designed to investigate the spatiality in and amongst people. This enables the viewer to consume the work as the subject of his or her own journey, as a passenger in the artwork, inhabiting the absent body that recorded the imagery by wearing the PDU.
Methods
**Methodology**

My creative practice typically involved a studio-based research form of inquiry that interwove what I thought were good ideas with reflections on the results of making them. One of the challenges in this research project has been to contextualise these formerly adhoc processes in a Practice-Based Research (PBR) methodology. PBR encompasses the work of art itself, the creative process of making it and the process of documenting and reflecting on the research to generate new insights.

According to Linda Candy at the Creativity & Cognition Studios (http://www.creativityandcognition.com, UTS 2011), if the contribution from the research is a creative artifact, the research is practice-based, while if the research primarily leads to new understandings about the nature of practice, it is practice-led. While both types of research co-existed in this project the practice-based development of the artworks dominated. Hazel Smith and Roger Dean have positioned PBR in an iterative cyclic web that interlinks it with research-led practice and academic research. They claim that PBR involves idea generation, subjective or systematic idea selection, and investigation and extrapolation from the idea. Chosen ideas are developed, the artistic processes are documented and the artworks are produced (2009, p. 20).

Simon Biggs focuses on PBR in new media art particularly, which involves the development and application of emerging media tools and systems. He argues that because it involves new tool development, PBR in new media differs from other forms because the resulting artwork ‘embodies novelty within the expanded set of criteria’ (ibid p. 66).

In this project, a PBR methodology was used to create new tools and video artworks to explore the research questions and also present the results. The three main problems that had to be resolved in the methodology were the design and development of the tools and resources; the selection of suitable locations, journeys and tasks to perform in the recordings; and the preparation of artworks that could fully explore and illustrate the subject of interest while engaging viewers.

After the development of the beta version of the Personal Documentation Unit (PDU) a cycle of creativity began to emerge. In hindsight, this reflects other cyclic processes such as the Resources, Score, Valuation and Performance (RSVP) developed by Anna and Lawrence Halprin in the late 1960s to describe their landscape architectural work with community groups.
Methods

The methods used in this project were executed in an iterative creative cycle that emerged over the first few years of the investigation. I came to understand that each creative cycle started with the selection of the content, followed by optimisation of the resources to record the work, then use of these tools to capture raw video material, followed by review of the material in post production, presentation of the works as installations and reflections on the results. The phases in the creative cycle are depicted in the diagram below.

The selection phase involved deciding what the work would be about and which specific research questions it would address in the context of the overall theme of finding the ‘at home’ feeling in transit space. Decisions focus on the type of environment to capture (transit space, transitional space, domestic space) and the type of journey to perform. These “what” and “where” questions influenced the “how” questions that shaped the resources phase.
Resources were defined by practical limitations like time, money and availability, and posed a far greater challenge, as the new PDU media tool and Head_X media format had to be designed to capture and review the material. To this end, two subsidiary, iterative development cycles were completed to develop and optimise these resources. Months of effort were invested to try to source suitable equipment, followed by lengthy periods spent adapting available, off-the-shelf components, only to find new, commercially available alternatives a few months later.

In the capture phase I wore the PDU on repeated journeys to record a database of images and sounds as raw materials for the artworks. Capturing the recordings was an intense, iterative process. In hindsight, this method could be described as a performance that started when I put on the PDU and ended when I forgot I was wearing it.

In the review phase, the five mini-DV tapes captured by each PDU recording were transferred into the Head_X editing format for detailed examination and post-production.

In the presentation phase, decisions were made about the scale and scope of the installation and the surfaces and techniques to be used to display the images, to ensure that every aspect of the installation conveyed the context for the artworks and the research exploration.

The final reflection phase involved listening to informal feedback from viewers of the work at galleries and studio visits, reflecting on the style and substance of the artwork and thinking about whether it conveyed my original questions to the audience.

**Selection Phase**

Selection involved deciding which specific research questions each artwork would address in light of feedback from the preceding work. The methods used in this phase involved elaborating the findings from the already produced artworks and pre-visualising potential options for spaces and places where the feeling of being ‘at home’ could be investigated. The following description covers the particular methods of pre-visualisation and comparison from one work to the next throughout the research project.

The selection phase for *Head_X: Commuter Space I & II* was the starting point. The selection phase for these works was based on earlier video
projects that explored commuter car journeys in New Jersey and subsequent exploration of public transit spaces in Berlin. The strategies to determine the selection decisions included thinking about journeys with which audiences could easily identify; concentrating on familiar journeys; and looking for journeys with multiple transitions between spaces. Because the PDU was not fully functional at this point, I documented my intentional view on several everyday journeys with a compact digital still camera to provide a body of material for initial comparison. One narrative, which was presented at ICFM 2006, deconstructs the journey from my apartment to a night school on the other side of the city where I took German language classes three times a week. A detailed written narrative of this experience is included in Appendix B.

Typical commuter journeys to and from work were selected for exploration in Head_X: Commuter Space I, and typical journeys to and from neighboring shopping centres were selected for Head_X: Commuter Space II. All these journeys started from and returned to my apartment to explore the feeling of being ‘at home’.

The selection phase for the next cycle of work analysed the commuter journey videos as transitional spaces where different environments collide. Typical sequences included passing through doorways, moving from private to public spaces and stepping onto trains. To create Head_X: Exit Zimmerstrasse 12, I selected the transitional space from the privacy of my home, through the communal space of the building stairwell, onto the public space of the street, to sharpen the contrast between being at home and feeling ‘at home’.

Head_X: Washing Up selection decisions focused on the starting point for all my commuter journeys, domestic space. Here the strategy was to capture generic and easily identifiable routines, so cleaning the kitchen was an obvious choice. The selection phase for the next cycle Head_X3: Ulica Piotrkowska was influenced by my responses to the reflexive movements that were revealed in Head_X: Washing Up. Here, walking the journey was the strategy used to feel ‘at home’, for as Tuan writes ‘human beings feel at home on earth … striding down the path in complete confidence’ (1977, p. 199).

In the selection phase for Head_X: Forest, it was necessary to find an environment to contrast with the transit spaces in urban Berlin. A small forest was selected where the trees were sufficiently dense to mask the horizon line and remove general urban noise and local people. The movements captured in the material were a logical response to the landscape and were physically associated with adventure and play, contemplation and relaxation.
3.02: Excerpt from a documented photographic narrative of my intentional view in a routine journey, see Appendix B
During the research project, some selection decisions were made and subsequently rejected, such as commuter journeys on bus transport where I found the sound of the engines too distracting in the review phase. More significantly, collaboration with the Hasso-Plattner Institute in Potsdam was discontinued in the very early stages of the project when I was finalising the research proposal. The Hasso-Plattner team was developing visualization technology for a large-scale, real-time 3D city-model of Berlin that attempted to approximate the cognitive maps people develop about their environment. The intention was to incorporate my PDU recordings into reflective building surfaces inside the city model to develop a unique visualization tunnel.

We jointly presented a conference paper about the collaboration at the Vital Signs Conference at RMIT University in Melbourne (2005) and subsequently produced an alpha test, in which a reflection of a moving train I recorded with a CCTV camera for the prototype PDU was embedded on the virtual glass exterior wall of an office building inside the 3D city model. I decided to discontinue the collaboration, as the results seemed too technical and removed from the experiential perspectives I planned to explore with the PDU. For more information, see Appendix C.

Resources Phase

The resources phase in my art practice generally varies according to the availability of the necessary tools and materials. In many instances these are commercially available, so the resources phase involves selecting the right equipment for the task. (For example, the inTransit images created throughout the life of this project were captured with a commercially available digital pocket camera.)

The research questions required tools that could capture my visual domain as I moved through transit places, with a media format that could be used to review the information and present the concepts to viewers. I searched the market for suitable, off the shelf cameras without success and therefore decided to adapt existing technology to develop a Personal Documentation Unit (PDU). After the PDU imagery was captured with the PDU, I need a way to view and edit the five video feeds simultaneously. The only available solution, a professional editing studio with multiple screens, was beyond my financial reach, so it was necessary to develop a new media format, Head_X.

The PDU was developed in an iterative cycle from “develop and adapt” to “test and perform” to “reflect”, over three years. Head_X was developed
in a simpler iterative cycle from “configure” to “reflect” and back again during eight months of trial and error, see figure below.

These cycles occurred during a period of rapid technological change. For example, the first versions of the PDU were developed by appropriating existing digital-analogue video technologies, which became obsolete during the development cycle itself so equipment for each version of the PDU had to be sourced second hand on eBay. By 2010, when all of the recordings for the project had already been captured with the PDU, a Californian company called GoPro® Inc launched fully self-contained, wearable HD cameras that professionals and amateurs now use to document sports activities with video. My experience developing, adapting and improving the initially cumbersome PDU reflects Susan Sontag’s observations in on photography, technological change and widespread use of media. She wrote:

That age when taking photographs required a cumbersome and expensive contraption - the toy of the clever, the wealthy, and the obsessed - seems remote indeed from the era of sleek pocket cameras that invite anyone to take pictures. (1977, p. 7)

Technical support services were scarce in Australia and Germany, where manufacturers and retailers no longer supported the component devices inside the PDU, so I had to rely on academics and enthusiasts for technical assistance. In poorer regions, however, like Lodz, Liverpool and Lisbon, skilled electricians were available to provide PDU design support and maintenance.
Methods used to develop the PDU

Before starting this research project I regularly commuted by car through New Jersey and recorded the journeys by fixing a video camera in the rear seat to capture my view of the road ahead and the road behind in the rear-view mirror. It became very obvious that in order to explore the commuter experience as a pedestrian, I would need to develop a fully mobile recording unit to capture my visual domain. This involved capturing my field of view, a hemisphere defined by the plane on which I was standing and the surrounding horizon. I can look straight ahead and also turn up, down, left, right and behind, with peripheral vision from each perspective. I also wanted to document my movement in terms of the future (forward), past (backward) and present (left, right and up) and to improve on my limited sensory memory, by using multiple cameras in video.

The problem was solved by developing the PDU, which includes five small CCTV video cameras and recording devices sewn into my hat and vest. The five cameras capture the environment around me in real time so I can record my movements through transit space.

As shown in figure 3.3, the PDU was created in an iterative development cycle comprising three phases: develop and adapt, test and perform, and review. Each iteration of the cycle produced ideas to refine and improve it. Four cycles were executed to deliver: a Beta PDU with two cameras; PDU 1.0 with five cameras and side bag; PDU 2.0 with five cameras and vest; and PDU 3.0 with five self-contained HD cameras. The controlling factors in each iteration cycle included technical feasibility, image quality, ergonomic comfort and concealment.

It was clear that the CCTV cameras, wiring and recording equipment in the PDU were extremely obvious to other people. If I wore the device without concealing it, I would become a focus of attention or spectacle in transit space, which would change the way I was perceived by others. I envisioned other commuters encircling me and at best, waving to the cameras for example, or at worst, reporting me to the authorities. Both responses would prevent me from documenting my experiences as an ordinary commuter in transit space. I didn’t want to disrupt passers-by in the manner of artists such as Xu Zhen, who intentionally alarmed commuters by screaming at them to capture their startled reactions to his intrusion in their space (Shouting 1998, 2005).

The solution was to carefully conceal the PDU so I could wear it without causing attention; to carry a permit to record material from the Deutsche Bahn whenever I was recording, and to investigate the potential ethics of this decision in a survey of artists and curators.
To do this I conducted a qualitative survey of artists, gallerists and curators over the first two years of the project. Fourteen one-hour interviews were conducted using a discussion guideline that investigated their views on ethics in relation to art practices, and their experiences and opinions about the representation of passers-by in artistic works. The responses consistently showed that the concealment of the PDU device in my recordings in public spaces, and the inclusion of passers-by in the artworks, was not cause for ethical concern. The justifications for this were twofold. Firstly, respondents strongly believed that ethical conduct in art practice is wholly concerned with the artist’s intention for the work. If the intention is to capture the scene, as opposed to tracking an unknowing individual, most respondents considered the ethical issues were negligible. Secondly, respondents argued that artists are entitled to record passers-by in public spaces because of the prevalence of surveillance and personal image capture with compact cameras and phones. For more information, see Appendix D.

**Development cycle one - Beta PDU: two cameras**

The Beta PDU consisted of two CCTV board cameras attached to the plastic interior suspension of a hard-hat; a custom-designed mobile power supply with toy train batteries; two rented Sony Handycams®; and a black woolen hat that concealed the cameras on my head. The two cameras were positioned to capture my unintentional and rear views, silently. The wiring from the CCTV cameras ran under the jacket into a shoulder style camera bag holding the recorders and batteries. I tested the device in a 30-minute walking journey from my apartment to the nearest underground station, onto the platform, in and out of a train and back to my apartment, with a friend accompanying me at a distance for security and to observe how other people reacted to me. He did not engage with me but was often in view and in effect became ‘an actor’ in the recording, which I felt led viewers to expect a narrative that would
distract from the central concept of space and place in transit. The test indicated that the recorded image quality was good, the CCTV cameras responded well to changing lighting conditions and no one paid any attention to me.

I noticed that my own movements responded to movements of people behind me, with slight, unintentional movements of my head, suggesting that my body spatiality could be of greater consequence in the produced work than the intentional view of the journey. Other people who were shown the resulting video test were drawn to the anterior scenes, which they often mistook for the intentional, forward view. This focused their attention on the work and stimulated discussion. They appeared especially interested when observing reflective surfaces, where they could see the entire field of view but not the mechanics of how that view was captured. That led to my decision not to reveal the mechanics in the finished artworks, in contrast to Olafur Eliasson’s Innen Stadt Aussen (2010) where the recording mechanics are intentionally revealed.

Iterative cycle two - PDU 1.0: five cameras, side bag and sound

The results from the beta test encouraged me to use the next twelve months to build and improve the PDU 1.0, which incorporated full stereoscopic in-ear microphones to faithfully record the sounds of my journeys. Over the next year I sourced equipment components on eBay and in electronics stores and worked with technicians to wire, test and redesign the device. PDU 1.0 comprised five CCTV board cameras attached to the plastic interior suspension of a construction hard-hat positioned to capture my intentional, rear side and upward views; the same mobile power solution source developed for the Beta PDU; five
Sony Handycams®; and Soundman® stereoscopic in-ear microphones connected to a Sony MiniDisc® player. The wiring was gathered into a loom that ran under my jacket into a camera bag I carried over my shoulder, containing the recorders and a lead-acid 12-volt battery. PDU 1.0 had five times the equipment used in the beta version and weighed 8 kilos. I collaborated with a milliner to design hats that would inconspicuously conceal the PDU headpiece. We selected a close fitting black felt helmet that was unnoticed in winter in Berlin, when most people wear heavy clothes and hats.

I tested and performed twenty 30-minute journeys with PDU 1.0, from my apartment on the East-West border in Mitte-Kreuzberg to an office building in West Berlin and back, gradually becoming more comfortable and ‘at home’ with the equipment. Although the head apparatus in PDU 1.0 was comfortable, the device was very cumbersome to wear. Also, because the cameras were not designed to be jostled about in movement, they worked intermittently and there were many technical problems. I had to be careful every time I sat down to avoid affecting the wiring and disrupting the recordings; the size and weight of the shoulder bag made it difficult to move freely in crowded spaces; and the weight of the bag caused me to lean as I walked, distorting the point of view of the images. I was too conscious of the PDU 1.0 apparatus when I wore it to truly feel ‘at home’ as I moved through transit space, so it was necessary to adapt and improve the solution to allow me to move as if I were not wearing it.

Iterative cycle three: PDU 2.0: five cameras and vest

The results from the PDU 1.0 tests shaped the development of PDU 2.0. In this cycle, work focused on improving the ergonomics of the device, by replacing the cumbersome shoulder bag with a multi-pocketed Norwegian tactical army vest.

The pockets in the vest were made of Lycra and re-positioned in the most optimal locations to hold the DV Handycams®, battery and minidisk player, each pocket fitted correctly to support its device. The elasticity and translucence of the Lycra pockets made it easy to place the recording equipment in the jacket on my own and check that everything was working. The vest enabled a full range of movement, felt a lot more comfortable to wear, and helped me to feel a lot less conscious of the equipment during performances. The heavy battery unit was housed in a pocket in the small of my back so I could easily sit, which also counter-balanced the five Handy cams on my front; and I worked with a video production facility repairman to adjust the length of the wiring to suit the jacket. The PDU 2.0 became a wearable recording device that captured my body spatiality as I moved through repeated journeys in transit space.
The decision to change from the shoulder bag to the vest was transformational. For example, when I decided to perform routine domestic chores with the PDU, I didn’t anticipate the difficulties of moving with a heavy side bag, so the ergonomic changes in PDU 2.0 illustrated key concepts underlying my body spatiality. I felt comfortable wearing the device and used it to record journeys and tasks that required uninhibited movement, such as loading the dishwasher, making the bed and riding my bicycle to the supermarket.

The remaining technical problems involved: the many wires and connectors that came loose through my movements; the performances that had to be interrupted to rewire or repair the wiring; wires that melted (the device caught fire once); and the heat and discomfort of wearing all the equipment under a jacket.

**Development cycle four: PDU 3.0 with self-contained HD cameras**

The PDU 3.0 is a work in progress that uses commercially available GoPro® HD cameras. The device comprises five self-contained cameras with Wi-Fi backs, mounted to an armature based on an American football

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3.13: PDU 2.0

5x CCTV board mounted cameras with 3.6 mm lens,
Plastic Hard Hat suspension,
Wiring for video-in and power,
Woolen winter hat,
5x Sony DV Handycam®
5x Extra 7.2V Li-ion bateries,
5x MiniDV 60 minute tapes,
Handycam® remote control,
12V7Ah rechargeable battery,
Soundman® OKM II in-ear binaural microphones,
Sony Hi-MD MZ-200 MiniDisc Player/Recorder,
Modified army vest
helmet. Each camera has an in-built, re-chargeable power supply and a 32 Gigabyte SD recording chip, so there is no need for a jacket to house separate recording devices and batteries, and hence, no wiring problems. The PDU 3.0 records full HD video at 50 frames per second, but lacks the pixel depth of earlier iterations, although camera quality is continually improving.

Because PDU 3.0 is simply a headpiece, it can be used in many more settings with far greater freedom of movement. For example, the device is now being used in an experimental film where the actors take turns to wear the PDU to record their subjective experiences, scene by scene. During pre-production in 2013, choreographers are working with PDU 3.0 to design a scripted body language that tells the narrative, based on a series of emotional and physical encounters set in domestic and exterior public space around Berlin.

3.15: Actor wearing PDU 3.0 - test scene for CIRCLE 2012, Berlin
Development of the Head_X media format

Having made the decision to capture five videos simultaneously with the PDU, it was necessary to review and edit all five views on a single screen. There was simply too much data to watch each video individually and then comprehend holistically what had been captured. A new visual platform was needed to understand what had been captured with the PDU and make decisions about how to use the material. As shown in figure 3.3, the Head_X media format was created to achieve this in a simple iterative cycle from “configure” to “reflect” and back again during eight months of trial and error.

In the first cycle I viewed multiple Quicktime movies on a large computer screen and arranged them in different ways to see the multiple perspectives at one time. My goal was to find an understandable way to identify the narratives that might be created within the work. In the next cycle, I imported the Quicktime movies into Adobe Aftereffects editing software to arrange and analyse different configurations.

The first configuration was a basic grid created with the forward, backward, left and right views, and a separate up view. I wanted to see how the visual representation of the journey changed in tone and intent when the images were presented in a clockwise or anti-clockwise direction and other combinations. I found there was no clear distinction

3.16: 4POV & UP configuration with the forward view in the top left corner, rotating views in an anticlockwise direction and separate up view.
in tone or aesthetics, when the views were arranged in a clockwise or anti-clockwise direction, but there were distinct differences when the body or head turned from right to left or left to right. When I moved my head abruptly to the left or turned my body in an anti-clockwise direction and the image was configured in a clockwise or opposite direction, the effect worked against the movement. As soon as this occurred, the observer watched the technical image construction in third person, thereby distancing themselves from the lived experience. After working with 24 possible combinations, I realised that the major problem with the configuration was how to integrate the up view. Also, I tended to focus on the intentional view while scanning the other views periodically and rarely saw the whole image holistically.
In the next cycle, I configured the images in a linear narrative format. I configured the images in every conceivable order and was surprised to detect little difference, apart from occasional aesthetic shifts. The figure below depicts the order that made the most sense for me to perceive the captured journey. Other combinations also made sense, because all the views are captured simultaneously, in the same location, at the same height and with the same subjective bodily experience. The only positional choice I felt strongly about was that the front view should be between the left and right views, to make the overall image easier for viewers to understand.

Observing turning actions and abrupt movements in this configuration was interesting, but seeing the views in a single row on screen (within a 16:9 HD frame) made them small and photographic. The borders between each image were pronounced and created a further level of abstraction. On reflection, I decided to move away from a linear format and focus on a more immersive approach.

In subsequent cycles, I configured the views as a Plan View of a Cube, a Plus Sign, an Inverted T and a Plus Cross Box. In each configuration, I considered the placement of each of the screen views in many possible combinations. Each iteration was then discussed with other artists to gauge their reactions and see how they consumed the image. I was particularly interested in whether they could view the image holistically, and whether they concentrated their gaze on one view more than another. Each configuration had advantages and disadvantages, which are detailed in figures 3:19 to 3:22.

The eventual solution depicted in figure 3:23 turned the Plus Cross Box configuration 45 degrees. This transformed the configuration to an ‘X’ shape that references my “on the spot” location. The forward view is abstracted and equalised by placing it on the same angle as the other four directional views. The final Head_X format achieved my goals by presenting a holistic image of the five PDU views in a single image.
3.19: Plan View of a Cube configuration

In this configuration, I could easily envision myself standing in the central empty space on the floor of the installation, with the images on the surrounding walls and ceiling. The configuration was rejected because my gaze was drawn to one individual view at a time and then back to the central empty space. Also, to render the configuration with full resolution inside one video frame, the individual views would be too small.

3.20: Plus Sign configuration

To address the height problems of the previous construction I decided to move the ‘up’ view into the center. Although it created a larger, more compact image, the results didn’t feel holistic: borders between the images disconnected them from each other and drew the gaze to individual views. Also, because of the way I read the configuration (up and down then left to right) it referenced the Christian cross, which had nothing to do with the subject matter or intent.
3.21: Inverted T configuration

To avoid the religious references and achieve an integrated dialog with the different views as a whole, I moved the left and right views to the bottom of the image in an inverted ‘T’ shape. In this configuration, my visualization of the virtual cube space was of the top two views folding toward me, the ‘up’ view folding downward and the ‘left’ and ‘right’ views folding toward me to finish the cube. Even though I found this easy to view holistically and I liked the way it presented architectural space, this configuration didn’t represent a cube space.

3.22: Plus Cross Box configuration

Revisiting the Plus Sign I decided to turn the ‘left’ and ‘right’ views 90 degrees and the ‘backward’ view 180 degrees to orient the upper most part of each image with the ‘up’ view in the center. In order to abut all five views I cropped the ‘up’ view image left and right to make a square. This created an immediate spatial understanding and recognition of the way I visualize my movements through space.

The problem was that this configuration overly drew my gaze to the ‘forward’ view as the only upright view; and the shape still conveyed religious references I wanted to avoid.
3.23: Final *Head_X* configuration

The final configuration turns the entire *Plus Cross Box* 45 degrees. This transforms the configuration to an ‘X’ shape that references my “on the spot” location in the space. The ‘forward’ view is abstracted and equalised by placing it on the same angle as the other four directional views.
Capture Phase

To create a sense of feeling ‘at home’ in the artworks, the capture phase of the research was designed to make me feel comfortable and at ease, not only with the PDU equipment, but also with the action of performing the repetitive journeys through transit space. Specific methods were used to record the journeys such as routines to test and initiate recordings with the PDU, and repeated performances to attempt to move reflexively, in what I felt to be a truthful representation of my journeys (as though I were not recording them).

The PDU was worn on journeys and during activities to record images and sounds as raw materials for each artwork. The objective was to document my everyday movements, so the captured videos would reveal how I move and orient myself to create a sense of feeling ‘at home’ in transit space. Because the PDU records these movements in a highly unnatural, technologically augmented way, the challenge was to achieve a comfortable familiarity with the device to a point where it only captured, but did not alter my routine reactions to the environment. My strategy was to achieve a gradual transition from acute awareness to comfortable familiarity, based on repeated performances that commenced when I put on the PDU and ended when I forgot I was wearing it and eventually turned it off.

Each performance started when I checked the devices, re-charged the batteries and made sure each camera had a pre-labeled Mini-DV tape. I stood in front of a mirror, put on the vest and head device, and connected each Handycam® to its corresponding CCTV camera before placing them into the vest pockets and checking that the cameras were in focus. I put in my in-ear microphones and connected them to the MiniDisc® player, pressed record, placed it in the vest and, with a remote control, turned all the Handycams® to record, checking that each screen was active and the recording lights were on. Once all five cameras were sending clear signals to the Handycams® and the MiniDisc® player was recording sound, I entered a small room, shut the door and turned the light on and off a few times, clicking my fingers in front of the cameras to synchronise the material in post-production. These routines immersed me in the technology so I could establish a sense of familiarity with the PDU that was fundamental to achieve my objectives in the performance of the journeys.

The next phase of the performance was the enactment of the selected journey. The journeys I selected were already familiar to me as a commuter. The accumulated history of commuter journeys I had made before the research project began defined my sense of feeling ‘at home’ in Berlin, the
place where I live. I knew, almost instinctively, how many steps to take
down the stairwell, how many minutes to walk from the apartment to the
station, where to stand on the platform to optimize my arrival at the next
stop, when to sit back and relax in the carriage and when to prepare to
alight. But in performance, this ease was replaced by a sensation of intent
and awareness, brought about by three acute sensations to overcome:
how to use the complex PDU technology; how to move while wearing
it in transit space; and the self consciousness of the act of performance
itself.

The initial performances felt awkward and uncomfortable. My concerns
were mostly about whether the thirty or more technical components in
the PDU would work correctly. For example, the microphones often fell
out of my ears, loose wires disrupted signals to the recording devices,
batteries failed or I ran out of tape and mobile phone usage in my
immediate vicinity caused noise disturbance. Whenever it rained, I ran the
risk of a droplet landing on the upward camera lens, creating a watermark
on the recording or losing focus. In several instances, strong wind forced
the earflaps of my hat to fly upwards, covering the left and right lenses,
which I corrected by tying the flaps to each other under my chin with
fishing wire. Other disruptions occurred when commuters asked me for
directions, buskers and street newspaper sellers performed in the train
carriage, or I emerged from the station to find myself in the middle of a
Christmas market, taking the focus of the recording away from everyday
movement. Additionally, when train carriages were crowded for example,
I sometimes found myself locked in a position where my face was reflected
in the train window for a period of several minutes, which made me think
carefully about walking, sitting and standing near windows and mirrors.

I was also acutely aware of my general physical comfort with the PDU,
which weighs 8.6 kilos and often overheated (in one instance, catching
fire). Here, the transformation to PDU 2.0, which distributed the weight of
the camera and batteries around my body in a tactical vest, was a turning
point, because this allowed a full range of movement, felt a lot more
comfortable to wear, and helped me to feel a lot less conscious of the
equipment.

Overarching all of the technical factors was the concern that people
around me would see and react to my equipment, by waving at the
cameras, or moving away from me with alarm, or stopping me to ask what
I was doing. But once I had overcome the technical issues and performed
each journey several times I became confident that people did not see
the equipment. This enabled me to focus on the performance, which
brought additional challenges. Because I understood where the PDU
cameras were positioned and how they framed the environment around
me, this created the temptation to position and tilt my head to capture
objects, as I would during a normal photographic shoot. I found myself looking out for interesting locations such as street vendors and landmark buildings and crisscrossing the street to frame the PDU captured imagery.

To overcome all of these limitations and temptations, I repeated the performance of each journey, over and over again. Through repetition, I gradually became more confident and comfortable with the technology, concealment, security and ergonomics. For example, I attempted the Head_X: Commuter Space I performance at least fifteen times before I felt I had achieved a successful recording and then iterated the performance another ten times until I was satisfied with the result. For Head_X: Commuter Space II, the performance was repeated ten times. For the performance walks on Piotrkowska street, when I was building a physical history with the street, the capture phase was particularly exhausting as I rehearsed and performed the work 22 times, over 18 hours and a total of 100 kilometers. The more I walked, the more I felt a part of the street. All the while, the physical action of repetition introduced elements of endurance and boredom that helped me to achieve the sense of feeling ‘at home’.

At some point, though I wouldn’t say that I was entirely unaware of the PDU, I felt sufficiently relaxed and at ease with the equipment and the journey to stop repeating the exercise. The capture phase of the development cycle greatly affected the evolution of the resources that were used, while also establishing a lived memory of the journey which was then analysed, distorted and superimposed through the mediated process of post-production, which followed in the next phase of review.
Review Phase

The methods used in the review phase were based on conventional video postproduction techniques with greater emphasis on repeated viewings of the source material on the Head_X editing platform.

Every video from each of the five PDU cameras was reviewed individually as it was being converted from mini-DV tape to digital Quicktime movie files. This process enabled me to familiarise myself with the content in the journey and to identify any technical problems. All of the files were then uploaded into the Head_X format, irrespective of technical glitches as these could also be used to create still images.

To deconstruct each recorded performance, I contrasted my lived memory of the journey with what was revealed in the Head_X format, observing how I reacted to the space and the ways in which it reacted to me. For example, video from the Head_X: Commuter Space I revealed ceiling details in railway stations that were never recalled in my lived memory of the journeys, unlike ceilings in the train carriage, where I often looked up. I also considered how my movements were affected by the surrounding space. For example, in Head_X: Commuter Space I and Head_X: Commuter Space II my movements fall into regular, rhythmic cadences that reveal an ‘at home’ feeling as I skip down the stairs to enter a station, or move through the crowd on the station platform. In Head_X: Washing Up, I noticed the fast, reflexive and sweeping arc movements of my arms as I performed the task, which suggested a much deeper familiarity with the space; while in Head_X: Forest, I noticed curiosity and excitement in my movements as I clambered through the undergrowth that somehow recalled my childhood.

During the repeated viewings, which made me feel ‘at home’ with the material, a key focus was to detect any captured material that could have distracted the viewer from the experience of the everyday journey. For example, because the recordings were made during winter (when the hat and coat I wore to conceal the PDU looked very similar to clothing worn by other passers by), I chose not to use journeys when there was snow, or scenes that included Christmas markets and decorations in the street. In these recordings, I found my attention drifted from the idea of the everyday urban journey as an inhabited place to any number of associations with winter or commercialism, for example. This was also the case when people around me in the captured recordings did unexpected things. In some instances, people approached me for directions, so I rejected any journeys where I was forced to speak. In other instances, when I felt myself framing interesting actions, such as buskers, I rejected these also. In the banal settings that were used, these instances just seemed to
detract attention from transit space as the place of the journey. But some incidences that appeared remarkable in review seemed to flow with and enhance my movements. For example, in Head_X3: Ulica Piotrkowska, when I passed by a group of nuns, the action of passing them and their windswept clothing created a beautiful graphic moment that seemed to emphasise my spatiality.

The more familiar I became with the captured material, the more intuitive and ‘at home’ I felt with the post-production choices I made, such as the decision to present uninterrupted, unedited journeys from origin to destination in the time it would take in real life (real time), in a single take.

There is usually a reason to make a repeated journey from home – to go to work, to buy groceries from a store, or visit a close friend. Through repetition, we come to understand the duration of the journey and to optimize the transit experience so we can focus on other things – a book, phone call, or casual game – instead of the passing of time. As a commuter, this familiarity allows me to drift in and out of the conscious observation of time and experience the journey as a place unto itself that extends my concept of feeling ‘at home’ in the city where I live. Because one of the key questions in the research project was to see whether this process could be revealed in video artworks, the idea of presenting the unedited journey from origin to destination in real time seemed essential. In this sense, the journey and the artwork are both measurements of time. Viewers of the artworks are invited to observe my behaviour and movements in a real time experience, while also observing the people around me passing time.

Further, the selection of the start and end points for each artwork obviously revealed the narrative of each journey. For example, the home and office end points in Head_X: Commuter Space I signify a commuter journey, while the start and end points in Head_X: Washing Up indicate that a chore could be executed.

The use of the real-time duration for each journey references a cinematic history that Oliver Stangl dates from Vertov’s Kino Pravda in the 1920s through to the hand held camera work pioneered by Michel Brault in the 1960s (Stangl, 2011). While the direct cinema tradition largely arose from the ideal to present truth in place of propaganda, editing techniques were used to manipulate and heighten the perception of real time. By contrast, my objective is to create a contemplative space within the artworks and installations, where the viewer can experience my feeling of being ‘at home.’ My sense was that the use of fast and slow motion, fades, dissolves and jump cuts could have resulted in the viewer experiencing a shortened and distorted duration of the lived experience, which would
have directed their perception of time, rather than inviting the viewer to contemplate the same time and space that I recorded with the PDU.

The use of the five perspectives of the PDU presents a more complex image for the viewer to deconstruct, than would be associated with single screen projections of direct cinema. The Head_X image is already broken into a deconstruction of the environment around the body in movement. In a sense, the viewer has to visually edit the five viewpoints presented in the Head_X image to experience the journey as the wearer of the PDU. To add editing techniques such as intercutting sections of other captured journeys of the same route would distance the viewer from the lived experience. My goal is to invite the viewer to contemplate where the images come from, how they were captured and through this line of inquiry, to feel ‘at home’ in the work by understanding what is up, left, right, backward and forward.

In the artworks developed for this research project, slow motion effects were tested and rejected because they seemed to distance the viewer from the “truth” of my body movements while also distorting the sound—both important experiential cues in the works. I experimented with slow motion in some early review cycles, because this had proved effective in the development of previous artworks, such as Parkway Turnpike Tunnel, (2004) where a two-hour car commute from New Jersey to Manhattan was slowed down to a six-hour video painting of the journey. Here, slow motion worked well because the sound of the engine was clearly identifiable at any speed so the action was not distorted in the image: viewers instantly recognize the action and environment of driving a car, but can experience the fluctuating states of unconscious and acutely conscious space that occur during repetitive commuter journeys.

Slow motion was also considered in the post-production phase of Head_X: Exit Zimmerstrasse 12, to reduce the speed by one half for every flight of stairs, and further in the approach to the door, to emphasize the approach to the threshold between private and public. This approach was abandoned because it distorted the rhythm of the movements and the sound of the footsteps running down the stairs as central components in the artwork. The test results were perceived by me and the colleagues with whom I shared them to shift the focus of attention to the form of the image instead of their identification with my movements as the wearer of the PDU, recording the transit space. Any time distortion in the way the natural motions of walking, could distance the view from the movement.

The real time recorded sounds from the binaural microphones in the PDU in each of the artworks represent the field recordings as a multi-point, panoramic, sonic spectrum. Here, the objective was to use real
time sound and video, to transport the viewer into the recorded space. Additional sounds such as heartbeats and music were considered, tested and dismissed, as the recordings from the fieldwork revealed the rhythm of feeling ‘at home’ in the artworks. As Tuan writes (1977, pp. 14-16):

... people are subconsciously aware of the sources of noise, and from such awareness they construe auditory space …. sound enlarges one’s spatial awareness to include areas behind the head that cannot be seen.

During the review phase for each work, I thought carefully about the position of the forward intentional view in the final artworks. The Head_X format is fixed where the upward view is always in the centre surrounded by the forward, right, backward and left panels, but there is no upright way to view the image. It seemed to me that placing the intentional view in the top left hand corner of the image or on the bottom right shifts the focus toward and away from it. This was a contributing factor that supported my exploration of animation techniques.
All of the PDU captured material was reviewed in the static Head_X format, but in the review phase of the development of *Head_X3: Ulica Piotrkowska*, I used animation to continue to explore the medium and material. This work arose from the initial, conceptual stage of developing the PDU, when I printed five stills from a captured journey and folded them to create a cube, to consider what this might look like as an immersive installation. Handling this small visual aid made me see the PDU imagery in a cube shape, as an object turning in space that housed a small interior space formed by the sides of the cube. This observation lead me to animate the Head_X format to explore the image as a representation of the lived experience of the journey, since it seemed to be able to reveal the internal space of the PDU wearer in the journey, together with the external, detached viewpoint from the outside.

My goal was to further examine and reveal the Head_X image construction and the nature of video as a two-dimensional screen medium that simulates the three dimensional physical world. Photoshop was used to create a series of mock-ups showing various perspectives of a cube shape, using images from existing PDU videos. The mock-ups revealed several new elements of the work. From some angles all five surfaces of the cube shape could still be seen, though partially obscured. Less information was revealed in this format, but the interior space of the virtual cube shape emerged as a new space, which represented the visual domain as five views outward from my head and body. As the shape inverted, flattened out, disappeared, mirrored and reflected the environment around me, the
distinction between my body and the world it moved through seemed to become one. The mock-ups also showed how the images displayed on the interior sides of the cube shape mirror or reflect the images projected on the exterior. Head_X represents the body and its connection to the surrounding, inhabited space of the journey, showing the backward and left peripheral views as they are in reality and the small section of the upward perspective and the partial views of the forward and right perspectives as reversed, mirror images. This new interior view helps to emphasise the exterior space of a cube sitting inside a black video screen.

Two thirty-second test animations were produced. One showed a five-sided cube turning on multiple angles, within the black video frame. The other showed an enclosed perspective inside the rotating cube space that framed the entire image. The tests proved that the animations looked good, worked technically, and could be produced within the constraints of technology, time and effort. The tests also made me reflect on what I was looking at – the inside space, the external space, the black background and how to move from one perspective to another. The subsequent process of designing and producing the animation for Head_X3: Ulica Piotrkowska is described in Chapter 4: The Artworks.

On the basis of this exploration, some of the other artworks were also animated in the review phase to compare the results. For example, the Head_X image is presented in a fixed position in Head_X: Commuter Space I, but rotates in Head_X: Commuter Space II to present the image construction from every angle while projected on a wall. Head_X: Forest repeats the five minutes captured four times to presents the full range of animation techniques used in Head_X3: Ulica Piotrkowska, and showing the basic fixed and rotating Head_X format used in Head_X: Commuter Space I & II.
3.33: Installation images of *Head_X3: Ulica Piotrkowska*. (left & center) Piotrkowska street shop window exterior and interior white cube space in *The Archaeology of Piotrkowska Street*, at Fokus Lodz Biennale 2010, Poland and (right) suspended over empty indoor pool in *Memory of Present* at Coup de Des, Berlin, Germany 2012.


**Presentation Phase**

The challenge in the presentation phase of the project was to find ways to use the exhibition space to enable viewers to think about the transformation of space into place and to share my sense of the ‘at home’ feeling that was explored in the production process. Methods used to achieve this included screening choices and installation design. While a series of six works was produced in the research project, one artwork was presented in the following group shows.

*Head_X: Exit Zimmerstrasse 12* was presented in the group exhibition *Way Out: Laboratorio #4* at Pavilhão 28, Lisbon, Portugal in 2009 which was located in a de-commissioned psychiatric ward on the campus of the large hospital, Júlio de Matos. The artwork was screened using a forward video projection, on a roughly surfaced wall. To create a more intimate experience in this installation, I selected a small space, where only one or two patients may have resided at any time. Windows were painted over in white to create an enclosed and darkened space. The only light sources were a 7-watt globe directed toward the 1m x 1m still image at the entry to the space, and the video projection itself. These strategies focused viewers on the embodied movement in the video and the cycle of attempting to leave a domestic space. The fact that the exhibition was installed in a psychiatric ward re-contextualised the looped content – some viewers told me they interpreted the work as a perpetual attempt to escape to a private world beyond reach.

*Head_X: Washing Up* was selected for exhibition in the *Passing Through* group show at Kunstpunkt Berlin in 2009, in a collaborative decision with artist Margaret Raspé because of the obvious synergies between our works. Both of us used helmet cameras to record ourselves in the repetitive domestic task of washing dishes. My video and her film were projected, side-by-side on a smooth surfaced wall in a conventional cinematic situation to enable immediate comparison of the works by viewers. After the works were shown, the room was brightly lit to encourage dialogue between the artists and the viewers about the differences between the works.

*Head_X3: Ulica Piotrkowska* was created for exhibition in line with the curatorial objectives of *The Archeology of Piotrkowska Street* project at the Lodz Biennale (2010). The work was rear projected through a shop-front window to create an internal and external way for viewers to engage with the positive and mirrored projection and consider the virtual internal and external spaces of the animated image. This also enabled viewers to appreciate the work outside on the street it portrays as well as within the gallery space.
Two years later, Head_X3: Ulica Piotrskowska was selected for a group show Memory of Present at Coup de Des, Berlin (2012) because of the curator’s interest in the cubic dimensions of the animation. Here, the work was rear projected onto a screen suspended over an empty indoor swimming pool. Viewers could climb into the swimming pool to engage with the artwork from either side of the projection from below, or to see the work in the broader context of the domestic setting from the outdoor garden.

For the final installation of the research project in July 2013, five of the six works were exhibited at the RMIT School of Art Gallery in Melbourne. Each work was forward projected on the white walls of the gallery. Head_X: Commuter Space I, Head_X: Commuter Space II and Head_X: Washing Up sit within the 16:9 frame of the video projection, so viewers only see the positive Head_X form, which becomes the frame itself.

3.36: Installation image of Finding Home: From Space to Place in Transit at the RMIT School of Art Gallery in Melbourne, 2013.
The larger projection of Head_X3: Ulica Piotrkowska is framed by the edge of the wall, the floor and the ceiling, to reference the idea that the projected image could continue beyond the video frame. To focus viewers on comparisons between the four different animated image forms in the artwork, Head_X: Forest was projected at a smaller scale. I had planned to exhibit the full series, but realized during installation that the physical constraints of the space would crowd the works. The choice was to exclude one of the two artworks that addressed interior spaces, either Head_X: Exit Zimmerstrasse 12 or Head_X: Washing Up, and I ultimately omitted Head_X: Exit Zimmerstrasse 12 because the material in this work is derived from the material used in Head_X: Commuter Space I & II, while Head_X: Washing Up contrasts the transit journey with the performance of a repetitive task in the privacy of home.

Because the artworks are stored as digital files on a hard drive, they can be screened in any number of ways and at any scale. Presentation options included: conventional cinema settings; online; large outdoor screens; CRT monitors; or hand held mobile devices, for example. But given the volume of information revealed in the Head_X format, I decided that the imagery necessitated a scale of 1.5 meters or more for viewers to physically move around the space and engage with the content at different distances. At certain moments in each of the artworks, this seems to present a life-size depiction of occasional moments in the artworks. When the Head_X image is seen on a small screen there is less connection with the content and more emphasis on the general movement of the media image, as opposed to the embodied movement within it. This is especially the case for the presentation of the animated works.

Installation design encompasses the context, opportunities and constraints of each exhibition space, in what Nikos Papastergiadis has described as “a negotiation with the space in which art is experienced” (2006 p. 136). In this context, each presentation tackled the research questions from a unique vantage point, whether inside the white cube of a gallery space, de-commissioned psychiatric ward, derelict 1960s villa or standing outside on a busy street. Nonetheless, wherever possible, the installation was configured so viewers could walk around the space and physically engage with the work in multiple ways, to get a palpable sense of being embodied in the work.

The installation design for the final exhibition positioned the five independent projections so viewers could move freely from one projection to the next. Head_X: Commuter Space I & II were projected side by side and at the same scale on the first wall viewers see when they enter the space. Turning to the adjacent right, they see Head_X: Washing Up to quickly contrast transit and domestic space. When the viewer
turns to the left, they see the much larger projection of *Head_X3: Ulica Piotrkowska*, which is framed by the walls of the exhibition space itself. *Head_X: Forest* was projected at a smaller scale on the rear wall of the gallery. White boxes were constructed on site to house the projection equipment and provide seating so viewers could engage with individual works while wearing headphones. Viewers told me this installation design allowed them to roam within the space and experience the works individually and as a shifting and unified shape.

In addition to the execution of the installations described above, alternative approaches were also considered. For example, in the early phases of the research project, I thought about presenting the PDU captured material in various immersive installation settings using five video projectors and also as sculptural objects made up of 5 LCD screens. Indeed, when people interact with the PDU as a recording device in its own right in isolation from the *Head_X* format or the artistic works themselves; the idea of projecting the recordings in an immersive space typically comes to mind. For example, the director of *CIRCLE* (working title), an experimental film that uses the PDU in a narrative drama, intends to show an immersive version of the movie adjacent to the cinema screen version.

I dismissed an immersive installation in the project because the idea of manipulating the recorded 3D space on a 2D screen during editing, and especially in the animations, was one of the exciting outcomes of my efforts to present my subjective experience in transit space as a single channel video artwork. An immersive installation presents the PDU recordings in a one to one relationship between each camera and the installation space. The viewer literally experiences each of the cameras of the PDU, as opposed to the image as a whole. The upward camera projects above the viewer, the forward, backward left and right views on the respective surrounding screens, so the viewer turn their bodies to observe their screen of choice, instead of observing the embodied movement of the PDU wearer (me). By presenting the works in the *Head_X* format on a 2D screen, viewers are challenged to understand what is being seen and to orient themselves within the image in order to engage with it and feel ‘at home’. This encourages the viewer to also reflect on the medium used to produce it.

Furthermore, in the presentation of the produced works, the intention was to create a new way to explore movements in public space, not to recreate a 360-degree environment that viewers could interact with by choosing their own directions through it. This research option was rejected in the early phases of the project during the collaboration with
Hasso Plattner Institute to embed PDU recordings in a virtual 3D city map, see Chapter 1, Context. In contrast with 360-degree representations that invite viewers to navigate artistic space, such as PLACE-Hampi (Shaw, 2006), the PDU recordings in Head_X format represent potential directions the PDU wearer (me) could take in the journey, while also serving as visual reference trajectories to my physical location within the captured environment.

Reflection Phase

While I reflected on my practices and activities throughout the creative cycle, in the reflection phase the methods used were contemplation, discussions with other artists, academics and viewers, and further research to investigate issues arising from the discussions.

I considered the artwork that had been made and the processes used to develop it. Did the practice and the artwork explore and convey the feeling of being ‘at home’ in transit? What else was conveyed unexpectedly? What would be the next step? I reflected on the style and substance of the artwork and how it conveyed the feeling of being ‘at home’.

After I completed and presented each artwork, I considered whether or not I was satisfied with the results, in terms of aesthetics, viewer reactions, and the way research questions were addressed. Discussions with other artists focused on the media and materials used to produce the work, while those with academics concentrated on the meanings and implications of the research. References to other artists and theorists arose from these discussions, while conversations with viewers were usually about their own engagement with the artwork and how they recognised what they were seeing by trying to orient themselves to the work. This feedback usually stimulated further research into alternative technologies and artworks by other artists who explored similar themes.

After creating Head X: Commuter Space I & II, I reconsidered the commuter journey as a place in its own right, and whether the feeling of being ‘at home’ was revealed. The discussions with artists concentrated on how the material was captured and edited; with academics on exploring the PDU as a sousveillance device and the meaning of Head_X as a medium. The dominant issue was how we perceive and understand what is captured by the PDU and presented in Head_X format in terms of the relationship between the body and the image construction, as well as potential opportunities to use the PDU and Head_X to illustrate
philosophical, spatial and social theories.

After the exhibition of *Head_X: Exit Zimmerstrasse 12* in Lisbon (2009) I reflected on my observations of how viewers engaged with the installation and what it was that helped them to quickly recognise what they were seeing. I concluded that elements such as the repetition and rhythm of movement and the sounds of the footsteps in the stairwell were immediately recognizable and welcoming. This engagement allowed them to quickly orient themselves with the multiple views. As a consequence, I selected repetitive, familiar movements, such as washing dishes and walking, in subsequent artworks.

The reflection phase that followed the presentation of *Head_X: Washing Up* focused on how the ergonomics of movements in this confined interior domestic space compared with movements through multiple transit spaces in *Head_X: Commuter Space I & II*, as well as the repetitive movements in *Head_X: Exit Zimmerstrasse 12*. The work was presented in association with Margaret Raspé’s *Alle Tage Wieder – Let them Swing* (1974) at Kunstpunkt Berlin. Conversations with artists at the event centred on the role of the intentional view in each of the works. Raspé looked through the camera to frame her imagery, but my body and head movements framed the PDU captured imagery. We also discussed the impact of technological change on our work with film and video tools.

*Head_X3: Ulica Piotrkowska* stimulated a lengthier reflection phase. My first concern was whether the animation of the *Head_X* format enhanced or inhibited the investigation of the research questions. I observed that viewers at the Lodz Biennale and Coup de Des in Berlin engaged with the spectacle of the animation, while local viewers in Lodz who were familiar with the landscape were equally drawn to the content of the video, reconciling their memories of the area with the imagery, to orient themselves within the artwork. But irrespective of their viewing location, audiences in Lodz and Berlin told me the repetitive rhythm of movement in this 90-minute walk was the ingredient that conveyed a sense of feeling ‘at home’.

Finally, in the reflection phase after completing *Head_X: Forest*, I contemplated how material captured with the PDU and presented in *Head_X* format revealed a space that was not appropriated by architecture and other people. My expectation was that the results would be more challenging to digest because there were no clear horizon lines. Surprisingly, the visual aesthetic proved much easier to look at – a unified visual domain.
Artworks
The results from the creative cycles were a series of video artworks and still images that address themes of space, place and feeling ‘at home’ in transit spaces and contrasting settings.

*Head_X: Commuter Space I* is a 32 minute video journey that captures a typical urban commute from an apartment in east Berlin to an office in west Berlin. The video is screened in a static Head_X format to present the medium that was used to edit the series. When exhibited, it is installed alongside *Head_X: Commuter Space II*, a 45-minute video journey that captures a shopping trip to a media electronics store in Alexanderplatz, Berlin. This video is screened in a rotating Head_X format to downplay the significance of the intentional view.

*Head_X: Exit Zimmerstrasse 12* is a one-minute video loop that captures the transition from the domestic space of an apartment through the communal space of the stairwell and onto the public space of the street. For the *Way Out: Laboratorio #4* exhibition in Lisbon (2009) it was screened in a static Head_X format and presented alongside a video still as a 100 x 100cm inkjet print.

*Head_X: Washing Up* is a 23-minute video about a domestic chore in the kitchen of an apartment. For the Kunstpunkt exhibition in 2009 it was presented in the static Head_X format, alongside Margarate Raspé’s *Alle Tag Wieder – Let Them Swing* (1974).

*Head_X3: Ulica Piotrkowska*, is a 96-minute video journey of a pedestrian walking up and down the main thoroughfare of Lodz, Poland. In this work, the Head_X image is animated to reveal a three dimensional journey in video space. It was exhibited in *Archeology of Piotrkowska Street* at the Lodz Biennale (2010) through a shop front window on the Piotrkowska street, and on a suspended nylon canvas at Coup de Des Berlin (2012).

*Head_X: Forest* is a four-minute video loop that reveals a directionless walk in a thick forest. It is presented in all versions of the Head_X format: static; rotating; and animated.

This chapter presents the artworks with the specifics of their creative development cycles and informal feedback from people who viewed the work.

4.01 - 4.05: Accompanying still images

*Head_X: Commuter Space I & II* 2010
inkjet prints on paper, 100 x 100 cm
Head_X: Commuter Space I & II

Head_X: Commuter Space I & II are the foundation artworks from the research. Both were created during the fundamental resource phase when the PDU tool and Head_X format were developed. All other artworks in the series arise from or respond to them.

Head_X: Commuter Space I portrays a typical urban commute from an apartment in east Berlin to an office in west Berlin, while Head_X: Commuter Space II portrays a shopping trip to a media electronics store in Alexanderplatz. Both journeys were selected from the routine, everyday outings I already made from my apartment. My goal was to select journeys that audiences could easily identify and that also featured multiple transitions between different types of spaces.

The journeys in Head_X: Commuter Space I & II can be described in terms of the architecture and history of the spaces and places as well as by my role within them and my subjective lived experience. Both journeys originate from my apartment, a late 19th century building with high ceilings and a steep staircase on Zimmerstraße, a street that formerly housed the Luftwaffe, Gestapo Headquarters, Berlin Wall and Checkpoint Charlie. The building lies at a landmark of cold war surveillance on the former border between capitalism and communism at the entrance to the American Sector, but when I leave it today, I walk through a tourist precinct to reach the subway that takes me onward to offices in the city west and a shopping centre in the heart of the east.

As the PDU wearer I am a tall person leaving and returning to an apartment where I feel comfortable and at home. To make the journey, I walk through a crowded urban environment where ‘people rather than things restrict our freedom and deprive us of space’ (Tuan 1977, p. 59). The crowd shapes my journey - it forces me to slow my pace and sometimes reveals opportunities for me to skip past in a continual spatial negotiation.

My perceptions and understanding of spaces and places in these journeys are a complex interaction and melding of my past experiences as a commuter, my biological body and its reactions to the complex world around me. The creative action of wearing the PDU to capture and record the experience overlays these already familiar perceptions. This action was performed over and again until I forgot I was wearing the PDU.

4.06: Link to 4-minute video excerpt from Head_X: Commuter Space I showing movement through transit space Friedrichstrasse station in Berlin
In the resources phase of the cycle, the spaces and places of the journey were considered as inputs for the PDU and outputs from the Head_X media format. Here, the research particularly focused on the visual domain - all of my potential views in all directions at any given point along the journey. In The Phenomenology of Perception (1945) Merleau-Ponty described body spatiality as the way we perceive space from the perspective of our bodies inhabiting that space, not just in terms of the physical boundaries of our bodies, but also in terms of the psychological, existential and cognitive perceptions, which come from the body and are part of who we are. He argued that the body in movement 'clearly shows the fundamental relations between body and space' (2006, p. 117):

> By considering the body in movement, we can see better how it inhabits space (and, moreover, time) because movement is not limited to submitting passively to space and time, it actively assumes them, it takes them up in their basic significance which is obscured in the commonplaceness of established situations.

In *Head_X: Commuter Space I & II* the PDU captures transit space from the perspective of a body in motion, recording its movement and orientation. But the artworks do not represent human visual perception. The cameras are not binocular and do not move independently from the head. They present one view that crudely approximates what we can see (the forward camera) and four views we can never see without turning (up, left, right and backward). These views reflect the potential directions and possible trajectories the body could take.

One of my key objectives in the presentation phase for *Head_X: Commuter Space I* was to present the Head_X format in the way I had constructed it, as a platform for reviewing and editing. Even though the Head_X image was designed with all five views facing in different directions so observers would not over-emphasize any particular view, when the artworks are projected onto a wall, the image still has a clear spatial orientation, with a fixed up, down, left and right. I considered ways to negate this, such as projecting the works on a ceiling or floor so the image has no particular orientation and the viewer can walk around it. In light of these options, I decided to slowly rotate the image in *Head_X: Commuter Space II*, to further minimize the significance of the intentional view and shift the viewer's gaze and interest toward the Head_X format itself.

*Head_X: Commuter Space I & II* present familiar journeys as places to be explored in their own right. They reveal in-between spaces such as the transition from a street, to a subway station, from train platform to carriage, open plaza to retail interior. Some places are also presented as pause, such as when the PDU wearer (me) waits on the platform or

4.07: Link to 3-minute video excerpt from *Head_X: Commuter Space II* showing transitions from underpass to platform to carriage at Stadtmitte station in Berlin
stands in a moving train carriage. Occasionally, the movements of the PDU wearer (me) reveal an ‘at home’ feeling, such as when the body weaves through a crowded platform at Alexanderplatz station with speed and ease.

The soundtracks revealed instantly recognisable experiences in transit space, such as when a vehicle grinds to a halt or a public announcement signifies the departure of a vehicle. As Michel De Certeau writes in The Practice of Everyday Life, the arrival of a vehicle taps out a rhythm, whistles, and moans. ‘There is a beating of the rails, a vibrato of the window panes - a sort of rubbing together of spaces at the vanishing points of their frontier’ (1988 p. 112).

Viewers of Head_X: Commuter Space I & II told me their initial impressions of the artworks evoked kaleidoscopic imagery, early hand-held reporting techniques and cubism. After these first impressions, they typically started to engage with the artwork by trying to work out what they were looking at. They came to understand that they were looking at an image from the perspective of the PDU wearer; inside out. As they watch Head_X: Commuter Space I & II they imagined themselves to be situated in a train with five cameras on their head. They considered which way was forward, backward, left, right and up. Through this spatial dialog, the viewer transforms the video art space into a familiar place they can identify with, as a passenger in the artwork. In this way, they find an ‘at home’ feeling through their engagement with the work. In a recorded interview with curator Timo Kaabe-Linke in June 2011, he observed that:

... in Head_X: Commuter Space I & II the performing body becomes a black box, because what we see are the images from the technical device (the PDU) but not the supporting body that carries it. The view is only possible because it’s carried by a human body with a certain shape, height and movement; but it is not subjective because the technical shape is not in line with the way we see. Even the forward view is a fixed monocular position slightly above the line of sight between the eyes and pointed outward, without the freedom to pan left to right, up or down. I have to actively locate myself in this dislocated image because it shows a view that is not possible to us in the world. It’s a two dimensional representation of five unique spatial perspectives that depend on each other and the body moving through space. So with this alienated technical PDU device and Head_X format, you discover things you can’t discover with other research tools.

Head_X: Commuter Space I & II invite the viewer to envision the invisible: an image of the PDU wearer as if the body had been sucked out of the picture and all that remained was the recorded visual domain and the sounds of transit space.
4.09: *Head_X: Exit Zimmerstrasse* 12 2009, inkjet print, 100cm x 100cm
Head_X: Exit Zimmerstrasse 12

The spatial focus of Head_X: Exit Zimmerstrasse 12 is transitional space in the commuter experience. As discussed previously, body spatiality in transit space fluctuates from states of passive subconsciousness to alert wakefulness - a phenomenon De Certeau described as ‘another threshold composed of momentary bewilderments’ (1984 p. 114). In my lived experience of the PDU commuter journeys, these fluctuations were more likely to occur in the micro-transitions between the colliding environments of the journey.

Through the series of works it became increasingly clear to me that movement through a city is a process of constantly transitioning from one type of space to the next, from one set of design functions, aesthetics and purpose to another. We leave one space and enter a new one via a door, corridor, or stairwell. Examples of these transitions include walking down the stairwell of an apartment building, entering the subway via stairs to the train platform, and entering a train carriage. Each time the surroundings change, commuters must pay attention and re-orient themselves to the new space. Greater physical awareness is required to tackle unknown factors in the new surroundings, such as other people, weather, lighting conditions and the transport service.

The development cycle for Head_X: Exit Zimmerstrasse 12 differed from the cycles for the other artworks, as there was no capture phase. When I reviewed the database of PDU material from my commuter journeys, I noticed that the most visually arresting imagery often occurred in these transitions. In Head_X format, the PDU reveals the transitional change and amplifies the sensation from five points of view. To develop the artwork, I therefore reviewed database of video imagery from the commuter journeys to select transitions of interest. The most representative for me was leaving or returning to my apartment. This transition is quite complex, even though it is also the most familiar. There are three distinct spaces: the private, intimate space of my home; the communal space of the stairwell and foyer of my apartment building; and public transit space on the street.

Head_X: Exit Zimmerstrasse 12 presents this transition in a repeated sequence where the PDU wearer (me) runs down the stairs of an apartment building to enter the public space of the street. The artwork reveals the stairwell as a transitional place in its own right that Celine Rosselin has described as “neither wholly interior, nor exterior, but a sheltered testing zone” (ed. Cieraad, 2006, p. 59). The entire loop reveals
the feeling of being ‘at home’ through the rhythm and cadence of the movement and the sound of the footsteps.

The still image that accompanies the video depicts a moment a few steps before leaving the stairs and entering the building foyer. I selected this image because it represents the architecture of the main space observed in the video, and is also a moment where we see an overexposed white exit, the doorway to the outside, public world.

Head_X: Exit Zimmerstraße 12 was exhibited at Way Out: Laboratorio #4 in Lisbon Portugal (2009). Laboratorio is a group of artists who explore the nature of space by engaging with unique exhibition sites. This show was installed at Pavilhão 28, an abandoned psychiatric ward in the operational Hospital Júlio de Matos. The objective of the show was to intersect concepts of enclosure and exit with architecture and symbolism. The artwork was presented as a one-minute video projection loop with sound, 100 x100cm inkjet print and 10-watt light globe with aluminium foil.

Feedback from viewers and other participating artists focused on a few notable elements in this work, such as the fast paced rhythmic walking that spirals downward and the way the Head_X image deconstructs the architecture of the space and the flash of natural light that adjusts the video journey into the public world. Viewers grasped what is happening in the work immediately and focused on the aesthetics and sound.

They told me that listening to the piece without the image is almost as informative and definitely recognisable. Six paces through the apartment to the front door, opening and closing the squeaking front door, a sigh, the rattle of keys and locking the door, brisk rhythmic footsteps down each flight of stairs (10 quick steps then 2 slower steps, repeat...), seven steps across the harder floor of the foyer (clop, clop, clop...), the final door and street before we loop back to the apartment again. This was compounded by visual glimpses of the PDU wearer (me) reflected in a mirror in the hallway of the apartment, my hands locking the door, my shadow on the walls of the stairwell, and my reflection walking past a window on the street.

Of the many artists who have explored transitions in public, private and communal space I found myself comparing Head_X: Exit Zimmerstraße 12 with Mark Wallinger’s Threshold to the Kingdom (2000). Wallinger used slow motion video and Allegri’s Miserere, the setting of the 51st Psalm, to transform a mundane airport arrivals gate into what I perceive as a metaphor for hopeful transition. Weary travelers and brisk-paced flight crew pass through the double doors of the international arrivals gate at Heathrow airport. We focus on the passengers, searching for loved ones,
and our own particular take on the stories that place them there. Time slows down.

By contrast, my intention is to capture and reveal the lived experience of the transition, not the meta-physical. In *Head_X: Exit Zimmerstraße 12*, the viewer scrutinizes the transitional space of leaving the apartment, its architecture and aesthetics, and also the physical movements from which these images were captured in repeated time waves. The installation focuses on nothing more than how we physically move through a transitional and ‘at home’ space. This is realized by: selecting a transitional space that comprises a series of thresholds and micro transitions; using the PDU to capture the subjective bodily experience to simultaneously reveal departure and arrival; and presenting the artwork as a continuous loop.

Also, as with all the works created in the research, I use the PDU to capture video and Head_X to deconstruct it. The rhythmic walk down the stairs reveals familiarity through reflexive movement. Fumbling with keys and crossing through the bright light of the doorway to the street are acute moments of self-awareness. Sound grounds the viewer in the movement, by simply describing the action of walking down the stairs. As a result, the viewers project themselves into the PDU as the subject crossing the threshold and through this process, becomes the invisible body of the PDU wearer, the artist (me) and therefore an implicit collaborator in the making of the work.

*Way Out: Laboratorio #4*, Pavilhão 28, Lisbon 2009
4.14: *Head_X: Washing Up* 2009. inkjet print, 100cm x 100cm
Head_X: Washing Up

Head_X: Washing Up investigates body spatiality in a domestic space that Tuan has described as an everyday place ‘multiplied by all the days before it’ (1977, p. 144). It contrasts my movements in the journeys that radiate outward from home in the other artworks, with movements in my domestic space where I am immersed in the rituals of eating, sleeping, working and relaxing. Bachelard (1994) refers to this as a poetic place where I am able to have an intimate, interior knowledge. When I’m in one room, I have a spatial sense and understanding of the others. I am aware of what other people are doing around me even in other rooms. I control this environment, by holding an interior view of what I cannot see.

By contrast, in transit space it’s impossible to have this level of understanding, intimacy and control, so movements are typically intentional and conscious, until the space is appropriated through repeated journeys to achieve familiarity.

Instead of performing and capturing a journey in this artwork, the PDU was used to document a routine chore. My hypothesis was that the repetition associated with the journeys through transit space and the tasks I performed inside domestic space would be captured by the PDU to reveal common ground, because as Tuan writes, while ‘brushing one’s teeth and going to the office can clearly be understood in terms of ends and means’; repetition turns these into habits and their original intentional structure is lost (1977, p. 127).

Of course there were many chores and routines to select from: making coffee, shaving, checking email, reading, watching movies, listening to music, cooking, eating, making the bed, working, talking with friends and family, sleeping, showering, going to the toilet and so on. So why choose washing up as the task to explore domestic space?

First there were technical constraints. It’s impractical to wear the PDU when you lie down. Wearing the PDU under water would damage the equipment and be dangerous. Any routine that is performed near a mirror would also be unsuitable, as reflections focus the viewer’s attention on the technology of the PDU instead of movement and spatiality. Routines that are performed with friends and family would also detract from the focus on spatiality, as would tasks that involve an intentional focus on a computer screen or the pages of a book (viewers focus on the object of attention instead of the action of looking).
Head_X: Washing Up is located in my kitchen, an iconic focus for domesticity where I cook and clean at least twice each day. This is a place where I physically understand what cannot be seen. I know what is behind me, to my left and right, inside the cupboards and drawers. When I work in the kitchen, my actions are fast, decisive and economic. I complete tasks quickly and effectively, without interruption.

The artwork reveals, perhaps because of this intimacy, body movements that are typically reflexive and automatic. Head_X: Washing Up presents the full rotation of my visual domain with fast and rhythmic movements that often turn into swift arcs. The sound punctuates the action with the clatter of pots and pans, running water and a boiling kettle.

In the capture phase of the cycle, the action of deciding to capture the task with the PDU on this day injected an intentional context that conflicted with the overall goals of my artwork. To help overcome this deliberation, I contrived a false starting point, and then re-enacted my actions prior to putting on the PDU as the logical starting point for the piece (walking from the bedroom into the kitchen). On completion of the task, as I sat down with a cup of coffee, I also decided that this was the logical end point for the piece, and turned the PDU off. Everything else was just as it always is when I perform this task. Also, because there was no need to conceal the cameras and recording devices, I didn’t have to wear the hat or jacket. Within seconds of starting the task I became less aware of the PDU than ever before. Time taken to clear the dining table, put food away, stack the dishwasher, wipe down the benches and have my first sip of coffee was around 23 minutes.

In the review phase of this creative cycle, when the Head_X format was still in development, I loaded the captured material into a range of different formats. Because of the nature of the confined space of the kitchen, the posterior and anterior views captured much of the action and the upper and side views seemed superfluous and distracting. For this reason, I started post-production by working with the anterior and posterior views, side by side. But while these views presented my domestic space in a poetic way that was easy to read, they did not reveal my body spatiality and movement. This prompted me to test the work in the new Head_X format, which shows the full rotational dimension of my visual domain. Head_X: Washing Up reveals the intensity and freedom of these movements in stark contrast to the ambient, dreamlike pace of my journeys through public space.

In the presentation phase of this creative cycle, several artists referred me to Margaret Raspé, who had mounted a super-8 film camera to a construction helmet she wore while filming performances in the 1970’s. There are obvious synergies between our works as we both explore...
repetitive actions in recognisable, everyday environments. Like me, Raspé performed and captured banal tasks and presented them simply as they are – repetitive processes that mark the rhythms of everyday life.

Raspé and I discussed and compared our works and techniques over some months and decided to show them together as a performance and discussion at ‘Passing Through’, Kunstpunkt Berlin (2009). In response to Head_X: Washing Up, Raspé selected Alle Tage Wiede – Let Them Swing (1974), a film that documents her washing dishes at the kitchen sink in real time, from start to finish. The image focuses on her hands and the objects that they wash, one by one, in a sink full of soapsuds. Coincidentally, Alle Tage Wiede and Head_X: Washing Up are roughly the same duration at 22 minutes and 23 minutes respectively.

The setting for the show was a 4 x 6 meter wall in a room with seating for an audience of 30 people. A super-8 film projector and video beam projector projected both artworks side by side, matched in size at an area of 1.5 x 1.5 meters. The audience viewed the movies and then Raspé and I presented our recording devices, the Helmut Camera and the PDU. The discussion with the audience focused on the comparative recording technologies and our intentions.

Thirty years ago Raspé was constrained by the technology available to her at that time, the quality of the cameras and the focal length of the lens. The smallest device available was a weighty super-8 film camera. In the discussion, Raspé said that she envied me because of the video technology that enabled me to create the PDU, but like me, took the technology of the time and created a new way to use it.

Beyond technology, the most significant difference between our works is our intentions. Raspé observes her task through the camera lens and presents this intentional, tightly framed view to immerse the viewer in the task with parameters of place that are defined by the kitchen sink and the eye of the observer. We also see reflexive hand movements. In fact, at the time of creation, Raspé wrote that she deliberately used her helmet as a ‘distancing tool that enabled me to better understand what it was that I was actually doing and that in turn showed me more about myself’ (Raspé 2004). We are both looking at understanding ourselves mediated through image technology. By contrast, the PDU does not provide an interface for the wearer with an intentional subject through a lens. The movements of the PDU wearer frame the task. Even if the forward view of the PDU were regarded as an intentional view because it approximates an eye view, this is not the case. In reality the camera is fixed slightly above and between both eyes. It does not move as human eyes do, but as the head does, in sync with the other four cameras.
mounted on the head. Raspé consciously framed her composition with the Helmut Camera as she filmed it looking through the lens, whereas the movements of my head and body framed my views I captured with the PDU.

A number of participants spoke of the kaleidoscopic nature of my work in contrast to Raspé’s piece. Others commented that it was cubist in nature. A further outcome of this discussion was that Ryzard Wasko, curator of the 2010 Lodz Biennale, invited me to develop a work for the exhibition that explored these issues in more detail.

After the Kunstpunkt event, I considered the many ways domestic chores have been depicted in art. What interested me was the notion of domestic space as the originating point for my journeys into transit space. In this context, I examined the idea of Western domestic space as a counterpart to public space which Irene Cieraad traces back to the seventeenth century Dutch republic (2006) and paintings of the time by artists such as Pieter de Hooch and Jan Vermeer.

I also considered the extensive canon of work by feminist artists that originated around the time of Raspe’s helmut camera films, including Mierle Laderman Ukeles’ Maintenance Art Manifesto (1969) and Martha Rosler’s Semiotics of the Kitchen (1975). Though I am aware that symbolically and historically the home and especially the kitchen represent a gendered domain, my sense was that these artworks and the issues behind them were beyond the scope of this research project. In making Head_ X: Washing Up I did not intend to focus on domestic chores in the context of gender. I selected the task of washing dishes as one of many repetitive actions I feel ‘at home’ with in domestic space as a counter point to public space. I chose it for many practical considerations and as an automatic daily task I have performed over and over again since childhood. Later, when I decided to present this work alongside Raspe’s work from 40 years ago, and in the context of this comparison, I recognized that the viewer may bring these other, gendered contexts to the experience of the piece.

On reflection, in all of the art works on domestic space and place that I researched and reviewed, the question of objectivity versus subjectivity arose. Head_ X: Washing Up contributes to the discourse by presenting a subjective view to reveal how we inhabit this place from a body spatial perspective.
SATURDAY, JULY 18, 2009 from 7.9 pm, the second performance evening at Kunstpunkt Berlin. Video films were projected continually in the screening room and on monitors, but during these evenings the public could meet the artists and talk to them about their work and ideas, as well as learn about the techniques they use.

TREVOR MORGAN and MARGARET RASPÉ demonstrated their cameras and showed films made while "WASHING UP" as DODI REIFENBERG recycled plastic shopping bags.

4.20: Head_X3: Ulica Piotrkowska 2010, inkjet print, 100cm x 100cm
Head_X3: Ulica Piotrkowska

*Head_X3: Ulica Piotrkowska* is a 96-minute video loop that presents a portrait of the main street in Łódź, Poland, from the subjective perspective of a pedestrian walking up and down the right side of the 4.9 km street. The artwork is titled Head_X3 (Head_X cubed) to signify the virtual, three dimensional cube shape that emerges when the Head_X format is animated. It was created for *Archaeology of Piotrkowska Street*, a special project at the 2010 Fokus Łódź Biennale, Poland.

Ulica Piotrkowska (Piotrkowska Street) runs north south in a straight line between two landmarks, Liberty Square and Independence Square. The street is divided in half by a major dual crossroad with a large pedestrian underpass. To the north of the underpass is a pedestrian zone with street cafes, bars stores and renovated buildings. South of the underpass, buildings are often abandoned and decayed. The street boasts some of the most representative architecture from 19th Century Europe with palaces, villas, churches and factories. The varying conditions of the buildings make for an interesting mix of textures and vistas. Curators of the 2010 Biennale describe Ulica Piotrkowska as the “cultural, political, sentimental and commercial centre of Lodz”.

The video starts and returns to the basic Head_X format to punctuate its animated journey as a rotating and transforming five-sided cube. Every 3-5 minutes the image construction animates in a different way, folding inward or outward to show the streetscape mirrored or projected on its exterior and interior surfaces. The viewer also sees the cube from an objective perspective, within the black space of the video frame, and travels within the constructed cube space as a passenger within, looking outward.

The creative development cycle for *Head_X3: Ulica Piotrkowska* differed from the other artworks for two reasons: I came to the location of the journey as an outsider and animated the image construction. These differences resulted in comparatively greater artistic focus on the capture and review phases of the cycle.

Because the curators had determined that Ulica Piotrkowska would be the subject of the artwork, the selection phase focused on constructing a journey captured with the PDU that would explore some aspect or feeling of the street. To do this, I travelled to Łódź a couple of times to sense and respond to the landscape. I walked the street, rode trams, ate food, went to bars and talked about the history of the area with local people and Biennale staff.
On return to my studio in Berlin, I thought about how best to capture the diversity of the street as an outsider in a way that would resonate with local residents and international visitors. I recalled the geography and architecture of the street and particularly remembered walking past and peering into passageways to see commercial, residential or abandoned and decaying buildings with contrasting patinas and textures on their facades. The street seemed to be a façade that housed the entire city behind it.

My first idea for the journey was to capture scenes at several intersections and combine these with transitional scenes walking onto the street from various cafes, bars, factories and alleyways. The problem was which places to select - as a foreigner, I didn’t have a deep sense of the ‘place’ and would have to rely on the knowledge of locals instead of my own reactions to the environment. So I decided to simplify the idea, by walking from Liberty Square to Independence Square and back, to capture the street as a pedestrian. In this way, viewers of the artwork who don’t know Lodz identify with the action of walking while locals can also identify with known and familiar places. This approach also kept the narrative simple to allow for the complexity of the highly technical animation.

The capture phase was exhausting. I travelled to Lodz four times over 12 months and walked the length of the street 22 times. In total, I walked 100 kilometers over 18 hours while wearing the PDU, returning to my studio in Berlin between times to review the material and learn from my experiences. On the first few walks, I was nervous about being stopped by police, or hassled by other pedestrians so I had Biennale staff on speed dial in case I needed to explain myself along the way. At intersections, I felt especially conspicuous and deliberately stepped away from the crowd, so I didn't have to look at them looking at me. I worried about whether my walking speed and head movements were too fast or slow. I also found myself looking out for interesting locations such as street vendors and landmark buildings and crisscrossing the street to frame the PDU captured imagery. All these behaviors mirrored the acutely conscious experiences of my early PDU performances journeying through the transit spaces of Berlin.

But the more time I spent walking the street, the more comfortable I felt capturing it with the PDU. I became less self-conscious and more confident in my movements and felt I was gaining an intimacy with my surroundings – a sense of feeling ‘at home’. I also became much more familiar with the PDU itself, responding to the imagery it revealed about the nature of the journey itself. For example, because the journey runs
North and South in a straight line, along a street that is lined with three to six storey buildings, at least one side of the street lays in shadow on sunny days. I learned that the CCTV cameras in the PDU couldn’t handle the contrast range. The cameras automatically expose for the shadow leaving the sunny side overexposed. Because of this, I recorded my subsequent performances on overcast, “low contrast” days. On the journeys through transit space in Berlin, this was not an issue, because much of the material was captured in the underground or inside train carriages and in the exterior streetscapes I was walking in different directions with changing lighting conditions.

Finding a place to change tapes and sync the recordings was also problematic until I realized I could start and end each journey at the pedestrian underpass that marks the halfway point in the street. Here, public toilet facilities provided the ideal location to change tapes, check equipment, and sync the cameras. This decision changed the performance from a linear journey from one end of the street to the other and back, to two distinct loops: a one hour circuit of the run-down, traffic laden, southern end of the street, followed by a one hour circuit of the revitalized pedestrian part of the street to the North, which was populated with cafes, bars and restaurants. I continued to repeat the walk until I felt that I had achieved a kind of non-performance; familiar with the journey, comfortable with the equipment and relaxed in the rhythm of the movement of the walk.

In the review phase, I animated the captured material in Head_X format to explore potential results. To guide this process and create a working outline for the animation, I drew a diagram that mapped out the route based on how I physically and technically captured the journey, with the start and end points at the underpass where I changed tapes and the landmarks at the start and end of the street. This broke the journey into four sections. The map was then used as a framework to select key moments in the journey that would feature in the animation, see figure 4.29 below. To do this, I mined the captured data to find moments I vividly

4.29: Diagram mapping out the basic route of the walk with remembered moments from the lived journey
recalled from my lived experience of the journey as well as the new and surprising imagery the cameras revealed. For example, in section B, I remembered a moment when I overtook three nuns getting out of a small red car. In the recordings I found it visually arresting to watch their habits flapping in the wind as I passed them and to see their captured images move from forward to right to backward camera views.

The next task was to break up the fixed, 96-minute timeline to make the animation more manageable. My initial diagram had already given me four sections, roughly twenty-five minutes each. Given my general observations that people view video art works for only a few minutes at best, I decided that the visual construction should animate in a different way every four to five minutes to show as many different perspectives as possible and increase viewing attention span. This involved designing about 25 different ways to animate the Head_X cube.

Because the video was going to be seen in a 96-minute loop it made sense for the basic Head_X format to appear at the start and end of each animation as a resting form for the animation. An additional animation technique was to alternate the way in which the imagery was projected: either as-is-captured or mirrored, on the interior or exterior surfaces of the virtual cube-shape. Each time the shape returns to the Head_X format the sides either fold inward toward or outward from the virtual camera, revealing the landscape either reflected or as-is-captured on its interior or exterior surfaces, see figure 4:xx below. Mirroring becomes obvious to viewers when text appears on street signs and advertising.

Another element to consider was the placement and movement of the virtual camera that travels in and out of the cube space. This virtual camera places the viewers inside the closed-cube shape as though they are standing inside a room, or headspace, looking out at the environment from behind, or through, its surfaces. This isolates the viewers within a moving room that walks the journey with them, representing both the body and a small area around it. My sense was that the boundaries of

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4.30: Link to 2-minute excerpt from *Head_X3: Ulica Piotrkowska* walking past nuns

4.31: Diagram used to define phases of insideness and outsideness (projections and reflections) to guide the post production animation process
this virtual room form a kind of skin or border to the infinite space of the world beyond. As viewers, we emerge from this immersive, interior space to view the street scene, either reflected, or as-is-captured, from the outside. As we watch the cube turning and flattening into the basic Head_X format, our attention shifts from the streetscape to the form and shape of the video image.

To contrast the lived experience with the virtual image, I decided not to direct the virtual camera through the panels of the cube. My reasoning was that the highly technical panels of Head_X3: Ulica Piotrkowska were impenetrable. In the artwork, the human body is simply the wearer of the PDU, while the Head_X3 image is a virtual construct, highly technical and fictitious. So in order for the viewer to travel into the interior space, the cube has to turn upward to reveal the “missing” panel, the virtual camera moves into this space and Head_X3 construction then turns to enclose the viewer within it.

The curators of the Biennale asked me to present the work on the street it portrays. To do this I chose a busy pedestrian location that is frequented day and night, so local passers-by could engage with different parts of the piece whenever they walked by. Over time I hoped they would see a variety of sections of the piece and therefore, a large part of the street they are familiar with in a new context. For this reason, a storefront window was selected to rear project the video on to the street with outdoor speakers mounted to the building’s exterior.

Because the animation reflects the outside of the cube or projects its inside, it made sense to extend the installation of the work to include an inside gallery space. Viewers could walk into the gallery to experience the installation internally and intimately with headphones, to enhance the idea of being inside both the virtual cube space and the body of the wearer. On reflection, I felt that the installation design successfully emphasised
the play between the “insideness” and “outsideness” of the work while the window served as the in-between surface, a skin that can be viewed from the outside and inside, but not passed through.

*Head_X3: Ulica Piotrkowska* uses the Head_X image as a base, but the focus changes. This artwork does not simply reveal the visual domain of the journey space. The image construction takes a journey of its own, twisting, turning and inverting. At times, only one possible point of view is visible while at other times, the entire image disappears. When I observed viewers engaging with the work, I saw their attention shifts from the body movements of the PDU wearer the nature of the Head_X format and video as a medium.

Viewers of the artwork in Lodz and at Coup de Des in Berlin told me they see the animated cube in *Head_X3: Ulica Piotrkowska* from an objective perspective on the black space of the video frame, but also travel within the cube as a passenger inside, looking out. These discussions also focused on the interplay between public and private worlds. The two dimensional video perspective in *Head_X3: Ulica Piotrkowska* presents the walls of this geometric space as the skin or barrier between the internal and external, the public and private, as-is and reflected, of and apart-from. The animation achieves this in a way that the artworks presented in the standard Head_X format cannot.

On reflection, in the process of making *Head_X3: Ulica Piotrkowska* the resulting work was determined by the interplay of my first-hand memories and impressions of my walking journeys as places in their own right and the mediation of those memories by the technical constraints of the PDU device I was wearing. Repeated viewing of the material I didn’t see in the lived journeys during the post-production process has blurred into my memory and experience of the street as though I did see it.
4.34: Installation image of *Head_X3: Ulica Piotrkowska* suspended over empty indoor pool at *Memory of Present*, Coup de Des, Berlin, Germany 2012
4.35: Head_X: Forest - 1 2013, inkjet print, 100cm x 100cm
**Head_X: Forest**

The spatial focus in *Head_X: Forest* was selected to contrast the artworks that explore transit space, because in a forest the visual domain is not geared to external reference points. Forward and backward feel arbitrary because there is no reason to move in either direction (Tuan 1977 p. 36). Alone in the forest, the PDU wearer treads on uneven surfaces and manoeuvres around branches and plants. There are no parallel or intersecting lines or planes from architecturally constructed spaces and the horizon line is undefined.

*Head_X: Forest* is a 5-minute video loop in Head_X and Head_X3 formats that captures a directionless walk in a thick forest. In the artwork, the PDU wearer marks unfamiliar territory by recording it, while the Head_X cross marks the spot. In this way, *Head_X: Forest* also references the places of memory and landscape, where romanticism has stimulated a deep and rich artistic focus for some time.

From a production perspective, the contrast between this artwork and those about journeys through transit space was particularly marked in the selection and performance phases in the creative cycle.

The selection challenge for *Head_X: Forest* was to find an environment that was dense enough to mask an obvious horizon line, removed from urban noise and passers-by, free from paths and architectural structures. The undergrowth needed to be uneven and random so movement directly responded to the surface and contrasted the flattened walking paths of the urban landscape.

Finding a forested area that met these criteria in Berlin and Brandenburg proved difficult. Although the Germanic romantic tradition of folklore, ballads, painting, poetry and opera (Schama 1995) is strongly associated with dense and expansive forested areas, there are few old growth forests in the country today. After researching maps, listening to recommendations and visiting various forests, I found a small, relatively randomly forested area with uneven undergrowth, no footpaths and minimal urban noise.

The performance phase was different because I didn’t use a point of departure or destination, for as Tuan writes, “the forest, although small, appears boundless to one lost in its midst” (1977 p.56). After an initial survey of the area I determined a vague route through four distinctly different areas and repeated it six times, each time getting to know the landscape more intimately, so specific trees and rocks signified places to turn in a particular direction. More extreme body movements were required to duck and weave through the forest. As a result, the
physicality of the journey was different - exhausting and punctuated with panting and groans. The video reveals the childish and exploratory way I clambered through the undergrowth while the soundtrack connects these movements to the forest floor, the cracking of dead branches, grass and dirt.

Another marked difference between Head_X: Forest and the transit works is solitude, which Tuan describes as a ‘condition for acquiring a sense of immensity. Alone one’s thoughts wander freely over space ... (while commuting) with other people in transit curtails space and its threat of openness’ (1977 p. 59).

After completing Head_X: Forest, I reflected on the way the PDU and Head_X format present this environment. My expectation was that the artwork would be more challenging for viewers to digest because there were no clear horizon lines but surprisingly, the visual aesthetic proved much easier to look at: a unified visual domain. This gave me the freedom to present the artwork in each of the animation formats I investigated across the entire series, despite the short duration of the work.

The forest offers a constant background that is depicted across each of the five points of view. This seems to enable viewers to concentrate on the movement itself, which is clearly mediated by my physical response to the forest. Further, the sounds are not precisely located and therefore yield an ambience, rather than a coordinated spatial system. In the transit artworks, viewers engage with the work by trying to put the imagery and sound together logically, to orient themselves in the work and understand where the PDU wearer is and in which direction he is going. But in Head_X: Forest viewers can’t plot a geographic position or physical orientation by observing the points of view. Tuan expresses this as follows (1977, p.36):

What does it mean to be lost? I follow a path into the forest, stray from the path, and all of a sudden feel completely disoriented. Space is still organized in conformity with the sides of my body. There are the regions to my front and back, to my right and left, but they are not geared to external reference points and hence are quite useless. Front and back regions suddenly feel arbitrary, since I have no better reason to go forward than to go back.

In Head_X: Forest, the viewer is lost. As a consequence they read the work as a single image and orient themselves with the movement itself – understanding that the PDU wearer has turned one way or another, left to right, or crouched down to avoid a branch. Everything looks the same, so the artwork focuses the viewer on shape and movement. The research project involved the development of two new media tools,
4.39: *Head_X: Forest - 2* 2013, inkjet print, 100cm x 100cm
Conclusions
the PDU and Head_X media format, which were then used to produce six video artworks that reveal some of the ways people experience and adapt spaces to create personal place to feel ‘at home’. These artworks drew inspiration from many aspects of everyday experiences, including: how we move through transit spaces and in domestic places; how we orient ourselves from a body spatial perspective; the technologically augmented body; how we come to understand new ways of viewing imagery; and the evolving nature of surveillance and camera technologies in our everyday lives. Three of the artworks were then curated into exhibitions across Europe, including the Lodz Biennale in Poland (2010), Laboratorio #4 in Lisbon, Portugal (2009) and Kunstpunkt (2009) and Coup de Des (2012) in Berlin, Germany.

Each artwork and installation invited viewers to engage in a spatial dialogue to share my experience of feeling ‘at home’. Three common elements were used to convey this: the selection of everyday experiences that are easily recognized by viewers, the use of binaural sound recording to present the spatial coordinates of each setting from a human perspective, and the rhythmic movement of walking which was underpinned by the visual imagery and sounds of the PDU recordings. Together with these elements the complex technical image of the Head_X format invites the viewer into a spatial dialog to feel ‘at home’ with the work.

The PDU and the Head_X format were designed to record and present the visual domain of the body moving through space from a subjective and experiential perspective. The PDU captures the imagery through five CCTV cameras and the Head_X format presents the five views simultaneously. This imagery does not represent human visual perception since the views are not binocular and do not move independently. They present one view that crudely approximates what we can see and four views we can only see by turning. The PDU views (forward, up, left, right and backward) locate and orient me as the PDU wearer in motion, while the in-ear stereoscopic recording devices of the PDU more accurately describe the space, placing us within it. The integrated images and sound present the journey by implying and revealing space, our place within it, and the experience of moving through it.

My sense is that even though the imagery is complex to digest, we immediately see and hear a human body walking. The Head_X format relates to the way I perceived movement through a space. I examined the experience of standing at the end of a room through which I had just walked, and can clearly see what is in front of me, while my peripheral view is slightly distorted and less clear and the view behind is less certain again. Thus I arranged for the left and right views to be turned 90 degrees, representing a less clear peripheral perspective;
turned the back view upside down, to indicate its less certain mental perspective. I can choose to move in any of these directions but cannot move upward, so the central view in the Head_X format indicates my position within the space anchoring me in place at the PAL video frame rate of 25 times per second. The artworks illustrate my perceptions and visual recollections of the journeys and indicate how I oriented and located myself to transform space into place.

The binaural sound recording of the journey is an immediate way for the viewer to inhabit the space and transform it into place. It does this by acoustically describing each space in an experiential way. In Head_X: Commuter Space I & II we hear the sounds of a train entering the station as if standing on the platform; someone's footsteps as they walk past; and the acoustic shift from the open platform into the comparative vacuum of the train carriage when the doors close. In Head_X: Forest we hear the sounds of sticks and leaves crunching underfoot while in Head_X: Washing Up, we hear the clanging of pots and pans.

My body as the performer of the journey and wearer of the PDU is invisible. Everything else is visible: the movement, the spaces and places that were captured and depicted and the technology that was applied to capture and produce the artworks. This is very different from

5.01: An objective photograph of the performer wearing the PDU in transit space
conventional video imagery, in which the recording technology is a black box that frames the subject on the other side of the lens. We get close to the body of the performer within the Head_X imagery as the black box that frames the technical device. The video screen presents a two dimensional representation of five unique spatial perspectives, which depend on each other by being attached to the recording body and in this sense, the body is the camera. The performance consists of the movement of the body illustrated through the images captured of the surrounding space. Further, in the basic Head_X format we see a plan view of a three-dimensional cube space, while in Head_X3 we see a two-dimensional view of a three-dimensional simulation of the cube space. Both of these perspectives speak to the convention of video as a medium that presents three dimensions on a flat screen.

*Head_X: Commuter Space I & II* present familiar, everyday journeys through transit space. They describe journeys as places in movement and in pauses, when the PDU wearer waits on the platform or stands in a moving train carriage. The artworks reveal in-between spaces where different environments collide, such as the movement from platform to carriage interior or from open plaza to retail interior and moments where the feeling of being ‘at home’ seems obvious, such as sequences when the PDU wearer weaves through crowds with speed and ease.
*Head_X: Exit Zimmerstrasse* 12 reveals a transitional space within a commuter journey, from the domestic place of the home through a communal stairwell to the street in a one-minute video loop. The artwork conveys an ‘at home’ feeling through the rhythm and cadence of footsteps running down the stairs.

*Head_X: Washing Up* contrasts the process of adapting spaces into places where one can be ‘at home’ in a commuter journey with movements while performing a routine chore in a kitchen. Here, the artwork reveals body movements that are typically reflexive with full rotation of the visual domain and fast, rhythmic movements that often turn into swift arcs. The intensity and freedom of movement contrasts those captured in artworks depicting transit space, where it is clearly understood that this level of understanding, intimacy and control is not possible.

*Head_X: Ulica Piotrkowska* defines a virtual space, with an interior enclosed by the panels of the Head_X image produced in an animated form, resulting in a representation of a three-dimensional cube on the two-dimensional video screen media space. To enable the viewer to travel into the interior space, the cube has to turn upward to reveal the apparently missing panel. The virtual camera moves into this space and Head_X3 then turns to enclose the viewer within it. These video panels describe the skin or barrier between the internal and external and the public and private realms of the body moving through space. The animation achieves this in a way that the artworks presented in the standard Head_X format cannot, with the view fluctuating from an outside-objective perspective of the geometric shape in motion, to an internal-subjective perspective from within the space. Every few minutes the cube animates in a different way, folding inward or outward to show the streetscape mirrored or projected on its exterior and interior surfaces. We observe the animated journey of the Head_X3 image objectively and can also feel ‘at home’ as a passenger inside the image.

The spatial focus in *Head_X: Forest* contrasts the artworks that explore transit space, with an environment where the visual domain is not related to external reference points. Forward and backward feel arbitrary because there is no reason to move in either direction. The artworks reveal the body spatiality of a PDU wearer (me) who treads on uneven surfaces and maneuvers around tree branches. There are no parallel or intersecting lines or planes from constructed spaces and the horizon is undefined. The PDU wearer marks unfamiliar territory by recording it so the work can evoke a feeling of being ‘at home’ by recalling personal or cultural memories of a forest.

At the exhibitions and in studio discussions about each of the artworks with academics and other artists, I found the informal discussions with
viewers very stimulating. Although I chose not to question them in any formal way, as this could influence their interaction with the work, I observed viewers and noted how they seemed to engage with the artworks. My objective was to see whether the artworks conveyed any ways in which people come to feel ‘at home’. Many viewers wanted to talk to me about their observations. They told me that they tried to understand what they were seeing; which way was forward, backward, left, right and up; and imagined themselves as the wearer of the PDU. This engagement allowed the viewer to transform the video space of the artwork into a familiar place they could identify with as a passenger in the journey. I concluded that through the action of identifying with the PDU wearer to become the performer of the journey themselves, the artworks invited viewers to feel ‘at home’, even though they were physically situated in an artist’s studio or gallery space.

I also observed that many people stayed for some time with the artworks. In Lisbon, viewers of Head_X: Exit Zimmerstrasse 12 typically watched the one-minute video loop at least four times. Viewers of Head_X3: Ulica Piotrkowska in Berlin often sat inside the empty swimming pool it was projected above for periods of 30 minutes or more, turning their gaze from the artwork to interactions with other viewers and back again. At the Lodz Beinnale staff noted an average viewing time of 12 minutes amongst people who observed the work inside the gallery space with headphones. At Kunstpunkt, viewers watched Head_X: Washing Up in a theatre-like environment for the complete 23-minute duration. Some watched it twice. These observations indicated that the artworks might have helped viewers to become comfortable not only with the artworks themselves, but also with the spaces where the artworks were exhibited, and that the viewer recognised a different way of seeing their known environment.

My sense was that viewers engaged with the work through the complex interplay between the spatial dialog that occurs when they try to orient themselves in the image (what is up, forward, left, right, backward) and the instant identification with the experientially recorded sound and body movements. This allowed each viewer to experience the journey as the PDU wearer himself or herself, while at the same time observing the medium. Through this engagement, the space between the artwork and the viewer may have been transformed into a place of identification and meaning.

**Reflections on the methodology**

A Practice-Based Research methodology was used to develop a systematic and cyclical pattern of methods to produce the artworks and examine the research questions. This creative cycle involved the
selection of the content, an appreciation of the resource limitations and use of the PDU to record the basic video and sound material in my repeated journeys through transit space. The last steps in the cycle were the post-production review of the material in Head_X format, and the presentation of the works in private viewings and as installations, which allowed me to reflect on the results and the ways people engaged with the artworks. The repetitive process of performing and capturing the journeys and reviewing the video and sound material in post-production stimulated personal reflections on the nature of space and place and the feeling of being ‘at home’ in the process. My journeys through transit spaces were recorded until they became so familiar that I no longer noticed I was wearing the PDU.

My understanding of this creative cycle empowered me to articulate the ways I have gone about my creative practice in the past and to introduce some new ways of looking at what I am doing now. This will further my art practice in the future because I have a deeper awareness of the methods I use to create artworks and the processes that can be used to develop new methods.

**Further research opportunities arising from the results**

My research methods, findings, equipment and operations could provide a useful starting point for the development of further techniques to potentially assist architects, civic designers, urban planners, geographers, sociologists and video artists. Architects, civic designers, geographers and sociologists could use the PDU to explore and analyse the way people select spaces and adapt to their immediate surroundings in transit space, work environments, healthcare and residential settings, and feel comfortable. Researchers could use the PDU to illustrate the relationship between surveillance networks and the emerging phenomenon of sousveillance. Viewers of the artworks could be inspired to use affordable body-worn cameras to record their movements and experiences. Video artists could use and adapt the PDU and the Head_X format as stimulating tools to extend their work. I anticipate engaging in many useful discussions and perhaps joint artworks around these themes in the future.
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Visualisation Technology: CAVE™, Production Management: Voctok Tokyo, David D’Heilly,
with support from ZKM Karlsruhe. Commissioned for the permanent collection of the
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Projects at University of New South Wales.
Kenderdine, Jeffrey Shaw, Photography: John Gollings, Sarah Kenderdine, Jeffrey Shaw,
Computer graphic design and animation: Paprikaas Animation Studios, Bangalore, Audio
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Paul Doornbusch, Doron Kipen, Stereoscopy consultant: Paul Bourke, Application
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