Towards a CogScenography:
Cognitive science, scenographic reception and processes

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The candidate confirms that the work submitted is his/her own and that appropriate credit has been given where reference has been made to the work of others.

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Acknowledgements

Abstract

This thesis argues that post-cognitivist frameworks that understand cognition as co-originating between brain, body, and world can contribute to both the production and the knowledge of scenography in a post-representational performance landscape. By imbricating radically embodied and enactive cognitive frameworks, and neuroscience metaphors of consciousness and perception within original participatory scenographic practice (*Work Space I*, *II*, and *III*) I develop further my 'arts praxis' (Nelson 2006), what I call the 'scenographic contraption'. This practical, conceptual, and analytical framework generates participatory encounters between materials, space, and audiences, and is further used as a way of conceptualising scenography and participation within these shifting encounters.

I assume three phases of the creative researcher's condition in relation to the audience–participants, and the cognitive theories I am using for my research design: the 'ignorant', the 'Janus-faced' and the 'predictive' scenographer. I iterate between doing and thinking *with* contemporary cognitive frameworks towards the development of a theory of CogScenography, which helps us understand and experience scenography as a synergic way of doing-thinking-co-experiencing.

Documentation

A USB drive is accompanying this writing. This drive includes edited parts from the documentation of the practice and all the interviews, questionnaires, and communication related to this research. The reader will be notified with the following sign: 🎥 and further instructions when it is necessary to view relevant material in addition to the writing. A PDF eThesis copy is also included in this USB drive.

Due to the complexity and long duration of the practice, the video footage is edited to include specific moments. This edited footage together with the embedded figures in the body of the text, support the specific arguments made in my analysis for answering my research questions during each practice cycle. Specifically, in *WS I,* I condensed the three-hour workshop into six minutes in order to show the unfolding of the process. In *WS II*, I have juxtaposed an edited version of the soundtrack and images from different stages of the installation to give to the reader a sense of how the sound worked as part of the spatial experience. In *WS III*, I have used both fast-forward and real-time footage to support and evidence targeted examples of the practice.

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Introduction

Within the current shifting performance landscape –of intimate, site-specific/responsive, urban and expansive environments– scenography, 'the manipulation and orchestration of the performance environment' (McKinney and Butterworth 2009, p.4), is also shifting. Audiences are engaged with scenographies that are invisible, can be felt, walked, digested, made, ignored, found, but they can also 'make us' (Lotker and Gough 2013). Whilst there is an increase in the critical writing produced for analysing, and situating scenography in the current shifting performance landscape, there is however, a lack of critical practice so as to develop further questions, methodological tools and vocabularies for designing, reflecting, and talking about scenography in its current form.

Specifically, there is a gap in researching the audiences' experience and engagement in contemporary scenography, as well as a more reflective exploration from a practitioner's point of view, on the processes of the making of participatory work. For example Sodja Lotker (2015) refers to an 'invisible' scenography that takes place in the mind of the scenographer and is experienced by the whole body of the audience, but there is little understanding in terms of the critical practice to contribute to the knowledge of a post-representational, affective performance landscape.

This thesis argues that post-cognitivist theories imbricated within what I coin the understanding of contemporary scenography 'as contraption' can help us explain and contextualise the 'peculiarities' (Hann forthcoming) of scenography, and contribute to understanding its 'logic and distinctive rules'

(Lotker and Gough 2013, p. 3), as well as the affect, and emotive responses one may have to performance design. This multi-disciplinary project explores the usefulness of applying cognitive science frameworks in researching participatory scenographic processes and reception in hybrid performance environments, and understands scenographic experience as co-originating between the audience, the scenographer, and the designed environment, something I call a 'groundless scenography', and I will outline why through my writing.

Cognitive and Performance Phenomena

The noticeable impact that social media networks, virtual reality platforms, and other network-aided communication have on our contemporary understanding of perception, social interactions and how we negotiate our experience, is complemented by the impact brought forth by the knowledge of yet another complex network: that of the human brain. Neuroscientists are using the development of imaging tools, e.g. fMRI, to further understand the brain's complex neuron system. However a persistent insight of the second half of the 20th century and of the 21st century, as performance scholar Clayton Drinko rightly puts it, is that 'there simply are no universals in neuroscience' and 'it is important to consider the results of brain scans as just one piece of a very complex conversation' (2013, p.97).

Therefore other disciplines are employed to work together based on the rich empirical data provided by brain scans, in order to produce new knowledge, transform previous understandings, or shed some light on current knowledge of what it is to be human. Imaging studies may show us that brain functions and emotions (such as speech, stress, fear, even altruism)

are localised but what makes us human is not determined by behavioural switches that one could turn on and off in specific areas inside the brain.

Andreas Roepstorff (2013) whose research is located between cognition and anthropology explains that scans are not photographic cameras but they represent complicated mathematics. These images produced by the scans, he continues, have a double life: on one level they are simplified and presented by the media, for example, as evidence to show aggression in a person compared to one who is not aggressive; and on another level they are used in a laboratory where researchers rate them, and different experiments produce a number of different images. The first option makes a scanner look like a magical tool, where in fact a scanner is more like the measuring tool in the second case and therefore what is important, according to Roepstorff, is to come up with ways of representing the data. He admits that this is a process similar to telling *a story*; one that seems to be right at the given moment, and in relation to the knowledge of the team who is making the analysis of the data (Roepstorff 2013).

A large number of contemporary cognitive science thinkers (i.e. Evan Thompson; Andy Clark; Anthony Chemero etc.) drawing from this empirical data distance themselves from Cartesian dualism which suggests 'the story' of a distinction between the body and mind and embrace 'the stories' of embodied, embedded, enactive and ecological (the so-called 4Es) aspects of cognition, which suggest that human cognition is an on-going collaboration between brain, body and environment. These post-cognitivist theories, rooted in phenomenology but based on empirical evidence (the scans, ratings, and conversations between fields I discussed previously), suggest that cognition co-emerges from (or is rather enacted by)

the whole body and its engagement with the environment, and further observe that:

> (T)here are strong phylogenetic reasons why cognitive capacities have turned out to be highly embodied and embedded (Sterelny 2010, Stotz 2010, Jeffares 2010) and that, therefore, we need explanatory resources that go beyond the dynamics of neural networks (Menary 2010, p. 460).

Evan Thompson argues that a similar understanding applies to consciousness and that the *story* of cognition being in the head is like suggesting that a cathedral is in the stones, or the building, meaning that one needs stones to make a cathedral and these stones need to be connected skillfully, but what makes the cathedral is also 'iconography, tradition, and its being a place of worship' (in Heuman 2014). In a similar way he says 'consciousness isn't in the neurons or their connections' only but 'consciousness is a life-regulation process of the whole body in which the brain is embedded. In the case of human consciousness, the context is also psychological and social' (ibid.). The idea of consciousness and cognition being not only inside the neurons but within a biological and sociocultural, and psychological context resonates with the idea of scenography not being only in the design (the 'set', the digital technologies i.e. projections, the materials i.e. paint, wood, fabric, the light, or the positioning of the audience) but within a co-originating relation with all of the above, and within a specific geographical and sociocultural context.

This interrelational architecture of the notions of consciousness, and cognition, situate them as far as their organisational structure is concerned, within networks, brain-webs, complex top-down and bottom-up circular co-originating exchanges, perpetual processes, and rhizomatic formations. I argue that these organisational understandings of consciousness, and

cognition also share similarities with how scenography can be structurally understood in its participatory and expanding view.

In contemporary performance, the landscape is being inhabited by forms of hybrid, participatory, boundary-shifting performance systems inviting the audience–participants to become co-creators of the work. Claire Bishop, referring to participatory performances, talks about the '*return* to the social turn' (Bishop 2012, p.3) highlighting that this shift in spectatorship is not a new phenomenon; however my research focuses on how this participatory phenomenon unfolds in the now.

Contemporary theatre and performance scholars are exploring the creative ways in which the boundaries between performance space and audience space shift or disappear, and the communication between performance and its audiences in this new landscape. Aronson sets the scene for today by saying that '[i]t may no longer be a case of violently shifting boundaries, but rather that the boundaries have disappeared all together' (Aronson 2008, p.25). Therefore scenography is currently referred to by scholars as a process (i.e. Aronson 2005; McKinney 2008) instead of a set product, and it is explored as an integral part of the ephemeral, multimodal, experiential and multi-sensorial nature of theatrical experience(s) and beyond.

Furthermore, this two-way exchange between performance and audience has led scholars like Di Benedetto to argue about the 'power of theatrical representation to transform the human experience' itself (2010, p.x), or the transformational effect that a performance, especially a visceral one, might have on our embodied 'plastic brains' and the ability of art to 'deeply influence the way that the brain is structured' (ibid. 2010, p.22). Although I agree with Di Benedetto's statement above regarding the transformative

power of performance, I will point to the term 'theatrical representation' as problematic, as our era asks for an art beyond representation. In cognitive studies, representation is also considered a vexed term as it is related to cognitive processing that is 'computational', suggesting inputs-outputs and mental representations inside someone's head.

Varela et al., contrary to computationalism, support an understanding of cognition as enactive where the organism and environment 'enfold into each other and unfold from one another' (1991, p.217). This theory does not have a fixed foundation, as it is always dependent on the pathway established by our enfoldment with the environment, and our unfolding from it, and it is therefore groundless. When Varela et al. refer to 'groundlessness' they refer to it as a philosophical issue, open to discourse, and identify its roots to the lack of an ultimate ground (Varela et al. 1991, p.214) i.e. an independent external world. Using abstract thought without embodiment is not helpful for learning how to live in a groundless world, according to the enactivists:

> [C]ognition is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs' (ibid. 1991, p.9).

My aim is to bring the above understanding to scenographic making processes and reception in an attempt to communicate the synergetic coupling between the agent and the environment and to shed some light on the post-representational methods, the languages and the innovative practices or the recycled practices that might emerge by doing so. My focus is on scenography in participatory performance as a discipline of hybridity, combinations and in-betweens. As a creative researcher, my enactive ontological understanding of the theatrical experience of contemporary

scenography is process-based where the world and mind are inseparable in a universe that is 'enfolding and unfolding' (Varela et al. 1991, p.217).

Following scholars like McConachie and Hart (eds. 2006); Paavolainen (2009); Di Benedetto (2010); Shaughnessy (ed. 2013); Bleeker & Germano (2014); Blair and Cook (eds. 2016) and others in the field I also agree that embodied, embedded, enactive, ecological and affective (4E) cognitive theory is a valid framework for analysing the multi-faceted nature of theatre and performance. The radical embodied, enactive, ecologically and socially extended cognitive theories i.e. Varela et al. (1991); Gibson (1986); Nöe (2004); Chemero (2009); Clark (2008-2016); Bruineberg, Rietveld, Kiverstein (2012, 2014, 2016); Ramstead et al. (2016); Roepstorff et al. (2010) are of particular interest to this project and will be used as a way of analysing the multimodal nature of creating scenography and the equally multimodal reception of scenography by its audiences in my practice-led investigations: *WorkSpace I*, *WorkSpace II*, and *WorkSpace III*.

Background of the Researcher and Entry Point

I am entering this project with nearly 15 years of experience in design and practice for performance (devised, installation, site-specific), large-scale events, and film shorts, and with my training and education focused in the field (Drama Department, School of Fine Arts, Aristotle University of Thessaloniki 1996-2003, MA Scenography, Central St Martin's College of Art and Design, UAL, 2004-2005). During my time in the latter I developed my research interests around the notion of the carnival and I embarked on exploring the idea of a polyphonic collective consciousness, between the audience and the performance space, following the writings of Mikhail

Bakhtin. My practice was reinforced by a placement at Cricoteca (Centre for the documentation of the art of Tadeusz Kantor) in Krakow, where I was given the opportunity to be part of a team who investigated the archives of Kantor's work and to produce mixed-media performance material inspired by his 'emballages', and drawing from notions of the grotesque. This mixing of puppetry, objects, sound, performers, and audiences' bodies has been instrumental to my scenographies as the reader will be able to see in the practice of this work.

I have been living and working in London for a decade before this research project (2004-2013). London is a vibrant bubbling multicultural cauldron of overflowing information and opportunities; living on the boil can be overwhelming and rewarding at the same time and it needs effort and resilience to navigate within the interchangeable and complex dynamics of a global city. Diversity in culture and financial status, the gentrification of the last decades is altering the urban landscape in an unmistakable way, creating constant movement and juxtaposing imagery. The city also provides never-ending engagement with art and performance both local, and international. These parameters, and experiences within an urban landscape, have influenced my work and have impacted on my way of thinking about scenographic practice. In London I co-founded in 2006 the international artists' collective *Poemstomyotherself* (http://poemstomyotherself.org.uk/), where after a site-specific production at The Round Chapel, Hackney the group engaged in an R&D project (Nov 2008 - January 2009) supported by Camden People's Theatre involving collaborative inter-disciplinary art research on memory, identity and the brain. We developed a method toolkit for generating collaborative

performance material using a system-game of cards, and organised gatherings to talk about synchronicity and interdisciplinary artistic collaboration.

London is also where, since 2008, I have led the experimental platform *aswespeakproject* (http://aswespeakproject.org) where I work together with sonic, performance and other artists to create hybrid participatory performance environments and present these at contemporary performance festivals, galleries and found spaces internationally like The Benaki Museum, Athens (Locus Solus exhibition, 2010); The Round House, London (Accidental Festival, 2011); El Museo Cultural de Santa Fe (Currents New Media Festival 2013, New Mexico); Shunt Vaults, London, 2009; The Bluecoat, Liverpool (Poolside Emergency, 2013) etc. The idea behind my work within the 'aswespeakproject' is to create complex, yet simple scenographies-installations offering a number of stimuli so that the audience–participants generate their own mental, material or visceral connections corresponding to the complex scenographic environment, the materials on offer and their co-audience–participants.

I will give below an example of my work through the *aswespeakproject* in order to illuminate the reader on an example of the tacit knowledge I bring into this research, and the reasons behind pursuing this research project by practice. Furthermore, I aim to show what brought me to the intersections of performance, scenography, and cognition and how my background helped me to design this multi-disciplinary research project.

In the durational piece *I know this, I do this all the time (I don't like it though)* audience–participants' drawings, projected live on the performer's visage,

are collected by the performer and gradually overtake her private territory, unearthing patterns.
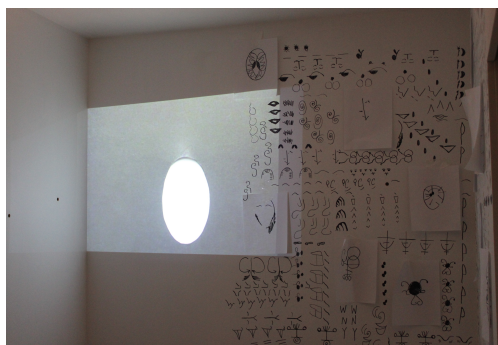
Figures 1, 2, 3, and 4. *I know this, I do this all the time (I don't like it though)* performance installation (2009). From Currents 2013, New Mexico, USA. Performer Kate Kita.

In this work, the scenographic environment fleshed out an imaginative metaphor of how the brain-self might communicate with other brain-selves. I tried to create scenographically the process of how information from 'the Other' (another person) is perceived and transformed, accepted or rejected by the 'I'-self (Figs. 1, 2, 3, and 4).

This system is not dissimilar to the architectonic schema which is suggested by Bakhtin who argues that identity does not depend only on the individual 'I' but is co-determined by how others view the 'I' and it is therefore a shared process: 'I -for-myself, the other-for-me, and I-for-the-other' (2010, p.54).

This schema, when imaginatively enacted as a guide for a live performance, provided a subtle code of conduct between the audience–participants and

the performer, the materials (i.e. pens and paper), and their co-audience–participants. In order to enact the metaphorical idea of communication between the self and 'the Other' a computational schema of the order of representation, process, and transformation was appropriated. The performer was given an improvisational score, a set of actions, aimed at fleshing out this idea: you receive something that is created on the spot by someone else and either accept it as it is (the performer would hang the original drawing on the wall), try to understand it (the performer would copy the same design on the wall and repeat it several times), transform it (the performer would look at the drawing and choose a part of it to copy on the wall), or reject it (the performer would throw the drawing on the floor). The repetition of this activity for up to five hours at a time generated patterns of accumulated paper on the floor and drawings-patterns on the walls. Depending on the ending instruction each time the installation was performed, this haptic data would either overflow and bury the performer, or be constantly re-arranged in the small white room by the performer in her attempt to find a point of balance in the space. This process-scenography defined a certain being from the audience–participants: they watched the drawing process, waited for their turn to draw, reflected on the experience or walked away. Without any verbal or written instructions therefore the audience–participants picked up with their bodies the way of being in relation to the design by watching what others did and by trying out their own ways.

This enactment of an imaginative model of thought process, a construction of what I called a 'head-space', initiated for me a hands-on, artistic dialogue between contemporary performance practice and worldviews related to

human cognition, through a number of works (of which there is no space to go onto mentioning here). The reason I am mentioning the above work is because it also generated questions regarding the immaterial tools that can be used for orchestrating a scenographic environment, and the audiences' response i.e. how do audience–participants know how to engage with the different parts of the work? Further questions were generated related to understanding the workings of these scenographic systems, and understanding the audiences' experience of these scenographies i.e. where else, apart from theatre and performance, can we find these sort of interrelational structures, and aesthetics? How might these other structures (i.e. the Internet, neuronal systems, systems thinking) help designers with creating experiential participatory environments for audiences?

These questions led to the design of this research project here, where I took up the idea of using cognitive architectures of consciousness and perception. Specifically I use current worldviews of consciousness imaginatively as scenographic blueprint mechanisms to orchestrate the space. The reason I am entering this imaginative dialogue is because as a creative researcher I am looking for structures in order to contribute to inventive performance design and practice both in critical and artistic terms, looking at hybrid performance that breaks away from traditional methods of attending. As argued by Umberto Eco:

> The moment an artist realizes that the system of communication at his [sic] disposal is extraneous to the historical situation he [sic] wants to depict, he [sic] must also understand that the only way he [sic] will be able to solve his [sic] problem is through the invention of new formal structures that will embody that situation and become its model (1989, p.143).

I argue that what Eco says above about the invention of new formal structures can be reflected in the form of scenographic contraptions and contraption-environments which can be informed by embodying and en-spacing current scientific abstract thought (models of consciousness, perception). I will refer to this methodological tool extensively in my Methodology, and Performance Experiments section.

Apart from the imaginative exchange with current cognitive architectures, I am also drawing from current 4E cognitive theories for analysing scenographic participation and interaction. As Nicola Shaughnessy observes: '[c]ontemporary performance involves a complex fusion of simultaneous states of presence', and goes on to say that cognitive theories of performance can aid 'thinking physically' and the 'felt understanding' of visual auditory and bodily experiences (Shaughnessy 2013, p. 13). With this project I am exploring how the above thinking and understanding can be extended to space, and to the performance environment, and how it can be developed towards a cognitive theory of scenography, that may help us understand the 'how' of the workings of the complex simultaneous states, the multimodal spatial thinking, and the felt understanding of contemporary scenographies.

My transition from a practitioner to practitioner-researcher brings into this research a number of methodological tools that I have been exploring and using as creative methods while a practitioner. I will refer to two of these briefly here that have been brought into my research methodology (and will expand further throughout this research):

Creative method 1: Scenographic Contraptions. The use of 'contraptions' as scenographic tools is an original method that has been applied in my work

pre-PhD to create devices-props but also for the creation of environments I referred to as 'contraption environments' related to concepts of process, rehearsal, re-enactment. Their aim is to facilitate the interaction between the audience–participants and the performance, bringing together the fragmentary actions occurring in the performance space towards the production of meaning. This method of imaginatively fleshing out concepts (like communication, memory, time etc) in the form of 'scenographic contraptions' (Figs. 5 and 6) or 'contraption environments' (Figs. 7 and 8) works as a devising tool for co-authoring performances with the audience–participants, and as a way of encouraging a scenographic conversation between the audience–participant and the work. A paper I presented the year before starting this research project *Scenographic Contraptions – in Aid of the Body's Memory* (2013) (see Appendix A) set the foundations of my thinking for the understanding of the relation between brain, body and performance space as an inventive process.

Figures 5 and 6. Drawing contraption for *I know this, I do this all the time (I don't like it though)* (2009 - ongoing). The audience use a hand-made video mapping device and watch their drawings being projected on the performer's face in real-time. xristina penna +aswespeakproject. Performers Julieta Kilgelmann and Kate Kita.

Figures 7 and 8. *Uncovered*. A 'contraption environment'. The audience entered a room and were invited to participate in a process (such as to answer a set of questions related to a piece of their clothing; trace out its shape; watch an impromptu dance; etc.). As part of *Poolside Emergency,* The Bluecoat, Liverpool. xristina penna +aswespeakproject. With Vanio Papadelli and Michael Picknett, 2013. Image© Jody Leach.

Creative method 2: Material coming from the audience. In both the above examples the audience–participants were invited to produce drawings, or doodles, which remained in the space, or were given to them on their way out. In *Uncovered* (Figs. 7 and 8) we asked the audience–participants to take off one item of clothing behind a curtain, and leave it there; they would then put on a robe and join the performer in uncovering stories regarding their projected clothes. The emerged work was each time different as it was dependent on the shifting material the audience–participant agreed to bring into the work. This corresponding environment considers the audience's participation as an artistic component of the work and 'as art' (White 2013, p.196), and generated various responses from the audience (resistance, crying, indifference, affection etc.)

Both the above methods have been employed for my current research. The performance installations and props I produce for my practice-research I therefore call 'scenographic contraptions'. I analyse the audience–participants' interaction with the materials, space and their co-audience using action-oriented and agent-environment coupling cognitive theories (4Es). The work produced relies on the material from the audience–participants by asking them to share their experiences live on a microphone (*WS I*), mixing pre-recorded footage of the audience–participants' voices (*WS II*), with the use of their images, videos and status updates from Facebook, asking them to draw during the event (*WS III*), etc.

Having outlined above my particular area of design expertise I hope I have explained to the reader the type of tacit knowledge I am bringing to this project: a scenographer's knowledge, and understanding that goes beyond the traditional designing of sets (without however excluding these), and

engages with orchestrating immaterial and social ingredients of scenography. I also hope I have communicated how I have arrived at the beginning of this investigation of the intersections between scenography, participatory performance practice, and cognitive science using practice-research. A further analysis of how I have navigated from this entry point onwards one can find in my *Methodology* section and in my *Performance Experiments* section. For this research project I am taking a pause from professional practice to reflect on the current shifting performance landscape by using critical practice-experiments in order to speculate on what scenography can become, recognising that this work wouldn't be able to be realised outside the 'safe space' of academia.

Research Questions

– How might current post-cognitivist theories that refer to the mind as embodied, embedded, enactive, ecological, and affective (known as 4Es) be used as critical and creative frameworks for analysing and understanding the multimodal nature of scenographic making processes and participation?

Sub-questions:

–   How might 4Es frameworks and specifically radical embodied cognitive neuroscience and the more generally applied notions of encultured cognition contribute further to understanding the workings of dynamic scenographic systems within the current landscape of hybrid, participatory performance?

–   How might the empirical metaphorical models of consciousness of Baars (1988), Dennett (1991) and Edelman and Tononi (2000) and the predictive processing framework (Clark 2013b) be employed and applied imaginatively as creative methods for developing the aesthetics of dynamic performance/scenography systems?

–   What are the implications of the findings of 4Es, and embodied predictive processing (PP) on scenographic making processes?

–   What are the implications of the findings of 4Es, and predictive processing on scenographic reception research?

–   In what ways might we use 4Es and predictive processing to investigate the audiences' experience of dynamic/scenographic systems?

Part I
CONTEXT

Chapter 1
The Scenographic Turn Meets the Cognitive Turn

1.1 Shifting Perceptions and the Theatre Space

> What we say about the world tells us as much about ourselves as
> it does about the world (Varela et al. 1991, p.142).

A number of performance scholars describe the ways in which knowledge and the history of ideas have impacted on scenographic reception and production. In scenography Arnold Aronson points out that 'the stages of every society are different, and yet each of those societies saw its theatres as an [sic] reflection of its world' reflecting thus 'its particular society's understanding of space' (2005, p.104). As Trimingham puts it 'the question of how a performance comes to 'mean' for an audience is intimately connected with the how the world itself comes to 'mean' for us' (2013, p.229).

Scholars like Demastes (2002) and Di Benedetto (2010) argue that scientific findings and our cultural worldviews are interdependent: Demastes argues that there is a fruitful or even conspiratorial synergy between contemporary theatre and contemporary science theories such as quantum physics, and chaos theory in order to challenge the linear thought of 'traditional reductionist' science and 'traditional' theatre making and spectating (2002, p.6). Di Benedetto's work focuses on contemporary performance and reflects also on the idea that 'theatrical form is an expression of contemporary thought processes' (2010, p.1). In a similar way to the previous thinkers Umberto Eco when writing in the 1990s, points out the importance that contemporary science has on artists:

> [Contemporary artists] acknowledge the new vision of both the physical and psychological universes proposed by contemporary science, and realize that they can no longer speak of this world in the same formal terms that were used to speak of an orderly cosmos (Eco 1989, p.142).

The post-cognitivist views that my research is based upon draw from similar understandings of not being able to talk about the world as an orderly cosmos. Varela et al. admit that the enactive view of a mutually enfolded life and world 'results in a sense of vertigo due to the collapse of what we had supposed to be sure and stable foundations' (1991, p.144) and refer to the enfolding and unfolding of organism and environment as a 'groundless' world. They further agree with Hilary Putnam who observes that science is good at removing foundations without providing new ones, and conclude that our historical situation 'requires not only that we give-up philosophical foundationalism but that we learn to live in a world without foundations'. They argue therefore that this unresolved historical situation puts us in a position of having to 'philosophize without foundations' (ibid. 1991, p.218).

Following up on the idea of the co-relation between the making of our worldviews and the making of the stage, the questions that arise from the acceptance that our world is groundless can be considered pertinent to a scenographer. A scenographer's work in hybrid performance environments entails not only designing something that will be built but also figuring out how to orchestrate the expanding and shifting forms of the audiences' mutual enfolding with scenography in a groundless contemporary performance landscape; where, as already mentioned, scenography can be invisible, where it can be felt, walked, digested, made, ignored, found, but it can also 'make us' (Lotker and Gough, 2013). This groundless scenography (if we borrow the words from the enactivists), the scenography in which

audience and design enfold into each other and unfold from one another, assumes a co-originating orchestration between audience, design environment, and scenographer. This groundless understanding has been tested in this thesis so as to develop 'groundless' methods, ways, and further our appreciation of the role of scenography in the current groundless performance landscape.

On another level this groundless understanding brings forth further questions regarding immaterial aspects such as the emotions, and feelings that this way of experiencing and making of the work generates. The ethics related to the audiences' experience (including their physical and mental safety for example) need to be taken into account into this orchestration so does the meta-experience of the audience (the impact the experience may have on them post-show).

The unsettling feeling, that is brought to a person by the feeling of groundlessness, has been coined by Richard Bernstein 'Cartesian anxiety' (Bernstein, cited in Varela et al. 1991, p. 140). In Continental philosophy Derrida refers to the concept of centred structure as the concept of 'a freeplay based on fundamental ground' (1993, p.224), and observes that:

> with this certitude anxiety can be mastered, for anxiety is invariably the result of a certain mode of being implicated in the game, of being caught by the game, of being as it were from the very beginning at stake in the game (ibid.).

Varela, Thompson and Rosch suggest a solution for tackling the anxiety caused by 'taking groundlessness as negative'. This is not the finding of a new ground or grounding, or the return to an older ground but 'to find a disciplined and genuine means to pursue groundlessness' (Varela et al. 1991, p.253).

In Western culture we are now past the threshold of representation and have entered the stage where we are still discovering and inventing our way in a post-representational world, holding with one hand tightly to Cartesian dualism. The question is how do we communicate this past-the-threshold moment? I argue that since we are at a moment in Western thinking and sociocultural conditions, which is in perpetual transformation and co-origination, the notion of an invention in its inceptive form may be appropriate for communicating scenographically and conceptually this moment of past-the-threshold. The notion of 'contraption' offers the form or the structure of an organism, like a process with lots of instruments and problem solving mechanisms that are co-originating and are resolved with our intervention. This intervention involves looking at other people's interventions and doings, or what Varela et al. call 'acknowledging the other with whom we dependently coordinate' (ibid. p.254). Since the notion of contraption does not suggest an end to a problem, the only way we may resolve the perpetual problems is by working with others not necessarily in a binary active-passive way but in communion, by inventing, reflecting, talking, observing etc.. A contraption does not guarantee a final product, and therefore a generation of different contraptions may occur. There is not one cure to groundlessness, there is no telos, but enaction, reflection, awareness, critical embodiment, ecological, and emotional intelligence, and moments of clarity.

When talking about shifting perceptions and theatre space, Bleeker refers to the concept of perspective as an '*invention* of the early Modern period of art' (2008, p.12, my italics) later adopted by theatre, which is fundamental to the 'development of the modern scientific world view'(ibid.). Bleeker refers to

Mieke Bal's argument that 'concepts are like metaphors replacing a story' (Bal 1994, cited in Bleeker 2008, p.14) and that these metaphors are so interweaved within our collective thinking and way of doing things that soon the story, and point of view from which they derive is forgotten (Bleeker 2008, p.14), and argues that perspective 'is such a metaphor covering a story' (ibid.) of the world 'as it is' (ibid. p.46) (see Fig. 9). Following the above line of thought in the now, and bringing this concept to scenography, I suggest that to cover the current post-representational story of the mutually enfolding and unfolding world and agent in participatory performance practice, we can use the concept metaphor of the 'scenographic contraption'.

Figure 9. An initial conceptualisation attempt of the contraption metaphor following Bal and Bleeker. The structure of a contraption as the grammar for generating and navigating the language of groundlessness in contemporary performance. An updated diagram can be found on p.211.
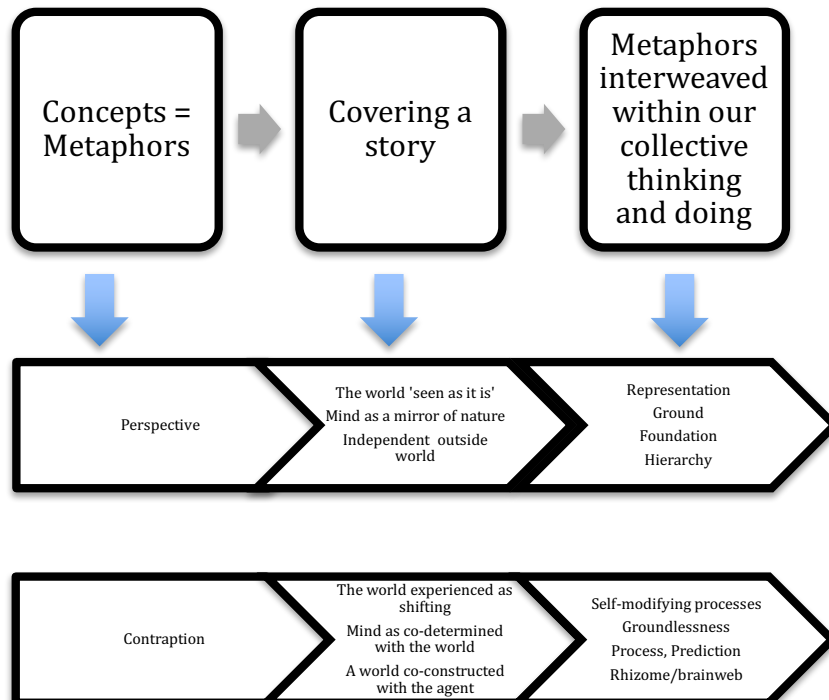
Adolphe Appia in the beginning of the 20th century said that:

> once the paint has dried upon a surface it is static, whereas dramatic action and human emotion changes and grows.

> Therefore, placing dramatic action, which lives, against a painted scene, which is static, is nonsense – therefore, abolish painted scenery (cited in Baugh 2013, p. 58).

However the notion of the scenographic contraption tackles this 'nonsense' by accommodating it, by allowing something that lives to be put against somethig static, as long as this 'nonsense' doesn't dominate the sense-making mechanisms of the audience.

The scenographic contraption generates different viewing rules but includes perspective as one way of viewing. What the contraption does I argue (Fig.9) is that it situates the world not *s*een 'as it is' but experienced, felt or even accepted shifting 'as it happens' for each audience–participant. The latter gives the audience–participant the same status at times as that of the artist-scenographer, however within a world provided by the artist-scenographer.

Philosophical concepts of the world do not disappear overnight and the Cartesian model is so ingrained in our culture that is often hard to let go of it, or to know how to let go, because it is part of our 'various histories' as the enactivists say. Future scholars may be able to observe clearer, and with a clearer *perspective* (if this word continues to be used in the future), which are the 'forgotten stories' (Bal 1994, cited in Bleeker 2008, p.14) that linger behind today's metaphor-concepts. However, enactive cognitive science aims to contribute to breaking the 'bad habits' (Varela et al. 1991, p.25) of the 'dissociation of mind from body, or awareness from experience' (ibid.). By using such theories of cognition, complementary to a phenomenological understanding, my research aims to suggest new approaches and habits of embodied and ecological audiencing and spectating, working with scenography as a tool.

Aronson suggests a series of useful practical questions for a scenographer in developing spatial insights: 'How do we see space today? How do we recognize [sic] it? How do we define it?' (2005, p.105). An additional contemporary question, following the debate in the field today I suggest would be: How does space define us? One way of answering the above questions is through critical and reflective observation of the everyday without rejecting the past altogether, but by engaging critically with notions from our histories, which need to be looked or pushed beyond their current boundaries. Alongside the broader worldview ideas, there are a number of interweaving sociocultural and political reasons that can be identified as affecting the way we understand space today, such as the impact of digital technology and social media on our day-to-day experience of privacy and intimacy within urban and suburban surroundings, and the local, made national, made global.

In the contemporary performance landscape in the West, one can observe the development of new forms of hybrid, 'immersive', interactive or participatory dynamic or boundary-shifting performance spaces where the public and private, performance space and audience space intertwine or even disappear, suggesting that the audience can choose their point of view and positioning. These observations point to the fact that we are experiencing a transient phase of experimentation in the field. This can also be observed in the demand from the part of the audience to peer behind the scenes of creative processes. Not only has the audience's point of view from a unique, hierarchical perspective of experiencing a production changed to allow them to choose a shifting viewpoint in 'immersive', site-specific and other types of productions, but in some cases there is an expectation from

the part of the audience for even more direct, and somehow raw negotiations in the process of the artist/artwork/venue, to experience the mechanism that is involved in the making of it. For example a current trend is for national theatres, and operas, to offer to their audiences the opportunity to attend rehearsals, and therefore see how the work is developed, almost like showing unfinished drafts of a script to the readers before the final draft. Another example is to be given access, in National Galleries, to infrared reflectography devices in order to see the hidden layers behind paintings, in order to develop a unique insight into the work, or feed their curiosity.

Deconstruction however, creates multiple and simultaneous viewpoints and ways of seeing, and the impact of this acceleration of opportunities and access to processes is continuously re-wiring our worldviews and extending the ways in which we engage with theatre and performance. I don't have much space in this study to expand on the implications of these trends, but I can make a reference to participatory performance where, in a sense the whole theatre apparatus is exposed, and audiences are gradually getting used to this and don't register it as unusual.

This research recognises therefore that in contemporary participatory scenographic practices, the viewer is free to move and assume different viewing positions, but agrees with Bleeker that this does not constitute them 'free to see as he or she wishes' (Bleeker 2008, p.16). It also acknowledges Adam Alston's critique of immersive performance; Alston alerts us to the dangers of neoliberal consumerism and individualism, and the ways in which their narcissistic effects that can end up 'prohibiting an equal distribution of participatory opportunity' (Alston 2013, p. 137). This practice-research aims

to contribute to the making of participation that is equally distributed, and point out the habits that prohibit this equal distribution.

I will therefore take part in the debate of the 'scenographic turn' (Collins and Aronson 2015) as outlined below, and will aim to contribute to how as artists we can develop nuanced ways in which we can engage audiences in distributed 'groundless' participatory environments. In order to achieve this I am using frameworks from cognitive science and this research is about this 'how'.

1.2 Contemporary Scenography: Expanded, Invisible, Shared, Layered, Public, a Process, a Way of Thinking

Although the question: 'What is scenography?' has been posed and answered in several ways by scholars and practitioners in the field, it feels appropriate in this study to address it again briefly. I am referring to the word 'scenography' (as used in the English language) as a term and concept situated in contemporary performance and theatre in the West. I will also be using the term 'performance design' in my writings because of practical reasons, since the crossover of my research with fields outside the theatre spectrum (i.e. other humanities fields and the field of science) requires the use of the term 'theatre and performance design' which is better understood in these fields; I will therefore switch between both terms depending on the context of the writing.

The aim of this short introduction to scenography is to glance briefly at the past fifteen years with reference to the aesthetic, social, and political turns of scenography, known currently as the 'scenographic turn' (Collins and

Aronson 2015). What I am looking at in this brief mapping of the recent past is to how does this thesis aim to contribute to this scenographic turn.

Pamela Howard posed the question 'What is Scenography?' (2002) at a timely moment to point out the lack of recognition from the theatre industry and consequently from the critics and the audience towards the contribution of designers in performance making. Howard goes on to emphasise the immaterial dynamics of the scenographic experience by stating that '[s]cenography is always incomplete until the performer steps into the playing space and engages with the audience' (2002, p.xix). Arnold Aronson suggests in 2005 a definition: 'Scenography' he argues 'carries a connotation of an all-encompassing visual-spatial construct as well as the process of change and transformation that is an inherent part of the physical vocabulary of the stage' (2005, p.7). The idea of scenography as a process rather than a product is furthered by McKinney who suggests that scenography 'is a process of thinking which oscillates between the visual, the haptic and the cognitive' (2008, p.34). This thesis elaborates on this view, and by having an enactive, embodied, and ecological approach to cognition investigates the bidirectional understanding of the embodied brain and 'stage'.

The immaterial nature of creative processes and its orchestration for the making of a theatrical experience is a common discussion in theatre scholarship (e.g. McAuley 1999) and theatre practice (Machon 2009). McAuley (1999, p.12) argues that every performance (theatre, live-art, performance art) is 'always in process', never a finished product, and so 'performance energy' the 'something more that is always present in the theatre' is a quality that exists in all theatre and performance because of the

relation between the performers and the spectators (ibid. p.125). The tension between the real and not real is always present, and 'it can be argued that it is precisely the dual presence of the real and the not real that is constitutive of theatre' (ibid. p.127). This thesis argues that cognitive science can aid scenographers in communicating this 'something more' in-between-ness, or between-ness by using the enactivists 'Janus-faced' approach of thinking between material-immaterial. This methodological tool will be unpacked further in my Methodology section.

Theories of new materialism that argue about the agency of matter and address the non-binary complex relationships and connections between matter, human, non-human, material, culture have been used in scenorgraphic scholarship by Donald (2014, 2016), McKinney (2015) and Beer (2016). I will frame here some of the insights of new materialists by referring to Barad (2007) who uses the notion of 'intra-action' to develop the understanding of a co-relation between differential patterns of mattering that extend beyond an anthropocentric view of meaning-making.   Also Bennett (2010) who argues that matter is vibrant 'an actant' and refers to 'thing power' to an extend that the environment as a notion becomes irrelevant. She proposes her interpretation of Deleuze and Guattari's notion of assemblages as 'the tendency of matter to conglomerate or form heterogeneous groupings' (Bennett 2010, p.xvii). My thesis is consistent with the enactive understanding of the mutual enfolding and unfolding of the environment and agent and the idea of co-emergence (rather than emergence). What Bennett refers to as 'assemblage' is close to my understanding of 'contraption' (see also p.37 in this thesis) and post-

cognitivist frameworks have helped me to support this notion as is outlined in this thesis.

Play theory (Huizinga 1949; Cohen 1993; Izzo 1997; Caillois 2001) has been used in scenographic scholarship by Bayliss, Palmer et al. (2009) and Popat and Palmer (2005) as a research tool to establish a collaborative process between performance and digital disciplines and to answer research questions such as: 'how a designed outcome can induce play for participants and how play can be embraced within an open system of design' (2009, p.2). These studies are pertinent to this project alongside literature in the cognitive field that refers to play (i.e. Clark 2015a) because play is a notion that exists in all the *Work Spaces*. I am not however addressing it explicitly but rather exploring it conceptually within the work, meaning that I am not using play as a framework of analysis in this study as it would have taken up valuable space and focus from the social emphasis that was my intention to explore in my thesis.

Since Howard's timely writings in 2002 we have intentionally and willingly gone a long way on an international level in the field, especially during the last decade, in establishing that scenography is not to be perceived as 'being in 'service' to the written play and to the director' but as 'an artistic discipline in and of itself' (Lotker 2015, p.17). Notions such as 'environmental theatre' (Schechner 1973) and 'environmental scenography' (Aronson 1981) have been coined for the study of audience and space in performance. In his *Environmental Theatre* (1973) Schechner outlines six axioms in relation to space, text, and audiences. In these axioms his understanding of a theatrical event is a set of related transactions, and advocates freeing the theatrical event from the text and from a specific space and place, highlighting at the

same time the importance of all the production elements. Aronson's (1981) work includes historical examples of productions that have used found environments, environments in the context of happenings, and transformed spaces. He explores works in which the formation of the audience changes depending on the space by giving examples from the works of Arianne Mnouchkine, Jerzy Grotowski, Allan Kaprow etc.

In 2008 Hannah and Harsløf explore and invite other researchers to generate new vocabularies that will reflect the current expanding theatre design practice when 'design leaves the confines of the stage and begins to wander' (2008, p.12). Through this invitation they address the need for the development of critical and creative frameworks for exploring and developing engaging performances and transformative experiences for contemporary audiences beyond the theatre stage. This continuous re-consideration of the performance environment from the 1960's onwards invites researchers and performance designers to investigate 'not only how we create scenography/place but also how the scenography/place makes us' (Lotker 2015, p.13).

This growing shift on the thinking and doing of scenography is reflected on the change, in 2007, of the title of the scenographer's quadrennial international exhibition (PQ) from *The Prague Quadrennial International Exhibition of Stage Design and Theatre Architecture* to the more concise *The Prague Quadrennial of Performance Design and Space*. The new title introduces a more assertive identity by omitting the explanatory 'International Exhibition', and inserts the broader terms 'Performance Design' and 'Space' which are also inclusive, denoting an openness to contributions (such as installation and live-art, curation, broader ideas of hybrid performance and

architecture design, design concepts, etc.) and opens the PQ 'to a contemporary discourse on space and in particular toward a transdisciplinary engagement with performative space – both inside and outside the black box and both inside and outside the white cube' (Brejzek 2011, p.8).

Since the beginning of this research project in October 2013, there have been a number of publications that map and stimulate the discourse in the field, such as the special issue *On Scenography* as part of the *Performance Research* (Routledge 2013) journal edited by Sodja Lotker and Richard Gough. The contributions in this issue are from an eclectic performance practice and scholarly background, not limited to designers. They communicate a variety of approaches to scenography as a system, a way of thinking (i.e. ten Bosch; Nibbelink; Mann & Scholts), as activism (i.e. Sigrid Merx), as ecology (i.e. Gavin Carver), as a dining experience (Joshua Abrams) etc. and contribute in establishing the expansion of scenography as something that 'can be built or it can be found or it can be a combination of the two' (Lotker and Gough 2013).

Furthermore a new journal started being published in 2014 *The Routledge Journal of Theatre and Performance Design* (Routledge) edited by Arnold Aronson and Jane Collins. It publishes both scholarly and practice work, including interviews with contemporary designers, articles on influential figures of the recent past, and contributions on scenography which test the boundaries of its contemporary expanding aesthetics. I will also acknowledge here the recent (July 2017) publication of *Scenography Expanded, an Introduction to Contemporary Performance Design* edited by Joslin McKinney and Scott Palmer. Specifically the scholarship on agency, audiences, materials is useful for seeing the current thinking in the field, and

situating further my work and my contribution to the field with this study; in particular in relation to Trimingham's, Di Benedetto's, Shearing's, Bleeker's, approaches to agency, audiences, materials, distribution. Another publication a monograph by Rachel Hann *Beyond Scenography, Cultures of Performance Design* that is in press (2018) has been helpful for a renewed understanding of contemporary performance as orientation, and for setting some parameters in the terminology i.e. between scenography and scenographic[1].

The richness and high standard of the growing scholarly material published in the last four years is a pointer for acknowledging that scenographers are open to discourse and seek to claim, elevate, and promote the scenographic turn in a systematic and rigorous, creative and dynamic way. However, this turn in scenography calls for more contributions, debates and provocations in order for the different areas to be investigated. As McKinney and Palmer write in their introduction referring to expanded scenography more critical reflection and practice is needed to 'examine not simply what it is, but what it does and how it does it' (McKinney and Palmer 2017, p.19).

Despite therefore the growing interest in the study of scenography the last decade, and its understanding as an all-encompassing and expanding field, scholars and practitioners agree that both on a critical theory and practice level '[d]espite the richness of what there was to be perceived, the language for describing the spatiality, visuality and materiality of performance is still rather poor' (ten Bosch; Nibbelink; Mann & Scholts 2013, p.95-96). Aronson admits that '[l]ive theatre, faced with the unprecedented challenge of digital

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[1] I would like to take the opportunity to thank Rachel Hann for letting me read the first chapters of the book ahead of publication.

technologies that have radically altered all notions of time and space, is still attempting to understand how to function in this new environment' (2013, p.94). While more recently and as a response to the above debate Rachel Hann argues:

> If scenography is to fulfil a holistic potential, then, as with dramaturgy and choreography before it, I argue that we require a renewed critical articulation beyond conventional and material conceptions of design (Hann, in press).

As outlined above, scenography is in itself a contemporary vibrant notion, something we constantly work towards, however difficult to communicate with inherited vocabularies and understandings, hence the need for contributions to a renewed scenographic vocabulary and language. I am arguing in this thesis that 4E cognition can contribute both to the language, vocabulary and to the understanding of the nature of contemporary scenography and scenographic encounters, and that the notion of the scenographic contraption imbricated within cognitive theory can contribute as a critical practice and testing of scenographic methods, processes, and theories. It can contribute alongside the theoretical discussions, debates and critical analysis of past and present to this 'renewed critical articulation' (Hann, in press) of scenography.

At the heart of the 'scenographic turn' one of the prominent questions is how does scenography contribute to a complex live performing system and how does it engage and affect audiences in contemporary performance? This research project aims to engage on a critical practice level with the above question and contribute to the particular scenographic language by thinking-doing-reflecting using cognitive science as an interpretive tool, and by attempting in this way to suggest scenographic making, doing, experiencing,

and discoursing that are beyond representational understanding. This research also recognises the potential of scenography as an apt mediator between performance theory and practice, science, and philosophy.

McKinney and Butterworth (2009) have produced a comprehensive volume on the evolution of scenography through the 20th century, focusing on the pioneers. They assigned a separate section on scenographic reception drawing from contemporary scholarship in the field of scenographic analysis up to 2009 (when their work was published). McKinney (2008; 2012); McKinney and Butterworth (2009); Trimingham (2002; 2013); Di Benedetto (2010); Shearing (2015); Beer (2016) address specifically the importance of the reception of contemporary scenography in their writing and practical explorations. This research project aims to add to that knowledge through the development of practical experiments and by applying frameworks of 4E cognition and social cognition for illuminating further the what and how of scenographic participation, and making processes.

Referring to the recent literature I have outlined the multimodal, multifaceted, and expanding nature of scenography as viewed by contemporary practice and scholarship in the last five years. I will go now on to mapping the other part of the overarching question related to the field of 4E cognition.

1.3 Mapping Post-Cognitivism

> The once homogenous framework of cognitivism is being replaced by a multidimensional analysis of cognition as incorporating our brains, bodies and environments (Menary 2010, p.462).

The first phase of cognitive science, known as cognitivist or classical computationalism, understands human cognition based on mental representations, and asserts that cognition similarly to a computer is based

on inputs, processing functions, and outputs without taking into consideration its embodied, environmental and socially extended nature. The second generation of cognitive science (post cognitivist), develop theories of cognition, perception, and action that avoid mental representations. Both branches (classical computationalism, and 4E cognition) call for an interdisciplinary study of cognitive science inviting the fields of philosophy, linguistics, neuroscience, artificial intelligence (AI), psychology, anthropology, (and in some cases religion, art, and performance) to contribute to the logic and concepts for interpreting the empirical evidence for the understanding of cognition.

There has certainly been a leap in the progress of grouping the various theories branching out from the two paths, the traditional cognitivism and the post-cognitivist one. Mark Bishop maps the current landscape in a comprehensive and concise way:

> The neo-classical paths (e.g. GOFAI[2]); connectionism; dynamical theories of mind; swarm intelligence etc) that are fundamentally (i) dualistic and (ii) essentially formal and representational, and the more radical 'Embodied, Embedded, Ecological, Enactivist' - the so called '4Es'-framework (Bishop 2014, p.12).

Despite the fact that these two different approaches create two 'tidy' groups this does not prohibit the exchange between core concepts of the two areas, as will be outlined at the end of this section. Furthermore, each theory of the 4E cognition group contains 'logically independent' (Ward and Stapleton 2012, p.90) claims on cognition, and the way these claims are modelled and developed is not always a homogenous one. This non-homogeneity and in cases the incompatibility between fields, groups, and claims, indicates that

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[2] GOFAI: good old-fashioned artificial intelligence

another type of organization is in place in order to take the field forward, one that is more complex like a rhizome for example, and it seems inevitable since as Menary writes '(o)ur cognitive lives are rich and varied' and 'simple homogenous explanations do not do justice to the complexity of cognitive phenomena' (2010, p.461). Here is where a commonality can be found with contemporary performance (and scenography for this specific study), in terms of the search for less homogenous critical understandings of its complexity.

According to the 4E (or 4Es) frameworks human cognition is enactive and ecological (Varela, Thompson, and Rosch 1991; Thompson 2007; di Paolo 2005; O'Regan and Noë 2001), embodied (Clark 1997; Gallagher 2005), embedded (Clark 1997; Hurley 1998), and in some cases extended (Clark and Chalmers 1998); it is also understood as affective (Colombetti 2007). I have included here an initial representative literature of these ideas, based on Ward and Stapleton (2012), and will make a reference to further scholarship in relation to my practice in the chapters to come. Below I am making a general introduction to the wider principles of 4E cognition, based mostly on enactivism, and embodied cognition in order to map the territory.

The idea of an 'enactive' cognitive science is initiated by Varela, Thompson and Rosch with their work *The Embodied Mind, Cognitive Science and Human Experience* (1991), who find also other points of convergence for their study such as phenomenology, and Buddhist meditative psychology. Enactive and embodied cognition originate in many ways from Humberto Maturana's pioneering work on 'autopoiesis' (self-production), which is the description of the molecular dynamics, taking place internally in a living system. These processes within the system produce the system's

components (self-produce). Furthermore living systems exist in the physical space, within a world and they are structurally coupled with their environment. Maturana's research as he states in 1968 opened in him 'the possibility of changing the question of perception from, "how do I see what is there" to "what happens that I, as a structure determined system, can say that there is something there?"' (Maturana 2002, p.19). This is important to point out in this thesis, in terms of embodied perception, as Maturana's question rejects inputs and outputs, by accepting that all living systems are structurally determined; therefore what happens 'in them or to them, happens determined in their structure' (Maturana 2002, p.24). If for example an agent acts and indeed changes the structure of the system, they (the agent) are by no means an input because they are not telling something to the living system about itself or about the environment this living system is in. Similarly there are no outputs as the living system in relation to its medium does not tell anything to the medium about the external part of the system, they cannot enter the knowings of the system with computations and representations but instead 'maintain a kind of adaptively potent equilibrium that couples the agent and the world together' (Clark 1999, p.346). The system is therefore autonomous and it can affect, or be affected by another system, or the environment but there is no representation of any sort, no inputs-outputs, there is rather enaction. Likewise the scenographer cannot enter the knowings of the system of the audience, but they can generate an adaptive scenography that couples or uncouples the audience and the work for generating a work of art.

The thesis of autopoiesis was developed further by Maturana together with Francisco Varela, and they conclude that: 'Living systems are cognitive

systems, and living as a process is a process of cognition' (1980, p.13). When articulating their theory of enactivism, in their work *The Embodied Mind, Cognitive Science and Human Experience* (1991)*,* Varela et al. bridge continental thinking with scientific pragmatism, and argue for a world 'enacted by various histories of structural coupling' (1991, p.218). They recognise that in Continental philosophy thinkers such as Martin Heidegger, and Maurice Merleau-Ponty accept knowledge as dependent 'on being in a world that is inseparable from our bodies, our language, and our social history-in short, from our *embodiment*' (ibid. p.149). Varela et al. also point out, agreeing with Mark Johnson, that Anglo-American analytic philosophy resists this notion of cognition as embodied (ibid., p.149). On the other hand, they continue, Continental discussions have not taken into account cognitive science research (with exception, the early work of Merleau-Ponty), and therefore their aim is on one hand to bring this valuable empirical research on human cognition into Continental thinking, and on the other hand using Continental thinking to shake the belief of the part of cognitive scientists who insist on supporting that there is an independent outside world. Since the claims on enactivism in 1991 by Varela et al., frameworks that suggest a reciprocal relationship between brain, body, and world (phenomenology in particular) have been recognised as valuable sources to be taken into account by 4E cognitive science for the interpretation of empirical data. We have 'a picture of how the mind works that fits remarkably well with the descriptions of human existence to be found in phenomenology' (2017) says contemporary cognitive philosopher Julian Kiverstein. I am taking on board the part of the enactivists' proposition for approaching groundlessness, in which 'cognitive science and phenomenology need to be pursued in a

complementary and mutually informing way' (Thompson 2005, p.407), and I will add other frameworks of dynamic systems, Baysian brain (prediction), and Continental thinking (deconstruction).

Thompson gives five core concepts of the enactive approach that concern this project:

i) living beings are autonomous agents, meaning that they make choices in a world which is not pre-specified but it is enacted by the autonomous agents' coupling with the environment

ii) the nervous system is an autonomous system which 'does not process information in the computationalist sense, but creates meaning'

iii) cognition is a form of embodied action

iv) similarly to phenomenology 'a cognitive being's world is not a pre-specified, external realm, represented internally by its brain, but a relational domain enacted or brought forth by that being's autonomous agency and mode of coupling with the environment'

v) experience is central to the understanding of the mind, and needs to be investigated in 'a careful phenomenological manner' (2005, p.407).

One criticism regarding enactivism is for 'failing to acknowledge the important role that the brain plays in cognition' (Dewhurst 2016, p. 24). However, and this is the reason why I am expanding on enactivism throughout the study, it does set the foundations for post-cognitivism, providing thus a framework that can incorporate many new approaches relating to embodied and even social cognition which interest this project.

Sensorimotor contingency theory (SMCT) developed by O'Regan and Noë (2001) is a theory tied to enactivism, since it also conceives 'perception as essentially implicating capacities for skilful (sic) activity' (Ward and Stapleton

2012, p.94). It suggests that perception, and specifically seeing, is fundamentally related to action, therefore cognition is something that a person *does* rather than something that happens to them. SMCT therefore rejects the representational understanding of perception as an input from world to mind, where cognition is participating in the processing of that input so as to render it useful to the subject; they explain it in an enactive way, not with internal representational models but 'by considering the environment as its own best representation' (Maye and Engel 2013, p.424). Recognising an object does not mean that this object is represented inside the head by matching internally stored pictures or memories to that object; it rather means 'to master sets of sensorimotor skills and possible actions that can be chosen to explore or utilize the object' (Engel et al. 2013, p.206). Action-oriented cognition forms the 'pragmatic turn' (Engel 2010) of cognition, and recognises the architecture of cognitive systems 'as being highly dynamic, context-sensitive, and captured best by holistic approaches' (Engel 2010, p.222). What was once a concept-theory, the action-oriented paradigm can now be supported by experimental, practical evidence (Engel et al. 2013) to the extent that researchers reword Descartes' 'I think therefore I am' as 'I move therefore I am' (Garbarini cited in BBC, 2016).

The enactivist theory therefore supports the continuity between life and mind (Menary 2010, p.459) and helps us understand perception and experience without using a representational system, justifying conscious experience as structural coupling, and a co-constitution with the world. For this research enactive, embodied, and ecological frameworks form the central part of my research enquiry, especially ones integrating embodied cognition, phenomenology, ecological psychology (affordances), and dynamical

systems theory. I will be referring to these and providing more information in relation to my practice in later chapters.

A theory I am also drawing from (particularly in my third practice) is the predictive processing (PP) paradigm that accepts a mild computationalism. The brain in this theory is perceived as a probabilistic prediction machine (Friston, 2010; Howhy, 2013; Clark, 2013b, 2016) that is set to minimize the errors between what it expects the world to be like, and what the world is actually like, so there is a constant co-ordination of the inner and outer worlds by real-time adjustments. According to Andy Clark PP constitutes a model of brain function that is conceptually rich, that bridges neuroscience and computational models, and that is especially well suited to the demands of real-world, real-time learning and action (2013).

Finally I will make a short reference to recent scholars who assert that computational cognitive frameworks are not representational (Dewhurst 2016; Villalobos and Dewhust 2017) by proving that 'an analogy can be drawn between computing mechanisms and autopoietic systems, focusing on the status of representations in both kinds of system' (Dewhurst 2016, p. 17). Dewhurst and Villalobos (2017) argue that a beneficial combination between enactivism and computationalism is possible (ibid.). This is particularly useful for my scenographic contraption paradigm because in my three performance experiments I am also turning to computational theories (see p.55-59 in this thesis), which draw from model based representations of consciousness. After enacting these computational input-output architectures imaginatively I came to a similar understanding that computational models entail many characteristics within their structure much the same as self-organising living systems. I will expand on this imaginative

method in the following chapter.

1.4 The Cognitive Turn in Theatre and Performance

The need to address the complexity, multimodality and hybridity of contemporary theatre and performance by applying theories of cognitive processes which are equally hybrid (Blair and Cook 2016, p.9) is a contemporary one and this research is part of the debate and thinking in the field.

I have attended and presented in several symposia and conferences on the intersections between theatre, performance and cognition (see Appendix A) in order to keep up with current views, discussions and debates on the subject. On these occasions I have encountered a core community of researchers, academics and scholars who contribute actively to the field with publications and presentations, but also a growing and eclectic mix of early career performance researchers who find this a fruitful area of investigation – especially the application of the 4E cognition frameworks to performance practice. Furthermore during the time of the four years of my research a steadily growing volume of literature has emerged as part of this interest, and as a result of the international and national (UK) gatherings on the subject.

The importance of the social aspect of having these gatherings and the benefit of the thought exchange that takes place during the communities that are created during these gatherings, is outlined in the preface of one of the most recent publications *Theatre and Cognitive Neuroscience* (2016): 'We are not presenting a simple collection of essays but the result of a series of encounters, collaborations, and mutual influences between research hailing

from different geographical and disciplinary contexts' (Falletti, Sofia, and Jacono 2016, p.xiv).

Empirical understanding of the embodiment of cognition and the exchange between brain, body and world are rooted in the language, the making and the experience of theatre and performance. Artists in the field have been aware of the complex perceptual paths that are involved in communicating their thinking to their audiences. The subtle communication tactics of artists of theatre and performance include their bodies and breath, the materials-props, the environment, also emotions to convey a narrative or to generate an experience for their audiences. In stage design or puppetry for example artists and craftspeople are aware of using materials, such as different types of wood, fabrics of a variety of colours, textures etc. as an extension of their brains, and are aware by trade of the interrelation between brain, body, and world. Artists develop with practice an awareness of the impact that the materials themselves, the crafting of these materials, and their relation to the surrounding environments, have on their audiences' emotions, thinking, and meaning making. This coupling extending between the artist, the audience, the materials, and the environment suggest that embodied understanding and the ecologically extended mind are not new ways of perceiving in the world of theatre and performance art. This understanding is indeed something that I personally bring into this project with my 'Know-How' (Nelson 2013), and I hope that in the future I will be able to contribute also to the cognitive field with this Know-How.

The implications for knowledge of the 4E view of the brain have generated interest among theatre and performance scholars who recognise 'embodied cognition as one aspect of the uniqueness of theatre that must now be

considered alongside cultural and historical determinants' (McConachie and Hart 2006, p.15). McConachie and Hart advocate strongly for the use of cognitive theories in performance, justifying their arguments for doing so on the falsifiability of good science. They argue about the problematic approaches of researching spectatorship in theatre and performance based for example on language theories, which see the spectator 'as a reader' and limit our 'understanding of audience response' (McConachie and Hart 2006, p.5). However their view of the importance of using cognitive theories based on their falsifiability has been critiqued (Shaughnessy 2013; Reason et al. 2013; May 2015). Shaughnessy argues that performance finds an interest in cognitive theories that contribute to the ''felt understanding' through the interplay between visual, auditory and bodily experience' (Shaughnessy 2013, p.13) and not so much in the falsifiability of the science. Reason, Reynolds, Grosbras, and Pollick argue for the need of the inclusion of a-scientific perspectives for a 'truly mixed-methodological ecology' that can 'challenge the absoluteness of the positivism paradigm (2013, p.55). May critiques the 'slightly imperialist' (2015, p.7) suggestion of McConachie and Hart regarding the superiority of falsifiable cognitive approaches compared to other frameworks applied to theatre and performance scholarship. In his work he proposes that philosophical frameworks can and should contribute critically to current cognitive approaches of performance studies.

I am adopting a hybrid approach as I will outline in my methodology section using practice-research, and I understand performance processes as hybrid and therefore find in the action-oriented and ecologically framed cognition paradigms a useful tool. I find that theories of the 'pragmatic turn' (Engels 2010) of neuroscience that embrace action-centred frameworks of

perception can enrich the already empirical knowledge of scenographers. Nevertheless certain philosophical theories should be integrated, or cross checked in the frameworks in order to keep track of the logic behind the claims made by the cognitive theories.

Present-day performance scholars understand performances as not one-way delivery systems (McConachie 2013) and contemporary scenography research is in line with this understanding (McKinney 2008; Di Benedetto 2010; Trimingham 2013, etc.). Di Benedetto is approaching the field from a theoretical perspective and his case studies draw from his personal experience as a spectator of post-dramatic work focusing on the scenographic. By looking through the lens of neurology, cognitive science, and phenomenology Di Benedetto argues that theatrical practice can benefit greatly from an understanding of contemporary neuroscience discoveries e.g. the visual system, and goes on to argue further the role our senses play in our interpretation of the theatrical event. He also points out the power of theatre practice to affect human behaviour and its potential to change our ability to perceive the world in a new way (2010), as mentioned before. Di Benedetto's own language of how the findings of cognitive research have impacted theatre spectatorship, has been influential to this thesis. However, I am exploring much of this understanding through my own practice, using tacit forms of knowledge and focusing on developing and improving methods of generating, experiencing, and understanding participatory scenography.

Germano in *Between Stage, Brain, and Body* (2013) has used cognitive science and Bleeker's relational approach to visuality in the theatre exploring the embodied act of looking in spectatorship. Her insights are very valuable, however she uses a limited spectrum of cognitive theory focusing mostly on

Lakoff and Johnson's conceptual metaphor theory (CMT), and because her research was published in 2013 she misses the debate between humanities and cognition that had started at the time.

Melissa Trimingham's writing (2011; 2013; 2017) and practice-research employs mainly affordances, distributed cognition, and folk psychology (common sense) to explore affect, and the social embeddedness of props, materials, and costume working with autistic children in multisensory participatory environments. Her body of work is of particular interest to this project in terms of how these theories are used for writing about complex and intricate brain-world interactions. The emphasis of the research however is different to this one, as her insights are focused on *Imagining Autism*; an interdisciplinary project developed to explore how performance can facilitate communication, social interaction, and imagination in children with autism.

McConachie (2008; 2013) explores how cognitive theories of perception, (conceptual blending) and the ecologically extended cognition (affordances) can be applied to spectatorship processes. He points out that performances energise people to make hundreds, even thousands, of blends and meanings. Drawing on Fauconnier and Turner's (2002) term 'conceptual blending' he explains how 'conceptual integration' is a key function of attending a theatrical event. McConachie places his focus on the blending that the spectator does when seeing an actor on stage but also on the actor's integration between them and the character. McConachie's work came at an appropriate time in the scholarly understanding of the link between cognitive science and spectatorship. So far though, it focuses on traditional theatre environments and practice and leaves out a big part of contemporary performance practice, which this research is addressing.

There are a number of other scholars who have written on the intersection, and who focus like McConachie mostly on acting, actor training, and the text. 'Conceptual blending' theory is used by Amy Cook (2009) who poses questions about the experience of theatre and audiences' perception also with the theories of embodied and embedded cognition and empathy has developed a methodology to analyse drama and performance (like Wooster Group's *Hamlet*). Cook says that 'an application of blending theory to theatre and performance confronts the complexity of a meaning-making event that includes the bodies of the participants, unlike literature, for example, where the character's body remains constructed out of words' (Cook 2013, p.88-89). I am furthering the above argument by adding to the 'bodies of the participants' the space and the objects, however I am not using conceptual blending. Using cognitive neuroscience and specifically conceptual blending, compression and research on empathy, director and performer Rhonda Blair investigates the actor's developing of a character and also when 'in partner work with another actor' (2009, p.93). Other key contributors in the field of actor processes/training and embodiment are John Lutterbie (2011), Rick Kemp (2012), and Maiya Murphy (2016).

As the editor of *Affective Performance and Cognitive Science: Body, Brain, and Being* (2013), Shaughnessy reviews in her introduction the literature in the field. She insists on the importance of new ways with which bridges can be built to achieve a two-way communication between art and science. She argues, like all the contributors in the book, about 'the importance, relevance, and applications of cognitive science to the equally multifaceted modes of theatre and performance' (2013, p7). Shaughnessy makes a critique on how the complexity of both the fields of cognitive science and

theatre do not allow for straightforward analogies between 'hard' science and 'soft' performance and draws the attention to scholars and practitioners to take extra care to avoid false assumptions and misappropriating (2013, p.11).

Another book contribution in the same series, *Theatre, Performance and Cognition: Languages, Bodies and Ecologies* (2016) edited by Blair and Cook, comes to complement previous literature with a more focused introduction in the field. Language, bodies, and ecologies in theatre and performance are explored through embodied, enactive, embedded, and ecological approaches, rather than linguistic frameworks for example. There is a section in the book dedicated to interviews with performance practitioners outlining their way of using notions such as space and ecology (dreamthinkspeak), training and science (Catherine Fitzmaurice), that signifies an understanding of the importance of practice in the field, and marks an area, the interest in practice-led research, where this research could prove a useful addition to the debate.

Josephine Machon's theory of (syn)aesthetics explores the space-in-between the performance work and the audience's reflection on the work shifting between the sensual and intellectual, the somatic and the semantic (2009, p.4). This work draws on neuroscience research on synaesthesia to describe the experiential nature of certain performance practices, where the senses are combined. It is an influential case for this study in terms of the creation of new vocabularies and terminology to describe certain visceral performance experiences, and it has been very useful in informing my use of the term 'scenographic contraptions' as I am explaining in my methodology section on p.80.

Employing the 4E frameworks as a way of studying scenography adds to the existing semiotic (Birch, in McKinney and Iball 2011), phenomenological, somatosensory and embodied understanding (Trimingham 2001; McKinney, 2008; Di Benedetto 2010; Hannah in McKinney and Iball, 2011), ecological (Trimingham 2011; Shearing 2014; McKinney 2015; Beer 2016) scholarly modes of analysis, which have been employed in scenographic research as non-linear and as post-anthropocentric approaches of investigating scenography. Furthermore it adds to other cognitive approaches i.e. kinaesthetic empathy (McKinney 2012) and cognitive approaches to autism and puppetry using affordances and extended cognition (Trimingham 2011; 2013), which have been employed recently in the field. Alongside other scholars in the field (Di Benedetto 2010) this study suggests that present-day findings in the multimodal cognitive field (especially in the field of 4E cognitive science) are currently appropriate complementary methods for approaching the multimodal and dynamic spatial and somatosensory nature of scenography. My work is contributing to the variety of creative strategies, methodologies, and aesthetics of what scenography can become in the 'scenographic turn'.

4E cognitive frameworks have been recognized as a valid approach for analyzing the nature of theatre and performance by scholars (see Shaughnessy 2013; also McConachie and Hart 2006; McConachie 2008; Paavolainen 2009; Di Benedetto 2010; Bleeker & Germano 2014), and I will add to these approaches. I am also using the predictive processing framework, which has not yet been used for the analysis of scenographic reception and operations through practice-research focusing on hybrid, participatory performance practice.

Therefore consciousness and 'stage', affordances, perception as action and prediction, social and encultured cognition are the wide key areas investigated in this study. These are explored in relation to the experience, and making processes of scenography in contemporary performance practice and the shift from representational ways of staging to more process driven and participatory, corresponding environments.

1.5 Situating the Work Within a Context of Participatory Practice and Scholarship

When talking about hybrid contemporary performance culture, I refer to the area of theatre and performance which is in dialogue with the processes of contemporary performance and live-art, and has its main characteristic the audience's participation in some form. The dramatic shift from a top-down approach to a more participatory and distributed, horizontal way of exchange in contemporary theatre and performance has created questions regarding the nature of the audience's experience and engagement in productions of interactive, 'one-to-one', 'one-on-one', 'immersive' and other forms of participatory theatre and performance such as socially engaged theatre, network art, experience design, etc.

In participatory art Bishop calls for the need to find a more 'nuanced language' for talking about it (2012, p.18), critiquing the form as 'artificial hells', borrowing a term from André Breton. Although my work in the last ten years or so has focused on participatory formats (interactive, immersive, one-on-one) I too share the critical stance of Bishop, and one of the reasons that triggered this project is an attempt to contribute to the nuanced language, the aesthetics, and practice in the field. The varied contemporary

performance landscape of hybrid, participatory performance culture is met with much excitement by the audience in recent years (2004-2018), demonstrated by the growing and eclectic production of such work by companies like Shunt, Blast Theory, Rimini Protokoll, dreamthinkspeak, Punchdrunk, Lundhal and Seitl, etc. I am particularly interested in how, when the excitement of the novelty of an experience fades out, we can still keep a genuine relationship between the space and the audience. I am turning to the findings of post-cognitivist frameworks to help me in designing scenographic making processes for generating relationships between space, the audience, the audience members between them, myself (as the artist–scenographer) and myself and the rest of the artistic team involved.

The way spatial ideas of the brain, mind, neurons, and embodiment have been applied by other researchers and practitioners can be viewed in the following examples:

In scenography Di Benedetto argues in a spirited language, that:

> [U]nderstanding deeper biological and neurological levels of scenographic processes are our pathway to understanding the creation of context and the creation of the visible, spatial and temporal world; if scenography takes up the challenges of neurobiology, the potential for novel multiverses are infinite (Di Benedetto 2013, p.190).

The theatre company Reckless Sleepers have made the link between the black box (theatre space) and the brain: they have built the space of a black box to use both for rehearsals and for the performance of *Schrödinger* (2011). When talking about this scenographic apparatus, Wetherell explains: '*…*its rules produce emotional content without the necessity for *acting* emotional content' (cited in Shaughnessy 2013, p.15). This emotional content, which rises from the rules of the space is in line with how I have

used schematic models of consciousness, as will be outlined in the next chapter. However, I am using architectures that relate to the more distributed understanding of cognition than that of Reckless Sleepers' 'black box', which underpins a more dualistic view of the brain, a black box-mind that is isolated.

Antonin Artaud envisions a holistic approach to theatre by making a case in *The Theatre and its Double* (1958) for an embodied relation between theatre and audience. He talks about rediscovering a 'unique language, half way between gesture and thought' (Artaud 1958, p.89) and he uses an example of the 'nerves' foreseeing. He adds that in the theatre of his time, 'digestive theater', the nerves, that is to say 'a certain physiological sensitivity, are deliberately left aside, abandoned to the individual anarchy of the spectator'. He proposes instead the 'theater of cruelty', which intends to 'reassert all the time-tested magical means of capturing the sensibility' (1958, p.125). Artaud's understanding of this capturing of the sensibility could be related to this project's understanding of embodying cognitive architectures, similarly to Wetherell's comments above.

The above practices and theoretical propositions refer to the exploration of ludic rules, the generation and the emergence of embodied experiences, the engagement with neurobiology and theories 'between gesture and thought' in producing novel perceptual experiences for the audience. My focus remains on non-representational, and embodied, embedded, and enactive modes of exploration, with my practice situated within current trends of participatory performance, live-art and devising performance culture.

In immersive performance scholarship Gareth White explores the aesthetics of audiences' participation, treating audience participation as art (2013,

p.196). He is addressing audiences' experience using embodied and enactive cognition and affordances:

> Accepting an invitation means moving into a horizon of participation where temporality and spatiality are reconfigured as affordances that press upon the participant, initiating and shaping responsive activity. We experience it as an atmosphere, and perceive it according to our mood, as much as we understand it in response (White 2013, p.168).

I am particularly focusing on the use of affordances with ecological and sociocultural cognitive frameworks to investigate in depth the understanding of how spatiality but also social encounters and communication are developed within my proposed scenographies.

Participation as invitation is a focused approach, and it forms a key approach in my practice-research, however with my current thinking and doing I aim to contribute to the 'messier' understanding of participation of the 'palpable move away from understanding participation as an invitation and a response and towards a recognition of participation as an ecology of mutual doings and beings' (Harpin and Nicholson 2017, p. 14). Focusing on participatory scenography I aim to contribute with practice to Harpin and Nicholson's understanding where participation is understood not 'as an action or activity but as an assemblage of peoples, objects and environments' (Harpin and Nicholson 2017, p.12). My understanding of the 'assemblage' however looks more like the 'contraption'. The 'contraption as participation' I am coining here, admits that participation is not a finished product, but a work in progress, a process, a shifting apparatus, a network, a bridge, a rehearsal, a montage, a misappropriation, a monster. The audience are in the process of decoding the complexity, and assume a co-authoring role, or a sensorimotor understanding within the scenography.

As this co-authorship has become the norm in contemporary culture, the audience–participants seek more hands-on involvement within events i.e. attending works-in-progress and having their say, sharing their personal stories etc. On another level the landscape is currently at an infantile experimental stage of how we mediate ourselves through social media platforms given the ease with which an individual for example can manipulate digital data. We are therefore experiencing I argue the time of a larger network-contraption, and a playground in which individuals experiment, with various creative, ethical, moral, and social results or consequences in the current post-truth socio-political landscape.

I am also investigating the 'Janus-faced audience–participant', a term I use to communicate the non-binary active and passive, agreeing again that it makes 'no sense to make sharp distinctions between participation (active, rebellious, critical) and non-participation (passive, receptive, docile)' (Harpin and Nicolson 2017, p.4).

My work is therefore situated in the in-betweens of scenographic and participatory performance practice, and adds with 4E cognition in understanding perception as an interrelational connection between body, brain, and world.

I will refer to a limited number of representative scenographic examples below as a reference to the aesthetics and cultures I am engaging with. These examples relate to the innovative and complex intersections between contemporary art and performance, with the tendency to incorporate material (objects/images/bodies/stories) originating from the audience. This tendency can be traced to the pioneering 'happenings' of John Cage (e.g. *Untitled Event*, 1952) and Allan Kaprow (e.g. *Fluids*, 1967) and this research

project's interest lies on the notion of 'happening' as found in the intersections between media (including the use of social media), space and audience and how these intersections impact on the notion of the 'scenographic contraption'.

In Rimini Protokoll's, *Evros Walk Water* (2015) the audience re-create John Cage's piece *Water Walk* (1959) given instructions by the pre-recorded voices of fifteen refugee teenagers who have now left the refugee camps in Greece, and have found a home in other EU countries. The enactment of the stories by the audience–participants happened with the use of props related to the individual refugees' stories of their journey to Europe, their families, the relationship between them, and the joys and hardships they have been through (see Fig.10).

"This image has been removed by the author of this thesis for copyright reasons"

Figure 10. *Evros Walk Water*. Rimini Protokoll. 2017.image © Daniel Ammann

In fine art a characteristic example is the work of Tino Sehgal and particularly his work at Palais de Tokyo *Carte Blanche to Tino Sehgal* (2016), where he created a piece using his past work, and also by inviting other artists: Daniel Buren, James Coleman, Félix González-Torres, Pierre Huyghe, Isabel Lewis, and Philippe Parreno. These artist share similar methods of working across media, artforms and science in creating non-linear experiences for the audience. For this piece, Sehgal therefore created

a level of complexity that used multiple levels of interaction: his assemblage of some of his own previous works, which generated interactions between the visitors of the exhibition, the space, and the performers he had orchestrated in the space (through the use of speech, dance, song), but also his own social interaction with other artists whom he invited to be part of the work.

In festivals and events there is a growing tendency of using the audience–participants' social media, or own material for creating large-scale shared experiences. For example at the Manchester International Festival (MIF) this year (2017) the work *What is the City but the People?* created by the people of Manchester, based on an idea by Jeremy Deller and directed by Richard Gregory (Quarantine) comprised a raised catwalk on which 150 people from 'doctors, to dog-walkers, protesters, and preachers' paraded their stories.

In popular culture for example Aphex Twin's recent live performance (2017) included the scenographic element of the live mixing of images from the audience to create a commune of identities (Fig. 11 below).

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Figure 11. Aphex Twin, Field Day, London, 3rd June 2017

A recent publication *Perform, Experience, Relive* (2017) published by The Tate Modern is a collection of thoughts including writings from theatre artists and thinkers such as Jen Harvie, Helen Paris, and Tim Etchells and work

that focuses on the important role performance has played in the last decade in almost all artistic forms. A reason behind this expansion of performance is because it makes a good match with participatory formats, and this project is contributing to this shifting field addressing it through the scenographic turn and the cognitive turn.

Chapter 2: Methodology

2.1 Practice-research and the Meeting Point with Other Modes of Analysis in the Field of Scenography

The cognitive field is cross-disciplinary and, as already mentioned, contrasting, considering it brings into dialogue or debate five different disciplines – psychology, neuroscience, artificial intelligence (AI), anthropology and philosophy – and, recently, art, theatre and performance, and religion. Furthermore within the above disciplines, there are scholars following the 'hard' science model – the 'miner' – and others more akin to a 'soft' science model – 'the traveller' (Kvale 2006). The 'miner', for example, will support that material is there to be found and recorded objectively, while the 'traveller' will argue that there is 'not a fixed world but one of meaning created by actors within it' (Dunne et al. 2005, p.15).

When theatre and performance studies engage in an interdisciplinary knowledge discourse with science, like in the case of the cognitive turn in theatre and performance, Blair and Cook stress that there is no need to follow scientific methodologies in performance research and that 'a cognitive approach to performance need not be empirical' (2016, p.2). Their understanding is that research may benefit from 'making connections between empirical work in one discipline and theoretical work in another, or in appropriating the science actually or metaphorically for applications in the studio' (ibid.). However, Blair and Cook draw attention to the differences in the 'processes and perspectives' (2016, p.11) within the cognitive field, for example of cognitive linguists and neuroscientists, and note that using science as an igniting point can be very rich both creatively and intellectually

for artists–scholars but this is 'different than making a claim that what we do has the efficacy or 'truth' of science' (ibid. p.11). They write that performance scholars in the field should be 'mindful of being non-expert in the sciences' (ibid. p.5) and later say that they need to be cautious about their 'applications – even appropriations – of the science and honest about our motives for doing so' (2016, p.10). Their suggestion is to engage or acknowledge the 'competing claims' that arise in the field and keep up to date with the literature through articles in recognised journals (ibid.). Shaughnessy admits: 'As I am not a trained scientist, much of the discussion involves what Tim Etchells refers to in his practice as creative borrowing' (Shaughnessy 2012, p.xvii). Tribble and Sutton add that the aim is 'not to become an expert but to gain a sense of the shape and contours of the target discipline' (2013, p.31).

In his work *Rethinking Practice as Research and the Cognitive Turn*, Shaun May emphasises the importance of being critical of the cognitive turn on both 'empirical grounds and logical grounds' (2015, p. 22). He addresses 'the logic of the cognitive turn' (ibid.), asserting that logic (rehearsed through analytical philosophy) needs to be used when talking about science, in order to avoid fallacies. He argues that scholars in the cognitive turn sometimes cite scientists' or philosophers' conclusions 'without rehearsing the arguments or outlining the empirical evidence that led to the conclusion' (ibid. p.3). He finds this problematic, because sometimes scholars in the cognitive turn in performance may take the assumptions or the work of the philosophers and scientists as a given, without outlining and questioning the foundations that these theories are based upon. This can be problematic because as May points out, the conclusions of a philosopher or a scientist

whom one uses are 'only as valid as the premises they are supported by' (ibid.). May goes on to give examples of three of the fallacies that have been brought about in the field because of the lack of scrutinising the logic of theories, and because, I add, of the exciting possibilities, and novel narratives that neuroscience may offer, which may temporarily make a theatre researcher not see the fallacy. He talks about '[c]onfusing correlation with causation' and brings as a common example cases where neuronal understandings have been applied for marking aesthetic value, whereas there is no sufficient logic for doing so. He goes on to point out that some researchers in the field are 'inadequately distinguishing necessary from sufficient conditions' (ibid. p.22), which may lead to stating the obvious by wrapping it in 'neurological specificity' (ibid. p.25). Finally, he points to the 'homunculus fallacy' which is the assumption that information is stored in different places in one's brain and is being retrieved and processed in one area when needed, like having a little person inside our heads. This theory, when tested on philosophical grounds, is paradoxical, because the need of one homunculus, if followed up logically, creates a *mise en abyme* of homunculus. May's precautions have helped me in being honest, I hope, on my motives of using cognitive frameworks for practice-research. I have therefore tried to engage with the logic of the literature, and trace the premises on which the literature I use lies upon, especially when in foundational writings and notions related to enactive cognition (i.e. groundlessness, autonomy, languaging etc.).

I have used my empirical skills as a performance practitioner to create my research questions and I make sure to keep updated on the literature and debates in the areas of cognition that I am bringing to this work. However,

the literature on its own can be daunting and hard to follow, especially in the beginning of this project when I had very limited knowledge of cognitive science. During this project, reading about a theory without having been through the foundational understanding of this theory by having studied it in the same way, and during the same stretch of time as I have studied and practiced theatre and performance, led my initial enthusiasm to often turn into questioning my suitability in realising this project. Therefore, the literature on the intersections of theatre/performance and cognition I have mentioned above has been very helpful in setting a frame of my role and trusting the process. Following Tribble, Sutton, and May's suggestions above, I have made connections with experts in the cognitive science field of my interest, through conferences and personal communication (see Appendix A), in order to be able to ask direct questions in clarifying and untangling concepts in the area, and to gain a sense of the shape of the discipline and the foundations that the theories are based upon as much as I can.

In November 2015 I was invited to a colloquium–workshop organised at The School of Philosophy, Psychology and Language Sciences, University of Edinburgh, to contribute a presentation of my work on scenographic contraptions and 4E cognition. I had the chance to attend to conversations and debates related to enactive approaches and PP. This was particularly useful because seeing scholars from the cognitive field in action gave me a feel of the type of discussions around and put into context many of the ideas that I was reading about in books and journals. I could then return to the cognitive literature with a refreshed understanding, and to a more focused area of reading. This process needed time and developed (and is still

developing) like a relationship with the field of cognition, including various stages of enthusiasm, doubt, critique, excitement, misunderstandings, revisions, etc. This ongoing dialogue is what has elucidated the insights in this work; because of its empirical base, it does fit the nature of scenography, and I aim to continue this conversation with the cognitive field beyond this present research.

This study therefore tries to have a constant overview of the two fields of cognitive theory and performance research (scenography) and to find a balance so as not to misappropriate and to know what and how these theories are contributing to scenographic knowledge. Following May's example, when using a cognitive theory for my analysis –in the specific study enactive cognition–, I make sure to outline the foundations on which the enactivists' claims are made. The premises on which the enactive arguments and conclusions are made are equally useful for the conclusions I come to and to the context of this study. The project's intention to use science in order to analyse performance puts me in the position of 'mediator of languages' (Blaikie 2000, p.52) between the cognitive field and performance.

The overarching strategy I am following is practice as research (PaR), or as recently referred to practice-research. Rachel Hann (2015) has introduced the term practice-research to denote the moving away from the micro-politics of practice as/though/based/led and to instead focus on the wider issues of knowledge generated through practice. Therefore, with performance practice I bring insights to this research inquiry, and through practice this study aims to add to knowledge in the field. In his *Manifesto for Performative Research* Haseman points out the problems arising from the failure of established

quantitative and qualitative paradigms to 'meet the needs of an increasing number of practice-led researchers' (2006, p.98). Due to this lack or insufficiency of an established methodology in the field, practitioner–researchers draw from various existing methodologies and devise their own. Therefore, practice-research is 'a diverse range of cross-disciplinary approaches that position arts making as a methodological research practice' (Reason 2012, p.195). This kind of research generates particular types of knowledge in between the making and the reflection on the making of the work. As Smith and Dean put it: 'Coming to understand the interconnections among visual forms, patterns of inquiry and different perspectives offers the possibility of making intuitive and intellectual leaps towards the creation of new knowledge' (2009, p.43).

As a result this research project does not follow one specific practice-research methodological route but borrows from different models, generates its own methodological tools, and acknowledges the overlapping areas on the way.

As a base I have used Nelson's epistemological model of PaR (Fig. 12), where the 'arts praxis', meaning the 'integration of theory into (professional) practice' (Nelson 2013, p.80), is found in the dynamic centre of the reciprocal process between the different types of knowledge: the 'Know-How', the 'Know-That', and the 'Know-What'.
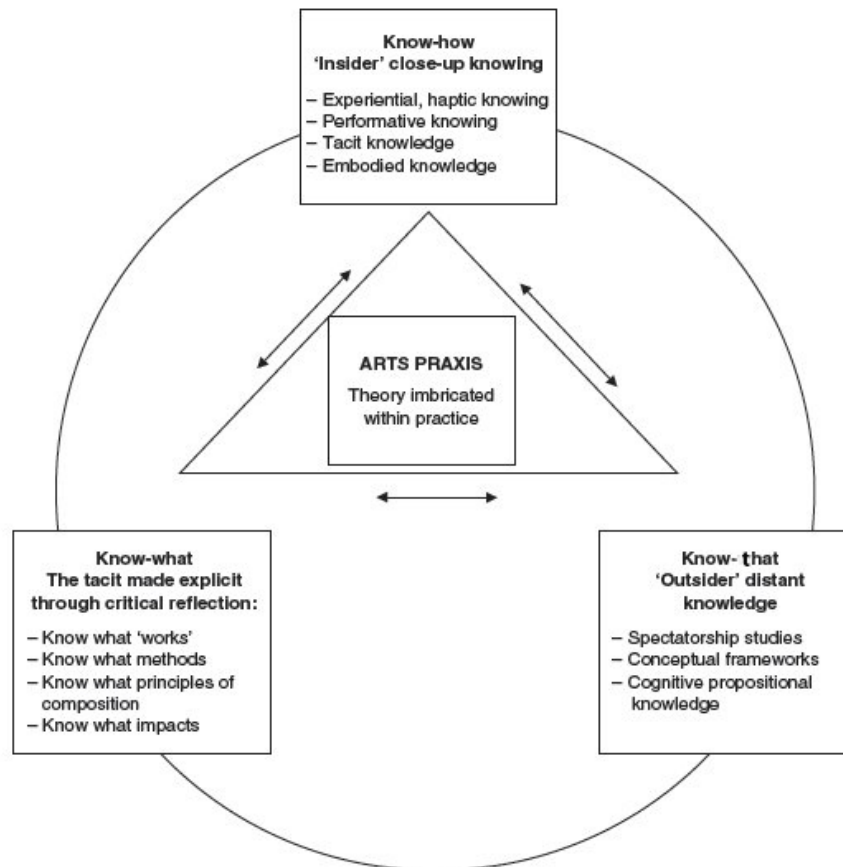
Figure 2.2 | Modes of knowing: multi-mode epistemological model for PaR

Figure 12. PaR model as suggested by Nelson (2013, p.37)

As outlined in the introduction I am drawing from my professional experience in performance design ('Know-How') ranging from design for theatre, performance and short film, to events and site-specific design, and my own performance practice through my company the aswespeakproject. This experience has contributed significantly to this study as it enables me to devise tacit methodological tools for investigating my research topic. For example my 'scenographic contraption' method (which has been introduced briefly earlier and will be developed throughout this thesis) is brought to the centre of my 'arts praxis' and works as a critical practice tool for generating different forms of participation between the audience and the performance

environment; these ways of participation form the base of the scenographic dramaturgy of the performance and produce insights regarding the audiences' experience. Scenography is considered a system, where I set the conditions for events–experiments, aiming to devise new outcomes and concepts suitable for thinking about scenography in relation to post-representational, contemporary performance culture and participation. My role as a researcher within my practice experiments is that of an 'empathetic observer' and a 'dialogic facilitator' (Blaikie 2000, p.52), a composer who is relying on the participators' involvement for the research to bear fruit.

The 'Know-That' mode consists of my scholarly readings on my area of interest; on the intersection between performance and cognitive science; on the role of the audience in these practices; and on the overview of the socio-political context of the time of the study. In the 'Know-That' I am also including my attendance and presentations at targeted conferences and symposia (as mentioned earlier). These have helped me keep up to date with current debates and knowledge on the intersections between cognitive science, humanities, and art and to discover and learn more about subjects in the field, such as computational creativity (these areas will not be explored in this research; however they inform my understanding of the contours and extensions of the cognitive science field). With my Know-That I am also tackling one of the core propositions of the *Cognitive Futures in the Arts and Humanities* network, which aims to 'evolve new knowledge and practices for the analysis of culture and cultural objects, through engagement with the cognitive sciences' (Stony Brook University 2016). In this research I analyse audiences' interaction with the materials, space and co-audience members

using action-oriented, agent-environment coupling, social cognition, and embodied predictive processing cognitive theories (4Es).

Finally, the 'Know-What' is where I render the 'tacit' 'explicit' (Nelson 2013, p.43). This happens through observation and critical reflection on the process, my strategies and methods and the project itself (at each stage of the reflection process). In order to facilitate and systematise the critical reflection, I have documented each performance experiment. For this I am drawing on McKinney's (2008) methods of gathering and analysing audiences' responses, using post-show discussions. I agree with McKinney's view that no single method of gathering responses is 'comprehensive' (McKinney 2008, p.32) because the multimodal, ephemeral, simultaneous, and experiential nature of this kind of research can be challenging to capture. Likewise I have put several methods in place for gathering material in each performance–experiment. These include questionnaires given out to the audience–participants, the recording of the performances with different media (photography, video recordings, sound recording), and situating myself strategically during the work for observing or facilitating. In my last piece (Work Space III) I also devised a way to receive information from the participants during their experience in the space. This happened with the use of Skype, where the audience–participants talked with a number of people known to me (my friends and family members), who had a scripted role in asking them what the performance was about. The responses of the audience–participants were recorded and formed part of my data. A further outline of the methods used and a critique of my approach will be included in each practice analysis, so I will not expand on this further here.

I will note, however, that the majority of the audience-participants were 'savvy' audience members who were either affiliated with the University of Leeds or had an art background/knowledge. Furthermore, the material used in my analysis of the practice focuses mostly on content from post-show interviews I conducted with invited individuals from this specific pool of people. The decision of using 'savvy participants' as part of my research design follows the qualitative nature of the work, as, due to their prior knowledge and/or experience, I was able to draw from their own knowledgeable sense of the work. I made sure to include in my pool of participants individuals coming from both performance and fine art because of my interest in the intersections of these two fields.

For referring to my audiences I have opted for the term 'audience-participants'. Machon attributes the use of this name to Adrian Howell (in Machon 2016, p.38), and whilst my work includes intimate moments and care for the audience, it is not in the same way as in Howell's work. I am taking up this name for my audience in order to accentuate their dual, non-binary role of being both attendants and makers of the work. For me the audience in my work are more than 'visitors', the term used by Lundahl and Seitl (in Machon 2016, p.38), or 'guest performers' according to Rotozaza's way of referring to them (ibid.). I could identify with Coney's 'playing audience' (ibid.) but the work I make focuses particularly on the social participatory aspect and therefore I chose the word 'audience-participants'.

Although I am bringing into this research project my professional design practice experience, the format of this research allows me to employ an experiment-approach to the work within the 'safe' space of academia. This does not mean that the performance experiments I conduct are scientific

experiments and need empirical verification. The reason they are referred to as 'performance experiments' is similar to Hannah's methodological approach where the outcomes cannot be predicted and 'failure is productive' and where, from time to time, moments of 'great beauty, insight and communality' emerge from the confusion (Hannah 2007, p.143 cited in McKinney and Iball 2013, p.120). Adding to the above, I would therefore say that the three pieces of practice I am using in this study are artistic products; however, they are specifically targeted for answering my research, and if I were to make work as a commissioned artist, for example, I would have taken a different approach in the making, marketing, and presentation of the work.

As outlined, therefore, my investigation into the complex cognitive systems and theories in relation to the equally dynamic nature of scenography calls for my borrowing of different methodologies and the use of several methodological tools. I am combining Nelson's model with the 'hermeneutic interpretative' spiral model, which is based on a process of renewed understanding. This model was originally introduced by Kurt Lewin in 1948. Kurt Lewin introduced the term 'action research' (AR) as an 'iterative process, coupling a body of research with its outcome through a spiralling cycle of planning, action, and fact finding' (Yasuda 2009, p.125). Like Trimingham (2002), I engage with the model's cycle of discovery, planning, testing, evaluating and re-planning (I am doing this in three cycles) as a practitioner within the model rather than a detached observer (Trimingham, 2002, p.59). This hermeneutic spiral of renewed understanding is also adopted in practice-research by McKinney (2008), Shearing (2015), and

Beer (2016), who have also used an iterative approach of doing-thinking to generate scenographic knowledge.

I will also refer to 'enactivism as methodology' here briefly in making a particular point about acknowledging the social context of the research. Enactivism has been used in psychology of mathematics education by 'the Enactive Research Group' (Reid 1996), which understands enactivism as 'both the theoretical framework and the methodology for our research' (1996, p.1). I situate its usefulness for practice-research, in recognising that the results produced from the research are my own constructions, and that I am further acknowledging the social context within which these results were created. In many ways enactivism shares roots with hermeneutics; before 1986 when he started calling this understanding 'enactive', Varela was using the term 'the hermeneutic approach' (Thompson 2005, p.15).

My interest lies in my subject's (scenography research) interest in the enactive ideas of the exchange between mind and world, and particularly in scenography the mutual unfolding and enfolding of the world (scenography) and agent (audience–participant), but also of the enfolding between the devised world (scenography) and agent (the researcher–deviser). In this way I, as an enactivist researcher during my practice-research projects, am also learning about my work, entering a reciprocal dialogue with cognitive science, and with my audience, finding new ways of making sense of the research material and questioning the outcomes. I analyse the audiences' interaction with the materials, space and co-audiences using action-oriented and agent-environment coupling cognitive theories (4Es), of which I am not an expert, but about which I have learned during the research process, as well as learning about the practice itself. In this way I am developing a

perpetual pursuit of knowledge related to the 'scene' (the 'stage' and the 'staging' of), and drawing from philosophy and science in order to find answers to my questions regarding performance environments, to generate more questions, and devise iterations between the practical experiments. It is a process of both finding out and learning, but also of learning how to learn, creating new researcher roles for myself by going through this iterative process and by reflecting on the process. I have therefore named each node of my learning-doing-thinking iteration as follows: the Ignorant Scenographer, the Janus-faced Scenographer, and the Predictive Scenographer (Fig. 13 below), and I outline these roles in the following section.

This iterative process poses the problem of when the research ends, and when does a PhD end? A comforting answer to this question came for me from a workshop on practice-research I attended in June 2017, which was led by Roberta Mock, who said that 'PhDs are never finished. They are stopped at the least damaging stage' (2017).
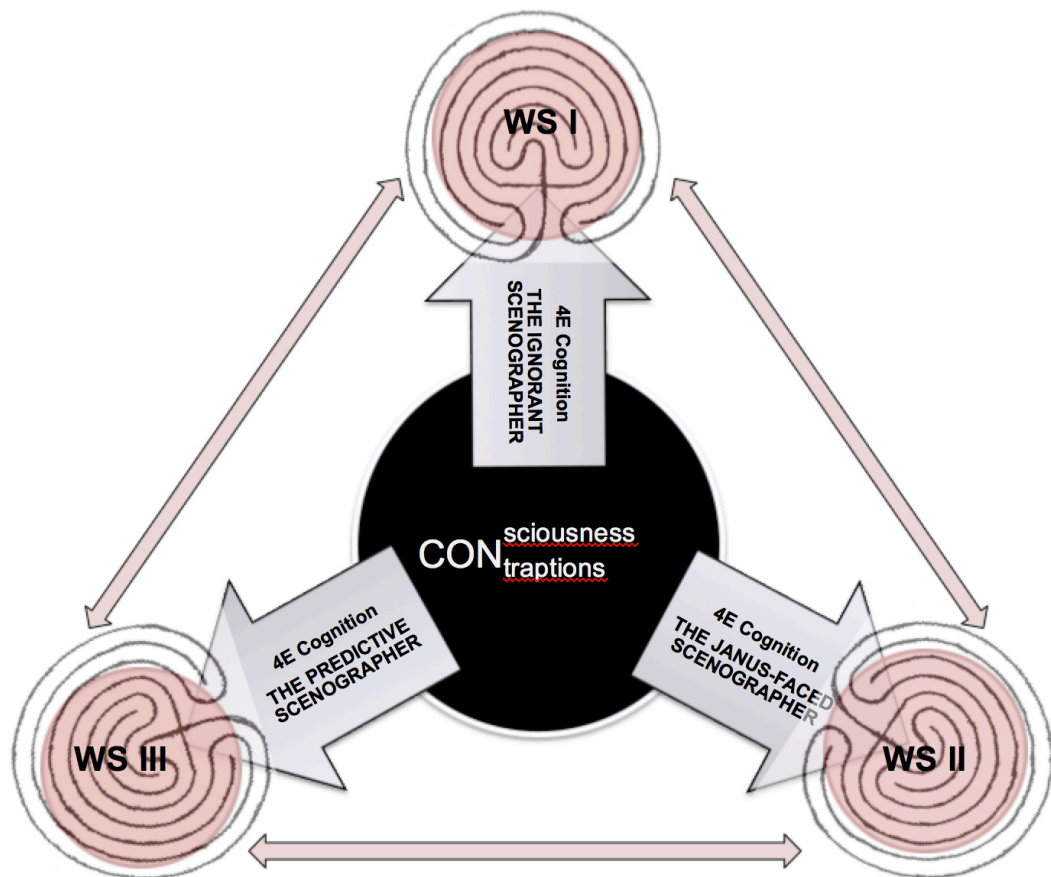
Figure 13. My practice-research iterations

The above model suggests the three different performance experiments (*WS I*, *WS II*, and *WS III*) as labyrinths. This labyrinth centre of each 'cognitive scenography' (a term I will elaborate on later in this thesis) is not an end but sprouts other labyrinths available to other researchers or practitioners who would like to navigate these. If we take that practice-research develops 'in a way that is not rule-bound activity, but a theoretical process continually exploring and engaging' (Malague 2009, p.205), then the practice generated for this thesis will continue to generate insights, debates, and methods beyond the end of this project.

I have developed pieces of practice, which follow a trajectory (spiral) line of inquiry. My enactive ecology and line of enquiry focus on the non-binary understanding between material (i.e. objects, materials, bodies) and immaterial (i.e. space, audience's experience, feelings, interaction, audience relations) qualities of scenography, using frameworks from 4E cognition and predictive processing related to the social. The practice experiments *Work Space I*, *Work Space II*, and *Work Space III* are dynamic scenographic environments, which generate original insights in answering my research questions, or expand insights generated by other researchers in scenography as mentioned earlier (Trimingham, McKinney, Di Benedetto, Hannah, Lotker, Irwin, Hann, Shearing, etc.).

In terms of researching audiences, entering someone's cognitive state for the sake of analysis is an impossible task. However, the study of what it is to be human can be a good entry point not into someone's state of cognising, but into the 'how' of the workings of cognition/cognising. I mention this so as to avoid any universalisms. In considering the importance of past experience in cognition, this type of practice-research may have to start asking what is also the Know-How of the audience–participants. As this is also an impossible task due to the difference in the Know-How of each audience, what is used as a methodological tool in this research as the Know-How of the audience–participants is an enactive view of 'common sense':

> Indeed, if we wish to recover common sense, then we must invert the representationist attitude by treating context-dependent know-how not as a residual artifact that can be progressively eliminated by the discovery of more sophisticated rules but as, in fact, the very essence of creative cognition (Varela et al. 1991, p.148)

How this is approached in this research is with the use in the studio of the metaphorical appropriation of cognitive theories related to consciousness and the generation of 'scenographic contraptions', which embody, as will be explained later in this work, consciousness, and creative cognition.

2.2 Methodological Tools:

2.2.1 Scenography in the flesh[3]: a poetic approach of fleshing out scientific metaphors for generating critical embodied scenographic practice

> Understanding consciousness is a real key, I think, both to understanding the universe and to understanding ourselves. It may just take the right crazy idea (Chalmers 2014, 18:29).

One of my entry points for this practice-research, as mentioned earlier, is the observation of the analogies between the 'making' of our worldviews and the 'making' of the stage. The worldview I am borrowing from imaginatively for entering this making investigation is consciousness as a process 'explained' (Dennett 1991) in recent theories arising 'from certain arrangements in the material order of the brain' (Edelman and Tononi 2000, p.219). Below I will further outline the rationale of this line of thought. My interest lies in the way science uses metaphors as 'tools of thought' (Dennett 1991, p.455) and as a way to 'organize existing evidence' (Baars 1998, p.59). It makes a hands-on link through practice with how scenography may use metaphors as tools of thinking-doing and as a way to organise spatially its communication with the audience.

Starting from Lakoff and Johnson's Conceptual Metaphor Theory (CMT) in combination with the work of Raymond Gibbs outlined below I will explain

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[3] Following the title *Philosophy in the Flesh* (Lakoff and Johnson 1999).

my use of scientific metaphors as part of my methodology for creating participatory performance environments. Lakoff and Johnson's theories have been challenged by scholars in the cognitive field who argue that CMT 'has a rather limited view of the body' (Tribble and Sutton 2013, p.31), because it is weighted towards the linguistic tradition.

Lakoff and Johnson argue that '[a]bstract concepts are largely metaphorical' (1999, p.3) and because they are mostly metaphorical this means that 'answers to philosophical questions have always been, and always will be, mostly metaphorical' (ibid. p.7). In relation to the above, one can say that metaphors can be seen as a rhetorical tool; for example, when wanting to make a hypothetical argument we use the metaphor 'as if'. Metaphor is further connected with the theatre's 'as if', not so much as a rhetorical tool, but as a creative tool, one that theatre artists use to engage and transport their audiences both mentally but also in a sensorimotor way. I will use Lakoff and Johnson's (1999) understanding together with Gibb's (2006) experiments on how humans embody metaphors in order to corroborate on this sensorimotor and felt understanding of metaphors. Before doing this I will outline the metaphors I am fleshing out in my *Work Spaces*.

During his talk *The hard problem of consciousness* at TED2014, cognitive philosopher David Chalmers refers to consciousness as a fundamental (similar to time, space, etc.) and calls for 'it' to be approached as a scientific phenomenon where we can find the fundamental laws that govern it (2014). A number of neuroscientists and philosophers of cognition based on imaging studies and other cognitive empirical evidence have outlined their abstract understanding of consciousness using metaphors to explain their theories. The metaphors I am fleshing out in my practice-research are related to

current connectionist theories which try to explain consciousness by asserting that it has an integrative function, what Varela and colleagues call the 'brainweb' (Varela et al. 2001). They are as follows:

A. Global workspace theory

The global workspace theory (GWT) (Baars 1988) is a cognitive architecture using the metaphor of a particular view of a theatre. In this theatre of consciousness, there is an actor on a central stage, while the backstage crew of specialists and the audience who are in the dark have access to what is happening on the central stage and are allowed to enter the 'central spotlight' space of the actor and add or contribute to what the main actor is saying or doing. In this way an ongoing stream of consciousness is created.

B. Multiple drafts theory

Daniel Dennett 'explains' consciousness (1991) using two metaphors. The first is the 'multiple drafts model', which explains consciousness as multiple drafts of a narrative 'at various stages of editing in various places in the brain' (Dennett 1991, p.113). This theory rejects the view that there is 'one narrative', one place where it all comes together. He then uses an additional metaphor of 'fame in the brain' (1996), suggesting that consciousness can be better explained by the notion of fame rather than a draft, which suggests a 'thing'. Fame is ephemeral, and it is not a thing but a condition, which prioritises exposure depending on the importance of the reason behind fame. Dennett goes even further with his 'fame in the brain' example by using yet another metaphor: that of clout (2001, p.224).

C. The dynamic core and integration of information (Φ)

A dynamic core example of consciousness is also described as a process rather than a thing. A 'dynamic core' refers to a 'spatially distributed' and

'changing in composition' process, which is not localised in one place (Edelman and Tononi 2000, p.144). Edelman and Tononi take a different stance to Baars' example of a small stage with a large audience of specialists and suggest the metaphor of 'a riotous parliament trying to make decisions' (2000, p. 245).

Another current view largely initiated by neuroscientist/psychiatrist Tononi (2012) is that 'wherever there's information processing, there's consciousness' (Tononi quoted in Chalmers 2014, 13:08). This idea relates to panpsychism and understands all systems that process information (animate or inanimate) to have a certain amount of consciousness.

D. The free-energy principle and predictive processing

These are two frameworks used together. The first is a theory that helps us understand the self-organisation of the living. It accepts that 'the statistical model entailed by each agent includes a model of itself as part of that environment' (Friston 2011) and helps in the understanding of the circular causality of an embodied scenographic system (exemplified in *Work Space III* in particular).

Predictive processing (Clark 2013b) draws from the computational idea that perception is prediction. What is particularly useful for my contraption generation from this theory is the idea-metaphor of 'prediction error', which drives the contraption system forward.

How might the metaphors of science be employed in creating dynamic, participatory scenographies? And why?

In order to answer my research question the above outlined metaphor-theories are for me a starting point as I find in these concepts the metaphors that provide a playful range of stage material. As seen earlier, Thompson

suggests that 'the nervous system is an autonomous system' and that it 'does not process information in the computational sense, but creates meaning' (Thompson 2005, p.407) in conversation with the environment. Performance scholar Isis Germano, based on Lakoff and Johnson's theories of embodiment, refers to ' "meaning" as something that has dimension that is physical, sensual and aesthetic' (2013, p.41). Cognitive psychologist Raymond Gibbs, based on a series of experiments led by him and his colleagues, adds to Lakoff and Johnson's ideas that the imaginative way we understand metaphors is contained by our felt experience so we 'recreate what it must be like to engage in similar actions' (Gibbs 2006, p.438). This sensorimotor and felt understanding of 'imagining of metaphorical actions' applies to all actions in metaphors, even physically impossible ones (ibid. p. 444). This is because metaphors have a 'feel' to them due to people's tacit understanding 'of their full-bodied meaning' (ibid. p.448).

Therefore with this methodological tool I am entering an imaginative dialogue with the scientists-inventors who came up with these metaphors, or as Gibbs would say my 'metaphor understanding' allows me 'to imaginatively project' myself 'into other people's minds and worlds' (Gibbs 2006, p.455; Lakoff and Johnson 1980) – in this specific case, the minds and worlds of Baars, Dennett, Edelman, Tononi, Friston, and Clark (and in other cases the metaphorical, abstract worlds of playwrights, writers, artists, philosophers, AI systems, etc.).

I am situating this dialogue between scientific metaphorical language, performance space, and myself (using my Know-How); I am therefore embodying these world-metaphors, or rather en-spacing them, in an imaginative, poetical way, in order to create the basis for meaning. My

collaborators, and later the audience who come to see the work, will in turn engage with understanding the consciousness, 'brainweb', and other metaphors I offer them, and imaginatively project themselves into my mind and world, bringing forth their own world and meaning. This understanding, if we take what Gibbs says about metaphors, is not only intellectual but also sensorimotor.

From the above I am making clear that my intentions are not to enter the debate of how consciousness is explained, and I agree with Fodor who says in regards to 'the ultimate metaphysical mysteries; don't bet on anybody ever solving it' (Fodor 1998, p. 83). My aim is to rather 'engage with the minds' of some prominent figures of this contemporary science debate and generate an embodied (sensorimotor), spatial, poetic dialogue with their argument-metaphors.

Likewise for my investigation, another researcher in the field has used cognitive neuroscience models of consciousness as a starting point for investigating performance[4]. Blair refers to connectionist theories such as Edelman and Tononi's theory of the dynamic core (2000) and goes on to say that what these theories have in common is that they define some kind of imagination (Blair 2008, p.19) and that there is production of meaning from 'the spatial arrangement of the connectionist architecture and the temporal vicissitudes of the activation rules' (ibid. p.20). Blair writes that although they seemed like a good entry point, these theories 'failed to account sufficiently

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[4] This is something I came across after having made the connection myself, after submitting my PhD proposal, and I find it enhances the strength of this idea and the common and synchronized approach to performance research.

for the complexity of human response and of our biological processes' (ibid. p.19).

However, from a scenographer's point of view and as a performance-making strategy of meaning-making, and in orchestrating audiences, these architectures have offered me a valuable basis to work from in devising and orchestrating dynamic scenographic spaces, where power is distributed between this connectionist architecture, and where the artistic result does not 'make pronouncements' (Eco 1989, p.142).

On the other hand, I agree with Blair that these architectures are not sufficient for a deeper understanding when researching the complexity of the relations between performance and audience, as these theories of consciousness and perception provide only the shell, the form, and therefore other embodied and ecological theories are of help. However, the spatial architectures that these connectionist theories provide, when en-spaced, produce environments, where the artist does not pronounce a central 'stage' or point, and where there is not a stable outside world, but a negotiated world between the parts of the environment, the bodies of the audience, and the generation of various emotions and feelings.

What I am suggesting is a 'scenography in the flesh': similarly to Lakoff and Johnson's understanding of the importance of metaphor in language and how embodied these metaphors are, I am transferring on a one-to-one scale these cognitive dynamic architectures that indicate a constant process of becoming. As these ideas (the connectionist metaphors of consciousness) are intimately tied to current thinkers who have an impact on the current understanding of how consciousness arises or 'how matter becomes

imagination' (Edelman and Tononi 2000), they entail some of the most formative ideas of our current worldviews.

These ideas are also structural. What I am doing as a scenographer therefore is entering into a 'hands-on' aesthetic, poetic, embodied, and ecological dialogue with this scientific thinking, which is reflected in current proposed models of consciousness and perception. These models are not necessarily representational to the extent of accepting the homunculus fallacy, but are schematic and structural in a sense that they 'can be either mathematical/logical or verbal/conceptual' (Seth et al. 2005). My 'scenography in the flesh' paradigm fleshes out these metaphors in space as a creative tool for telling stories about the world/the self, and collective meaning-making. Edelman and Tononi, for example, provide their view of how matter becomes imagination using their theory of the dynamic core (see p.59); I, in turn, interpret this dynamical core and test it through an ecological organisational pattern. This organisational pattern creates room for the audience to use their bodies, their common sense, their emotions, and their feelings to navigate the scenographic environment. These theories help me engage with abstract thought and metaphorical understanding such as the 'invisible but decisive' nature (Lotker 2015, p.13) of scenography or the 'nuanced language' (Bishop 2012) of contemporary participatory art in trying to explore them through embodied practice. How this is done will be understood, I hope, while reading this thesis, and after watching the documentation.

2.2.2 The ignorant, the Janus-faced and the predictive scenographer

A. The ignorant scenographer

This methodological tool was developed during *WS I*, and was later used in the other *Work Spaces*.

Jacques Rancière writes about the story of how Joseph Jacotot, a French schoolteacher, tried teaching French to Flemish students without knowing any Flemish himself by using a book on the well-known story of the adventures of Telemachus. The students had both versions of the same text in Flemish (their mother tongue) and in French (the language they wanted to learn) and through comparison and repetition of the two scripts they managed to succeed in their language learning and find common ground with their tutor. After this experience Jacotot had the insight that '(b)y leaving his intelligence out of the picture, he had allowed the students' intelligence to grapple with that of the book' (Rancière 1991, p.13).

In the *Work Spaces* I assumed the position of the 'ignorant scenographer' and have devised a strategy that is the reverse of Jacotot's because the common ground I am establishing with the audience–participants is 'groundless'. It is not based on a common story or script, like the one of the adventures of Telemachus in Rancière's example of Jacotot, but on the tacit dynamics unfolding between the audience–participants' vocal and making skills, and their haptic understanding of the structural properties of the material-immaterial environment and what this affords. My role is more of that of the (willingly) ignorant scenographer, because I know the rules (the design). However, I don't know the story; this will come from the audience–

participants.

Gareth White argues that the example of the pedagogue, which is used by Rancière (White 2013, p.22) in comparison to contemporary artists is weak because, as he understands, contemporary artists are not interested in communicating a specific manifesto or thesis to their audiences as Rancière suggests. I agree with White's argument and, as I have explained above, I have replaced the 'manifesto' to which White is referring with 'groundlessness'. I find that the 'ignorant schoolmaster's' (Rancière 1991) position fits with what I am doing as a practitioner, not because I want to teach the audience a specific subject, but because the example of Jacotot's language is a very apt one to describe what I am doing, following up from my analysis of the poetic fleshing out of metaphorical language as outlined in the 'scenography in the flesh'.

What Rancière's example brings forth, which is in line with my enactive understanding of a groundless scenography is the view that common sense is employed when one needs to understand the world.

> Common sense is none other than our bodily and social history, then the inevitable conclusion is that knower and known, mind and world, stand in relation to each other through mutual specification or dependent coorigination (Varela et al. 1991, p.150).

Therefore in the *Work Spaces* this idea of grappling is the use of common sense to establish common ground, and like the enactivist understanding, the meaning is co-discovered between the 'scenographer' and the 'audience–participants'.

Finally, I would like to add that in the case of an artist–creator, the assumption of ignorance is not only a pretence, but a reality, as art critic Harold Rosenberg observes: '[n]o matter how cultivated he is, every creator

is in some degree a naïf, a primitive, and relies on his particular gift of ignorance' (cited in Schwabsky 2016, location 5422). With this project, I critically investigate my research questions and generate knowledge, but at the same time the creator's tool of ignorance is valid for generating the practice itself.

B. The Janus-faced scenographer

Referring to computational and connectionist representational models, Chalmers has addressed the 'easy' problem and the 'hard' problem of consciousness: examples that form part of the easy problem are related to the functional aspects of consciousness, such as 'the focus of attention', 'the difference between wakefulness and sleep', 'the ability to discriminate, categorize, and react to environmental stimuli', etc. (Chalmers 2010, p.4). Chalmers calls these 'easy' because they are functional and as such they are easier to explain through empirical research and in time: one can apply neural examples or computational ones for their analysis. Such examples are the architectural models of Baars or Edelman and Tononi, which I am using imaginatively in my installation-contraptions; they attempt to tackle the 'easy' phenomena of consciousness, such as the 'integration of information by a cognitive system', for example. Conscious *experience,* however, as Chalmers puts it, is hard to explain because 'it goes *beyond* problems about the performance of functions' (2010, p.8). Experience does not come down only to the processing of information but also the combination of this 'processing' with a subjective aspect.

Assuming Chalmer's argument and applying it imaginatively to performance, I am arguing that there is the 'easy problem' of scenography, which is related to material function – the structure, the materials, the shapes, the

set, the projections, the costume, the positioning of the audience, etc. – and a 'hard problem' – that of the experience of scenography and the processes and concepts that underpin it. With my performance experiments though, in a similar way to a number of scholars in the field (McAuley 1999; Oddey and White 2006), I accept that these two 'problems' are inseparable and non-binary (let alone 'easy' or 'hard'), meaning that they cannot be explored separately but only in a reciprocal relation to one another and to their relation within the social.

The way this Janus-faced analogy is used here is not intended to divide the scenographic function and reception, supporting thus the Cartesian divide between the immaterial (mental) and material (physical) or the active and passive. It is rather used for expressing the simultaneous operations and the structural correspondence between the material and immaterial properties of scenography within a performance system and to point out to 'the meaning that is made between these dualisms' (Shaughnessy 2013, p.4; p.18) by the audience–participants. My approach is not thinking in threes but I assume a multiple-meanings approach. For example, the meaning(s) that could be made between the material and immaterial are multiple, or simultaneous depending on the occasion: action, invention, encounter, perception, performance-rehearsal, etc. In investigating this coupling between the agent (audience and artists) and the world (performance environment) is where theories of the 4Es that understand the continuation between mind and life are helpful.

Therefore, I argue that the analogy of the Janus-faced quality (behaviour-experience) used by the enactivists is also appropriate for describing the

nature of scenography, and that this view can contribute significantly to the vocabulary of what a scenographer does and how they do it:

> Cognitive science is Janus-faced, looking down both roads of cognition at once: 'one of its faces is turned toward nature and sees cognitive processes as behaviour. The other is turned toward the human world (or what phenomenologists call the "life-world") and sees cognition as experience (Varela et al. 1991, p.13).

Scenography is a Janus-faced art looking down both roads at once: both 'the real and not real' (McAuley 1999); the material world that understands scenographic processes as structure and form (the set, the props, the materials, the projections, the positioning of the audience, etc.), and the immaterial world that is turned towards the feeling of the scenographic world and sees scenographic processes as experience, a way of thinking and as a spiritual experience. White acknowledges that 'theatregoing is such a social process, where audience *behaviour* is guided as well as audience perception' (2013, p.57). These two, however, cannot be studied individually but in relation to each other, and this is something I have explored in my *Work Spaces*.

This research project design is also Janus-faced looking down both roads of cognition and scenography as:

1.   structure/metaphor/form/computation/neuronal   networks   (the consciousness metaphors I use as blueprints imaginatively to scaffold the participatory performance experiments *WS I*, *WS II*, and *WS III*); and

2. embodied, enactive, embedded, ecological enactment and the world (the analysis of the audiences' experience and engagement with the work). It is situated within the 'cognitive turn' and the 'scenographic turn' exploring post-representational   ways   of   making   and   audiencing   scenography   in

participatory performance.

Furthermore, my position between the two thinking cultures, Continental and Anglo-American (being Greek, and having lived and studied in that particular culture, and then studying and living in the UK), makes me what I call the 'Janus-faced researcher', who is trying to think in both directions simultaneously, and 4E cognition – by bridging these two thinking cultures – is suited to both my ontological and epistemological understanding.

C. The predictive scenographer

With this methodological tool I argue that a scenographer in participatory and hybrid performance is not one who 'writes the stage' in advance, i.e. their work is finished in advance of the show, and the work is presented to the audience, but one who is caught up in the writing during the staging in a mediated world, a kind of disembodied presence (although there are instances where this presence is embodied, e.g. Tadeusz Kantor used to be on stage and would orchestrate the experience by watching and also intervening in the performance to give further guidance).

The scenographer needs to therefore have this sensibility of what may happen (I will further develop the idea of the predictive scenographer in *WS III*), and take into account when designing-thinking the vibrancy of the resulting scenography: like an invisible Kantor the scenographer is always present in the work. This is not easy to achieve, because for this understanding the scenographer is dependent on the audience, and it is not possible to know the audience. So this event of writing-scripting-doing of the scenographer is largely mediated by the knowledge (the Know-How) of the audience, and therefore a language is generated between the absent scenographer and the unknown audience.

In ancient Greek mythology the Delphi Oracle was devoted to the god Apollo. The predictions given by the Pythia, the priestess of the Oracle of Delphi, not unlike the predictions of many oracles, were ambiguous and demanded the interpretation and input of the person who asked for the prediction. They were interestingly, therefore, similar to the predictive brain analogy providing complex predictions, which matched onto the incoming flow of information of their 'clients'. One of the names given to the god Apollo was 'Loxias', which means 'ambiguous'. According to the predictive processing paradigm our predictive brains don't make straightforward predictions, hence the analogy used for the predictive scenographer, who is also ambiguous. Like the Oracle, the predictive scenographer provides complex environments-predictions but these predictive scenographies, the contraption-scenographies, are not linear and straightforward but ambiguous, uncertain and in addition need the audience–participants to match their own expectations, emotions, prior-knowledge, desires, etc. to them.

In short the predictive scenographer tries to predict their audience's response states through the way they design the ethics of the space, as will be outlined in *WS II*, generating thus a 'groundless scenography' found between the top-down prediction (scenographer and art team) and the bottom-up error (audience–participants). The audience–participants themselves embody in their turn this hierarchical model, so their embodied brains are the top-down prediction flow and the 'surprisal' (Bruineberg et al. 2016) coming from the contraption environment are the bottom-up linear sensory inputs. I will expand on this circular causality tool and its applications in chapter 5.

2.2.3 Scenographic contraptions (part 1): 'stage' as consciousness-perception

The OED's definition of 'contraption' is 'a contrivance, a device (with suggestion of ingenuity rather than effectiveness)' (OED 2016). A contraption is therefore a kind of a prototype invention, and in order to be named a contraption something needs to 'feel/look strange, awkward or unnecessarily complicated' and 'often badly made or unsafe' (New Oxford American Dictionary 2016) to the viewer. I will also add to the above the notion of ambiguity, as the contraption opens up for multiple interpretations. An example of what contraptions are broadly understood to look like can be seen in the illustration by Heath Robinson below (Fig. 14).

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Figure 14. Heath Robinson, 'The Multi-Movement Tabby Silencer'

In the above image one's attention may be drawn to the process of the making of the depicted contraption and may engage with the explicit logic of the actual image in multiple levels (visual, sensorimotor, intellectual, etc.), and the questions this complexity raises. How does this thing work? What is the function of its different parts? Why did the person in the illustration make

this apparatus the way he has? This is silly, funny, or cruel. This looks or feels very complicated; why did the person in the illustration not just throw water on the cats (depending on our sensitivity on the matter we may feel angry with the action itself)?, etc.

This communication may also be extended between the viewer and the artist who created the complex work, for instance in the below examples, which you can experience first-hand between yourself (the viewer) and the creator of the *Chindogu*:

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Figure 15. Examples of Chindogu

Questions that may occur by looking at the above images are: Who thought of this? What do they want me to do with it? What do they want to achieve here, (laughter, maybe?).

Chindogu means an unusual or 'weird tool' in Japanese. These 'unusual tools' are defined as non-useless inventions, meaning that these inventions are created with solving a problem in mind but instead, by putting them into use, they create other problems, therefore prioritising ingenuity over efficiency, and for this they are rendered unnecessary. To qualify as *Chindogu*, as rule #2 of the *Chindogu* manifesto states, the creator must be able to hold the item in his or her hand and think, 'I can actually imagine someone using this. Almost' (in Kawakami 2015).

By looking at the *Chindogu* images, one may instinctively react with laughter or puzzlement as they encounter the absurdity of this object's operation. Contraptions are good at breaking an anticipated pattern by producing nonsensical formations. According to Cappucio and Froese:

> If non-sense often turns out to be just funny, rather than upsetting, is because humor [sic] and non-sense share similar cognitive systems of reaction. Humor [sic] involves surprising associations, bizarre juxtapositions that stimulate novel paths of thought by violating the audience's expectations (2014, p.16).

Chindogu, and by extension contraptions, are deliberately designed in such a way so as to partly alienate the viewer or user and engage them in an exploration and questioning of the number of novel possibilities for interaction with the specific object, an exploration that it is also embodied. The capacity to move, the capacity to touch, the capacity to smell, and our sensory and motor-nuanced pathways are involved in our experience of seeing, and therefore we engage in a sensorimotor conversation and correspondence with what we choose to see. This is an understanding that

has been backed up by empirical evidence in cognitive science, giving way to cognitive philosophers such as Alva Noë to support that all perception is action (2004).

Furthermore the action of 'sense making is an ongoing activity and not a final state of equilibrium between internal goals and external conditions. There is always something else to be made sense of', say Dotov and Chemero (2014, p.57), assuming an enactive view of sense-making. In terms of how non-sense is used by artists, in enactive cognition the capacity that art and literature have in 'unleashing the power of non-sense' has not gone unobserved, say Cappucio and Froese (referring particularly to the surrealists), and they add that '[a]rtists and playwriters know well that it is possible to play with this coupling, intentionally manipulating it to free certain desired effects' (Cappucio and Froese 2014, p.28). Theatre scholar Di Benedetto observes that 'when artists make use of patterns, they can attract the brain's attention by violating that pattern' (2010, p.11).

This violation of the audience's expectations, for the creation of meaning and context, is at the centre of my performance praxis for generating landscapes of tension, governed by the notion of contraptions that are uncanny, resist signification, and offer a 'disciplined' surprise. However, Cappucio and Froese rightly observe that 'failing to recognize an object's use and perceiving it as unfamiliar or surprisingly absurd are two different experiences that do not imply one another' (ibid. 2014, p.18). Therefore, care needs to be taken when generating and investigating ways with which this negotiation between audience–participant and performance environment could be orchestrated as part of the scenographic contraption experience, so that the audience–participant does not completely fail to recognise the work,

and therefore ignore it altogether, but engages with its absurdness and unfamiliarity. There are other notions that contraptions relate to such as that of the montage and the scaffold, which I will mention in later chapters.

I have also referred earlier to contraption-environments and the idea of an invisible contraption-concept in theatre and performance, rather than an evident structural one. But before going into what contraptions do, and generate in theatre and performance with my performance experiments, I will first briefly outline three examples of what contraptions look like in avant-garde theatre and performance of the previous century as this may help with giving a historical perspective to this notion I am putting forth. First, in the Constructivist theatre of the early twentieth century in Russia, Varvara Stepanova's set for *The Death of Tarelkin* directed by Meyerhold in 1922, included different individual apparatuses on stage as can be seen in the image below. Meaning was created by the interaction between the performers and these obscure contraptions (Fig. 16).

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Figure 16. Varvara Stepanova. Models and furniture for Alexander Sukhovo-Kobylin's play *The Death of Tarelkin*, 1922.©Rodchenko. Stepanova Archives, Moscow.

Second, in the USA Robert Rauschenberg's 'combines' (circa 1954) were sculptural montages including ordinary everyday objects sourced locally, which informed his performance work (and vice versa). Below is an image of

one of his own performance shows, where his method of 'combines' finds its way into the space, creating an assemblage with his own body.

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Figure 17. Elgin Tie, 1964. Rauschenberg performing his Elgin Tie, Five New York Evenings, Moderna Museet, Stockholm, September 13, 1964. Photo© Hans Malmberg.

Third, Polish artist Tadeusz Kantor practiced the idea of 'emballages' (wrappings), where he also, similarly to Rauschenberg, incorporated discarded objects in his canvases and sculptural works; however, his technique involved wrapping these with fabric. His performances involved assemblages-props (what he referred to as 'bio-objects'), which embodied metaphors such as time, death, memory, etc.

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Figure 18. Tadeusz Kantor, *The Trumpet of the Last Judgement*, 1979.

For the three visual artists above who actively engaged with theatre and performance (and who therefore can be referred to as scenographers) there was a common need, when embarking on a theatre and performance production, to create apparatuses that conveyed complex visual stimuli, or were bricollaged with bodies, or both. My interest lies in the why of this need, and in tracing this need also to contemporary forms of performance (immersive, multimedia, interactive, events), including my work, where the element of the audience as participant is added to the assemblage. My understanding is that with these assemblages, the specific artists, when faced with escaping the canvas (as they are all three creating between canvas and 'stage'), are communicating a similar sensibility regarding their expression of a certain perception. The way they express this is by navigating away from strict representational forms of depiction aiming to flesh out process and non-linear perception of simultaneity where objects, bodies, world, audiences are in perpetual conversation.

Bleeker suggests that there is a dialogic relation between the theatrical apparatus and perception in that 'the theatrical apparatus provides a kind of experimental set-up that can reveal how perception works' (Bleeker 2005, cited in Germano 2013, p.41). This occurs in theatre, also as an embodied experience: 'addressing the audience through different senses simultaneously, can provide 'a kind of experimental setup' through which we can explore how the body is involved in perceiving and understanding the world' (Bleeker 2005, p.110, cited in Germano 2013, p.3). The addressing through different senses simultaneously of the audience–participants, within an experimental setup in the case of the contraption theory, is understood as a sensorimotor unfolding in space. Therefore, the contraption (and similarly

the contraptions in the examples of the three aforementioned artists) provides a compressed meaning, which needs to be decompressed in a non-linear manner by the audiences–participants' embodied minds. Each audience–participant is therefore invited to unfold a unique rhizomic meaning from this complex experimental setup and simultaneously navigate it; this mentally navigated experience is, as outlined earlier, also a sensorimotor one, despite the fact that the audience are not physically participating. Furthermore, exploring how the body is involved in perceiving and understanding of the world to which Bleeker and later Germano refer to can be extended at the same time to involve their co-audience–participants.

By studying the contemporary theories that suggest how perception and consciousness work in contemporary philosophy and science, I argue that we can create environments that address the audience through different senses simultaneously. The metaphors of consciousness, as outlined by current scientists-philosophers (Baars, Edelman and Tononi, Dennett, etc.), are contraptions, characterised by ingenuity, however inefficient in relation to what we consider efficient in our culture (e.g. a linear structure with a beginning, a middle, and an end) and open to more than one interpretation. Maurice Merleau-Ponty admits in relation to the phenomenologist's understanding of consciousness: 'consciousness, which is taken to be the seat of clear thinking, is on the contrary the very abode of ambiguity' (2002, p. 298). Consciousness and perception metaphors, therefore, and the way they are outlined by current thinkers, can help me with the conceptualisation and the creation of my scenographic contraption practice-research, which embodies prediction, ambiguity, experimentation, and other notions, which I will be outlining throughout this project. It also helps me on an aesthetic level

to deviate from the Victorian steam-punk machine aesthetic of a contraption, and relate it to a more general, processual, rhizomic, and participatory performance aesthetic, and a general theory of scenographic contraptions oscillating between the material, the immaterial, and the social.

Merleau-Ponty adds that 'this ambiguity is not some imperfection of consciousness or existence, but the definition of them' (2002, p. 298). Likewise, the ambiguity of the scenographic contraption is its definition, and therefore I situate consciousness (and perception) in the centre of my arts praxis as a contraption structure.

Machon refers to the ambiguous and multidimensional nature of a (syn)aesthetic hybrid in immersive theatre extending Susan Broadhurst's (1999) understanding of the 'complex simultaneity of stage processes leading to the impossibility of producing a single interpretation' (cited in Machon 2009, p.61). This situates the audience as 'active participants in the performance experience and the process of meaning-making as a result of the interplay of the various layers of the (syn)aesthetic hybrid' (Machon 2009, p.61). As mentioned earlier, Machon's understanding informs the scenographic contraption; however, the idea of the scenographic contraption focuses primarily on the sensorimotor understanding of perceiving scenographic participation. These contraptions, with their unfinished, inefficient aesthetic, aim to invite the audience to question, explore, and add/contribute, and in some cases collaborate or compete. There isn't something particular that is missing from the contraption; rather there are different ways of using them, enhancing the structural coupling between the contraption and the agent. The contraption explores how we can design

performance environments that shape the attendant's ability to create, emote, imagine, and empathise.

As already mentioned a contraption in this study is understood not so much as a machine, but as consciousness, a process, and an en-spaced network. By fleshing out poetically the inner logic that one can trace in this metaphorical thinking of consciousness and perception, and reflect upon it (what I earlier referred to as 'scenography in the flesh'), one can develop structurally determined scenographic systems that embody elements from contemporary thinking of consciousness and perception for developing scenographic participation and expanded scenographies. In order to avoid universalisms again, I will say that this method is deeply cultural and personal with regards to the audience–participants, and to the artist–scenographer's interpretation of the theories of consciousness; in this particular research, the dialogue is generated between me and the specified consciousness and perception theories in the West, my collaborators, and the audience–participants who happen to come to the performance experiments I have designed. As shown in the below diagram, I investigate how a non-binary understanding of the scenographic aesthetics of material and immaterial can be achieved in relation to cognitive frameworks of 4E cognition that also stress the social.
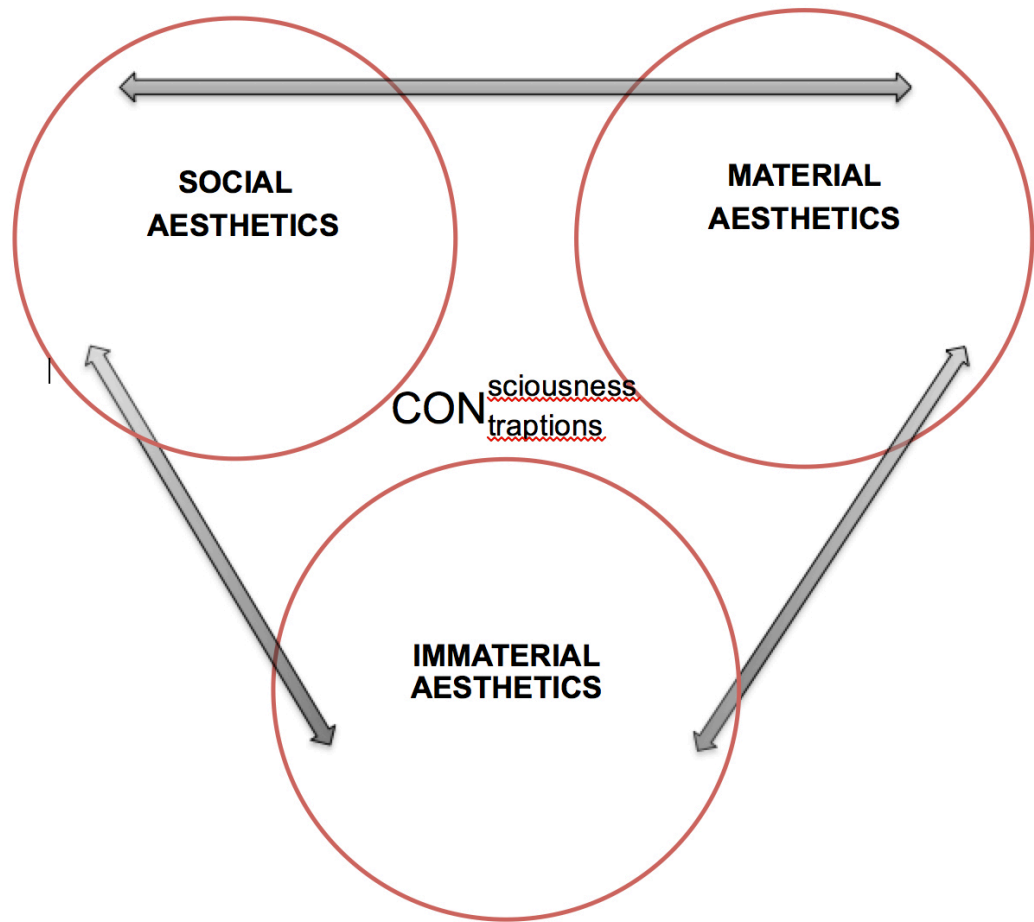
Figure 19. A non-binary understanding of scenographic contraptions oscillating between the material, the immaterial, and the social.

Rachel Hann (in press) proposes that the term 'scenographic' is critically distinct to scenography in that an object or event can impart a scenographic trait without necessarily being considered scenography. Hann's distinction between scenography and the scenographic has helped me in my framing of scenographic contraptions as a *scenographic* tool, and as such related to the stage, situated within current hybrid, participatory performance culture but able to be applied 'to artistic and social scenarios beyond theatre' (ibid.).

2.3 A Depiction of My Methodological Approach

Cognitive theories of consciousness metaphors, and 4E cognition imbricated within my arts praxis (scenographic contraptions), can lead to new knowledge in relation to ways of thinking about, generating, and navigating 'groundless' scenographies.

This understanding has been enriched and a further systematic application of 4E cognitive theories has been developed with reference to my performance experiments in chapters 3, 4, and 5. This is where I am using specific examples from the performance experiments to illustrate the ways in which this method has been used and developed as part of my practice-research.

The aesthetic result of the practice relates to my particular style through the aswespeakproject (although I have to note here that the work produced during this research is at an early experimental stage, and has been produced with the particular research questions in mind and with a small budget).
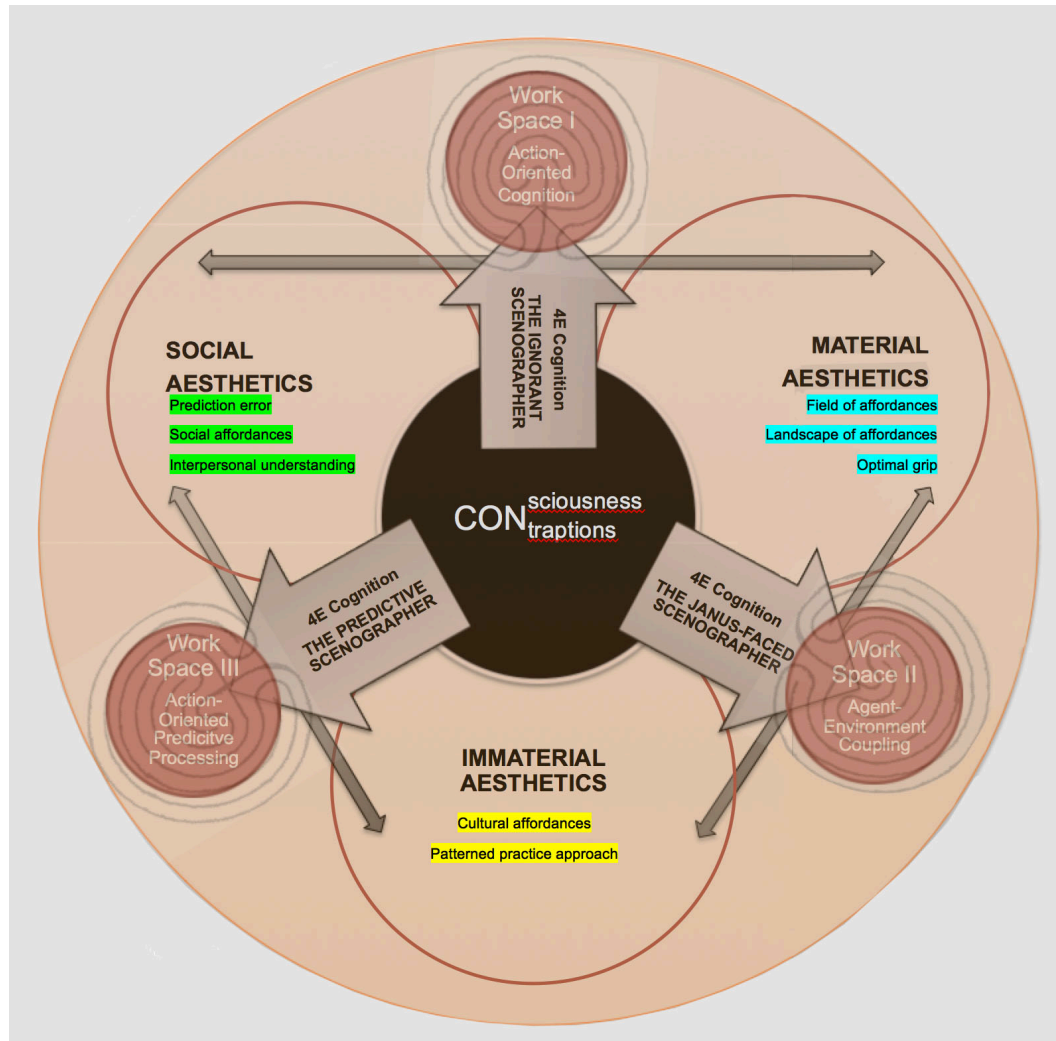
Figure 20. My practice-research scenography ecosystem for answering my overarching question: How might 4E cognition theory, and specifically radical embodied cognitive neuroscience and the more generally applied notions of social cognition, contribute further to understanding the workings of dynamic scenographic systems within the current landscape of hybrid participatory performance?

Part II
PERFORMANCE EXPERIMENTS

Linking Structure, Language, and Event-Space in Continental Thinking and Cognitive Science

Before I proceed to *Work Space I* (*WS I*) I will introduce here the concepts in this chapter title that are found throughout the three practice experiments. I will also address several insights that have occurred after reflecting on the practice but it is important to introduce these terms here for clarity.

In scenography research the use of phenomenological frameworks (i.e. McKinney 2008) has taken our understanding forward in terms of investigating the operations of scenography and the nature of the communication between scenography and audiences. I argue that the common understanding of the bidirectional relationship between the embodied brain and the world found in Continental thinking and post-cognitivist thinking is useful in adding to the above scenographic knowledge. While the 4Es understanding is based on empirical data, it transcends Anglo-American analytical philosophy of a stable relationship between brain and world, and embraces groundlessness, thus post-structuralist thinking, and therefore can generate insights on notions beyond representationalism. Below I will demonstrate how this bridging is valuable for scenographic research and how it has been useful for reflecting on my practice.

Derrida refers to the word 'event' as a 'rapture' and a 'redoubling' (1993, p.223), and argues that 'structure – or rather the structurality of structure' (ibid.) 'up until the event' has been reduced by being given a centre or by being referred to in relation to a 'fixed origin' (ibid. p.224). This centre, he

continues, is not only used for orientation but also for limiting the freeplay of the structure, asserting that once a structure has a centre, this centre orients and organises the freeplay of 'its elements inside the total form' (ibid.). The paradox with this centre is that it is within the structure and outside it, because although the centre is at the centre of the totality it does not belong to the totality. He explains that the history of the West is the history of these metaphors and metonymies of this centre and further relates this centre to the constant of a presence, e.g. telos, arche, God, man, etc. This presence has now been replaced by language, argues Derrida, and he goes on to say that what happened to this centre when language came into play is that 'in the absence of a centre or origin everything became discourse' (ibid. p.225). I argue that similarly in contemporary scenography the idea of a centre has been replaced by the 'contraption'. I will now go onto making the link between post-structuralist thinking, enactivism, and the contraption.

Maturana sees language as a biological phenomenon and the understanding of language as a verb (languaging) rooted in the mesh of sociocultural practices:

> We human beings language while operating in the domain of structural coupling in which we coexist as languaging beings with other languaging beings. As we language, objects arise as aspects of our languaging with others, they do not exist by themselves. (Maturana 2002, p.28)

There is a similarity in this thinking with the post-structuralist view of language as being perpetually caught up in its own nature and therefore not being organised around one centre. In addition, language, discourse, speech, etc. in the *Work Spaces* is understood 'to mean any significant unit or synthesis, whether verbal or visual […] even objects will become speech, if they mean something' (Barthes 1972, p. 109).

In architecture Bernard Tschumi's notion of disjunction refers to the discourse between event and space. Disjunction in architecture implies 'constant, mechanical operations that systematically produce dissociation in space and time, where an architectural element only functions by colliding with a programatic [sic] element, with the movement of bodies, or whatever' (1996, p.213). Tschumi, when talking about contemporary architecture, considers the relationship between 'the concept of space and the experience of space' as 'mutually exclusive' (Tschumi 1996, p.16); he explains that although there is an inevitable co-habitation between space and event, there is also a disjunction between the two (ibid. p.18), and he asserts that this 'means that architecture is constantly unstable, constantly on the verge of change' (ibid. p.19). What Tschumi suggests with his theory of disjunction resonates with what the enactivists refer to as groundlessness. Tschumi is not talking about structural coupling but disjunction; disjunction, however, in logics is a connecting term, referring to the relation between terms 'of disjunctive proposition' (OED) a critical coupling, therefore, where one notion is juxtaposed with the other and they remain in a an enfolding and unfolding discursive relationship.

'There is no space without event,' writes Tschumi (1996, p.139) and Dorita Hannah, thinking between architecture and performance design, extends Tschumi's notion of an event-space to a space that performs, asserting that 'space – whether a suspended pause, a blank area, an empty room or a limitless cosmos – performs' (Hannah 2011, p.54). Furthermore, as Derrida suggests during his conversations with Tschumi, the word 'event' shares a root with the word 'invention' (Tschumi 1996, p.257). Taking into account the inventive, processual nature of my methodological tool of contraptions, and

drawing from what I have outlined above in regards to Tschumi and Hannah, I am making a case for focusing on that aspect of the performing event-space that is related to invention.

Scenographic contraptions flesh out process and generate a groundless, and inventive, participatory space, which, in line with Derrida's understanding, is never to be achieved, but we as emancipated and critical audience–participants need to work towards. The way we navigate an event-space (Tschumi) that performs (Hannah) in participatory performance environments is following the above line of thought, an inventive process.

Inventive processes are governed by trial and error; therefore, repetition and, in the case of theatre and performance, trial and error are intrinsic components of a *rehearsal*. While Hannah suggests that the space performs, I additionally suggest that in these particular hybrid performance situations and environments, the space simultaneously performs and rehearses. This idea stems from a paper I presented at the Critical Costume 2013 conference (see Appendix A). I extended Rachel Hann's and Sidsel Bech's conference call, which posited that 'the costume performs', following Hannah's view that the space performs, to suggest that in order for the costume to perform it needs to rehearse.

I am now introducing the idea of a space, which rehearses together with the agent(s), and that, when agent(s) and environment are attuned, both space and agent(s) perform. What are the implications of the space performing-rehearsing? Rehearsal entails the notion of immersion, in a sense that when one rehearses or improvises, they are caught in a different space than one in which they perform: when rehearsing one is implicated in the game, the process. However, this rehearsal-performance is occurring simultaneously

within a hybrid performance-installation space because there isn't only one privileged position of an audience–participant or similarly one central event. In a hybrid performance space the viewing and experiencing positions are many, and shifting, resulting in a multifaceted event (so, for example, where the space may perform for one agent (audience–participant), it may be in rehearsal with the other), and again because these are happening simultaneously there is a perpetual disjunction between performance and rehearsal, which needs an inventive, or emotionally shifting, ranging from rapture to boredom, approach in order to be navigated.

On entering the thinking of contemporary interpretations of scenography based on the etymology of the word (Baugh 2011; Hann forthcoming), I argue that the word 'scenography' entails in itself the notion of disjunction, the event-space discourse, as it embodies as a word in itself the tension between the space (stage, *σκηνή*) and the event (of writing, *γραφή*) within this space. There is a perpetual discourse between the stage (scene) as the space and the writing of/within/about the stage as an event, a doing (orchestrating/directing/authoring/co-authoring/rehearsing), especially in hybrid performance environments: a simultaneous understanding of a space (stage) and a doing within this space (the event of writing). Drawing from my previous analysis on space as performing-rehearsing, I am arguing for a contemporary scenography 'as contraption': a process, a language that is caught up in its systemic nature between space and event in line with a post-structuralist understanding, but an embodied one as understood by post-cognitivist theories of cognition (Maturana).

This disjunction within scenography shows the difficulty we as scenographers find in explaining in a straightforward way to a lay-person

what we do, what scenography does, and why we need to use so many

different names, in comparison to choreography or dramaturgy, for example

(performance design, spatial design, stage design, scenography,

performance design and practice, theatre design). When scenographer Es

Devlin tries to explain what her work is about in a recent interview, she says:

> I do all this work and nothing physical remains. So what I'm really
> designing are mental structures, as opposed to physical ones.
> Memories are solid, and that's what I'm trying to build (in O'Hagan
> 2016).

Although Devlin describes what she does, it does not seem easy to

communicate; she talks about designing mental structures, and that

memories are solid; however, memories are not solid. Perhaps if Devlin

were to describe how a scale model is made out of card, for example, her

vocabulary would have been more specific, and the nuances in the language

would have also communicated with more precision to a hypothetical

reader/listener. Josephine Machon addresses 'the dilemma of verbally

analysing experiential performance work in order to foreground the

significance of this style (immersive) in theatre – historically, culturally, and

in terms of academic study and individual interpretation' (2013a, p.3).

Therefore in answering my research question that is related to the ways in

which we might use 4E cognition and cognitive neuroscience to investigate

an audience's experience of dynamic scenographic systems, and the

implications of the findings of 4E cognition on scenographic making

processes, I am suggesting that conceptualising contraptions can not only

present us with what contemporary scenography may look like but also

contribute to the vocabularies for talking about what scenography does.

The conceptualisation of the contraption tool here has been tested

throughout my research in the practice experiments *WS I*, *WS II*, and *WS III* in order to critically reflect whether or how useful it is to help us navigate the groundless, and also contribute to the nuanced, invisible language of hybrid, participatory performance from a scenographic lens.

My understanding of these hybrid performance environments as performing-rehearsing spaces is where the audience–participants take up different roles where the 'spotlight of attention' changes depending on who is attending and who is doing. The frames are not linear but appear simultaneously during moments of attunement where the performance happens. This is what I tested in my first performance experiment.

WORK SPACE I
MATERIAL

Chapter 3: *Work Space I* – a Scenographic Workshop on Consciousness
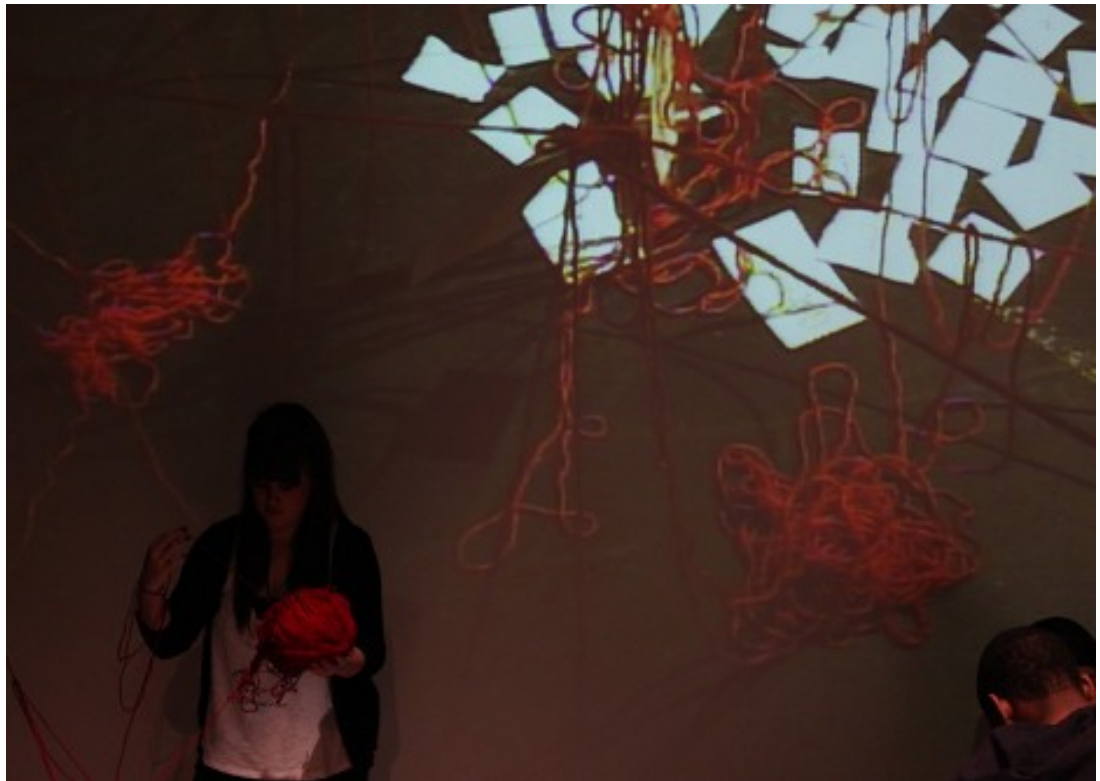
Figure 22. The final stage of *WS I*

3.1 Fleshing Out GWT Imaginatively for the Production of Participatory Scenography

For the first Performance Experiment *Work Space I,* I translated scenographically Baars' global workspace theory (GWT) and used this adaptation as a guide to create an environment within which participants were able to grapple with materials provided in the space and thus develop a collectively crafted artefact.

📹

(Please go now to folder *WS I* and watch: *WS I (for Mac).*mov or *WS I (for PC).avi*. Sound between 02:28-03:41)

I led this half-day workshop, so I was steering the process and was responsible for explaining the way the system worked and answering potential questions from the participants. I led a set of warm-up exercises and there were a number of instructions provided on each table (the rules, as seen in the video), which were adapted by each participant depending on their skills and how they wanted to approach these instructions. This process put me at the centre of the work, and at times I felt I was directing part of the group, but I also felt it distracted me in terms of my observing of the process. It gave me the role of the 'dialogic facilitator' (Blaikie 2000, p.52), which felt close to the educator, especially in the first half of the workshop when I had to respond to a few questions from the participants such as: 'What do we have to do now?' Due to my different roles, I refer to the attendees of this workshop as 'participants', whereas in *WS II*, and *WS III* I refer to them as 'audience–participants'.

The fourteen participants of the workshop were third-year undergraduate performance students, graduate students, and members of staff from my school, and two 'participant–observers' (a postgraduate graphic design student from my department, and a sound designer-engineer postgraduate student from the University of York). My original thought when devising the workshop was to involve undergraduate students from the field of scenography, fine art, or design, so that the result would have been more skilfully managed, from a designer skills point of view. Later, I opened the call further without specifying any required skills, and this led to having mostly participants who were not skilled makers or designers, something that brought forth the insight of the 'ignorant scenographer'.

The workshop took place at Alec Clegg (stage@leeds), University of Leeds, on 14 May 2014. My methods for collecting qualitative data focused on the use of video (the process was recorded from above the grid using a video camera, while four other still cameras were placed in the four corners of the studio). The video recording picked up sound (voice) from what the participants talked about during the workshop; however, this material was not used for my analysis. Furthermore, there was a voice recorder strategically positioned on one of the tables (the 'Language' table) so that the participants could record the new language they developed, as can be seen on the video (02:28-03:41). In addition, I gave out questionnaires to the participants at the end of the workshop to fill in and had a short post-workshop discussion (these are available in the USB folder *WS I*). For the analysis of the workshop I used the above qualitative data and also observation and reflection, drawing from my own experience of the work, and personal notes made shortly after the workshop.

The selection of materials used (wool, fabric, paper, clay, glue, watercolours etc.) was made according to their texture, colour, and my personal view of the potential and the qualities that these familiar and basic materials could afford. I also considered the potential 'conversations' that I thought these materials could generate with the participants, along with the 'conversations' that they themselves could develop with each other using these.

Due to the complexity of this three-hour workshop the quantity of interactions produced was vast and it is not the aim of this analysis to expand to every level of the process. I am focusing therefore on 'moments of insight' (Nelson 2013, p.29) I have captured with the documentation concerning the dynamic

exchange between the participants and the materials and I will not extensively address other aspects (voice/sound, for example).

The participants in hybrid participatory events are a dynamic element of the system for which the scenographer has to account for but, as in any theatre or performance event, they cannot predict in advance the intentions, mood and motivations of the group nor of its individual members. In traditional theatre settings the above design challenge is solved by providing a seating area for the audience; however, in hybrid and participatory performance environments, the audience's position constantly shifts and this affects the scenography. The positioning of the participants in *WS I* was determined partly by the arrangement suggested in Baars' GWT diagram, which was used imaginatively as a ground plan for generating scenographic interaction. My contextualisation of the metaphor of GWT drew from the metaphorical description of consciousness achieved by a distributed society of specialists. As seen in the video, according to Baars' metaphor-hypothesis, consciousness is about something and that something, the message, although it is broadcasted globally, 'it is interpreted locally in the mind of each audience member' (Baars 1998, p.53). A specific conscious content, for example when one sees a coffee cup, depends on the local regions of the visual cortex. 'But, by itself, local cortical activity is not conscious. Rather, the conscious experience of a coffee cup requires both local and widespread cortical activity' (McGovern and Baars 2007, p.177).
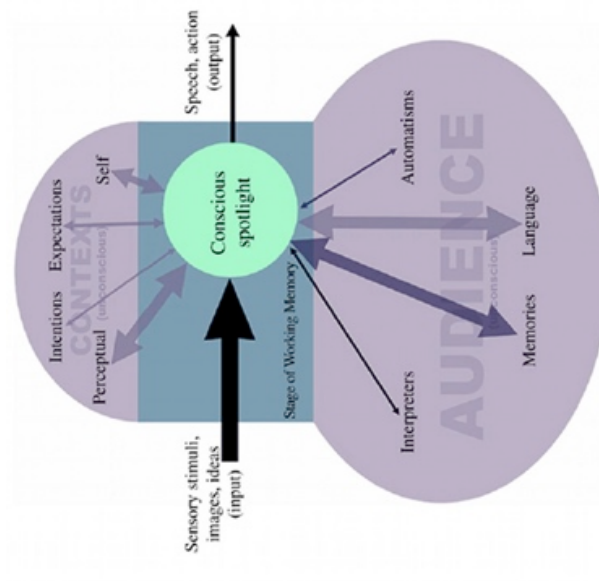
Figure 23. The 2007 version of the theatre metaphor of the global workspace theory model (Baars 2007, p.957) (top) and its appropriation in *WS I* (bottom).
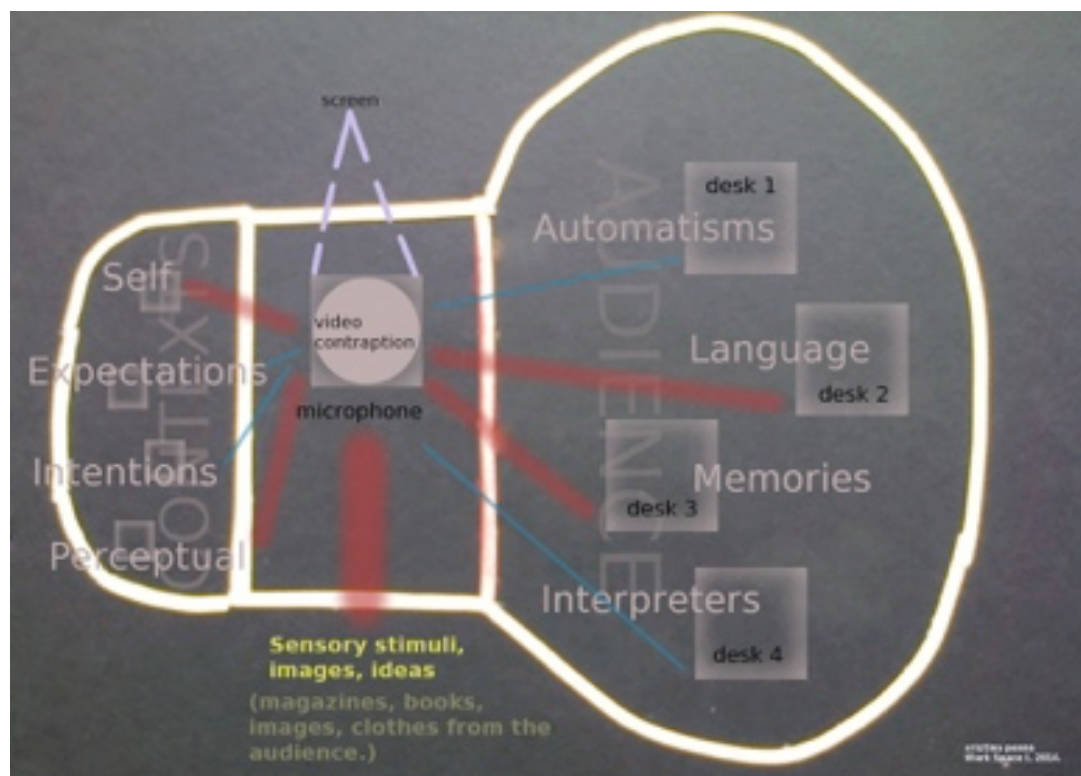
Work Space I consisted of a participatory space that simultaneously performed and rehearsed as already mentioned, depending on the participants' different wider 'roles', that of 'an actor', or a 'backstage crew

member', or an 'audience member', where the participants were situated within the space according to the diagram, and their contribution. Furthermore, as already argued, this shift of roles did not occur in a linear orderly manner, and the participants were not necessarily free to choose what to do or where to look, but they were instead guided by a number of 'invisible' unfolding and enfolding relational factors, e.g. the affordances of the materials on offer, their co-participants, their bodies within the space, their intentions, etc.

This workshop was the first performance experiment helping me in developing the aesthetics of dynamic scenographic systems by entering a creative dialogue with contemporary thinking on consciousness and cognition. However, the complexity of the system was high and the usefulness of persisting with the details of the GWT, I realised, were not as important as the relations generated between the participants, the materials, and their co-participants. This was something I took further in *WS II*, and *WS III*.

The relational dynamics between participants and the materials provided within the space, which comprised part of this 'groundless scenography', are the elements I am looking at closely within this contraption-environment, and aiming to untangle, as much as I can. For this, I am employing as critical, conceptual and theoretical frameworks an extended understanding of Gibson's 'affordances' by Rietveld and Kiverstein (2014) and Bruineberg and Rietveld (2014) for tackling the multimodal process nature of scenographic reception and operations in this practice investigation.

The above theories belong to 4E cognitive science, whereas Baars' GWT belongs to a computational-turning-connectionist theory, and below I will

demonstrate the usefulness of combining the two different approaches for scenography research in *WS I*.

According to connectionism, and as enacted in *WS I*, cognition emerges in the form of global states in a network of simple components and is achieved by a distributed society of specialists. In *WS I* the simple components were the desks with the materials, while the specialists were the participants. According to connectionism, rules are used for the operation of the different components, and even more rules 'for changes in the connectivity among the elements' (Varela et al. on connectionism 1991, p.99). In *WS I* the rules were provided on each desk and corresponded to the action that needed to be done in the specific table, whilst the 'even more rules' were decided by the participants' (the specialists') actions and bodies and by the rules dictated by the materials (I will unpack this further in my analysis to follow). Finally, the connectionist model understands that the cognitive system functions well when the result 'can be seen to correspond to a specific cognitive capacity – a successful solution to a required task' (ibid.). The required task (the crafting of a collective artefact), in *WS I* however, accepted all solutions as 'successful'.

This was an open system, which allowed each one of the participants to have access to the 'broadcasting area', 'the spotlight of consciousness', at any time: the participants spoke into the microphone, and what they said was heard by everyone in the studio, and what they made with the materials and wished to share with the group was broadcast to all the participants on a large screen. The aim was to explore how the written rules that were provided by the 'ignorant scenographer' and used in the different components (the four tables) through the actions of the participants, worked

together with the 'invisible' rules (the affordances provided by the raw materials of wool, clay, etc.) to generate the changes in the connectivity among the elements (the participants and the materials) towards the manufacturing of 'something', 'anything'.

As an artist–scenographer I used, in the specific performance experiment, GWT to develop my design thinking for spatially contextualising the connectionist vocabulary such as:

self-organisation,

emergence,

interaction,

convergence zones,

integration,

dynamic system,

process,

complexity

simultaneity

Indeed, this connectionist-computational vocabulary is a shared one with contemporary scenography and performance as it is useful for communicating the subtle dynamic aesthetics found in the contemporary performance landscape. 'Emergence' for example is a term commonly used both in the industry and in contemporary scholarship of performance, replacing in many occasions the word 'appearing'.

What is therefore useful to this study is the non-representational concept-metaphors that this vocabulary entails and the 'languaging' (Maturana 1988) that these concept-metaphors can offer. In a similar way to the poststructuralists position of '[t]here is nothing outside of the text [there is no

outside-text; il n'y a pas de hors-texte] (Derrida 1997), enactivist Maturana suggests that we 'happen in language' (Maturana 1988, p.43) and that '[w]e have no way of referring to ourselves or to anything else outside of language' (ibid.). He situates language as a biological phenomenon, and as interrelational:

> [L]anguage is a manner of living together in a flow of coordinations of coordinations of consensual behaviors [sic] or doings that arises in a history of living in the collaboration of doing things together (Maturana 2002, p.27).

In *Work Space I*, I observed that the connectionist (representational) language model, when languaged (en-spaced, and enacted), generated an enactive, autopoietic scenographic system.

Understanding therefore language as a manner, or a doing, as 'languaging' (Maturana 1988) can be useful to scenography for harnessing the sensorimotor and felt understanding of metaphors for the creation of dynamic, self-organisational scenographies (or 'scenograpy in the flesh' as outlined on p. 57). Such scenographies allow the participants to develop common doings, reflect, get stuck and rely on their 'histories' in order to bring forth their own worlds to complement these common doings.

Applications of Enactive Perspectives of Affordances in *Work Space I*

3.2 Expanded Perspectives of Audiences' Engagement with Materials: Landscape and Field of Affordances, Optimal Grip

An 'affordance' is a neologism, coined by ecological psychologist James Gibson (1986) from the verb 'to afford' as a way of attempting to explain the potential that an object carries or entails and at the same time the potential or function that another organism finds in that object. The concept of

affordance, although it draws from the gestalt psychology concepts of 'valence, invitation and demand' (Gibson 1986, p.138) that a phenomenal object has in relation to a physical object, is different in the sense that an affordance is a quality of an object that is there to be perceived regardless of the phenomenal object's need. The observer may locate an affordance in the object or the environment and use it but she/he does not determine it. As Gibson himself puts it: 'The object offers what it does because it is what it is' (ibid. p.138–9). Gibson therefore suggests an ecological approach to (visual) perception where 'perceiving is an achievement of the individual, not an appearance in the theatre of consciousness' (ibid. p.239). Perception is not based on stored information; the information is always available to the animal in the world.

According to theatre and performance scholars Bleeker and Germano 'enactive approaches are useful in understanding how theatre works by starting from the interaction between the affordances of the medium and the perceptual possibilities of spectators' (2014, p.383). This is a pertinent quote to this project that I will be following up; however, I need to point out here that the enactivists Varela, Thompson, and Rosch take a critical stance to the Gibsonians' 'attempt to build up the theory of perception almost entirely from the environment' (Varela et al. 1991, p.204). They write: 'Whereas Gibson claims that perception is direct detection, we claim that it is sensorimotor enactment' (ibid.) and focus on the structural coupling of the animal. I agree with the enactivists, who on one hand reject dualism but on the other hand do not go the completely opposite direction of suggesting a monism like Gibson, but find a middle way between these two (Varela et al. 1991, p.202).

Therefore what I will be using are recent radical embodied and enactive views that consider affordances both relational and a resource (Rietvelt and Kiverstein 2014, p.327) to reflect on the rich, reciprocal scenographic exchange between the participants, co-participants and materials in *WS I*.

The materials used in *WS I* were simple and common (e.g. wool, paint, carbon, pastels, paper, thread, and food (cheese)). With time, new affordances of the materials were discovered and perceived by the participants who started unfolding, unrolling, cutting, filling, covering, grasping, sticking, tasting, and/or throwing them. A ball of wool was unrolled and was used in more unusual and 'inventive' ways as time went by. The participants used the wool to create new spaces, to stick on paper as decoration, or, later, as one of the participants did, to cover their heads, transforming it into a wig, a veil, a moustache, and so on. Furthermore, new objects were created as the participants combined different materials (e.g. clay with string), and new affordances emerged in these new combinations.

WS I was a 'scenographic landscape', as defined by scenographer David Shearing: 'a manifold experience of cognitive, corporeal, material and spatial agents that manifests itself through an active doing of the scenographic world' (2014, p.50). The participants engaged in an active doing and experienced the work as active agents in a dynamic interplay *with* the constantly changing scenographic landscape: the materials, the voice, the light, the environment, their co-participants, and so on. In terms of untangling the elements of the 'scenographic landscape' of *WS I*, I am referring to Bruineberg and Rietveld's 'terminology of skilled intentionality', where a 'landscape of affordances' is defined as 'the affordances available to the whole spectrum of abilities available in our socio-cultural practices' and a

'field of affordances' as the 'affordances that stand out as relevant for a particular individual in a particular situation' (Bruineberg and Rietveld 2014, p.2).

The term 'field of affordance' could prove useful here as it focuses more on the dynamic and self-organisational nature of an audience–participant's experience relating to the affordances that stand out as relevant for the audience at a given moment within the 'scenographic landscape' (Shearing 2014, p.50). Participant A1 shared their experience by writing, 'I used, clay, string, fabric. I made a washing machine with a line of clothes coming out of it. It was whimsical.' They then explained that they made a washing machine because the story (what the central 'actor's' voice was talking about) included washing. In the case of participant A1 the affordances that stood up as relevant, the 'field of affordances' along with the stimulus of the 'story', guided them to select the materials that appeared relevant at that stage to respond to the specific task: the making/manufacturing of an object. There was a certain amount of distilling of information on the part of participant A1 in order to maintain their self-organisation. This distilling was not happening inside their head but occurred as an action-oriented haptic dialogue between the participant and the surrounding affordances. Participant A1 created a 'washing machine' but the shape, size, and design of the specific object were determined by the sensorimotor 'conversation' between the participant, the experience (listening to a specific 'story'), and the materials available. There was a tendency towards an 'optimal grip', defined by Bruineberg and Rietvelt as 'the tendency of a skilled individual to be moved to improve its grip on the situation by responding to solicitations' (2014, p.2), in order to maintain their self-organisation within the interrelated network of affordances

('landscape of affordances') and continue to experience the 'scenographic landscape'. The participant responded to what they heard of a washing machine with a line of clothes coming out of it; out of all the materials on their desk, they chose to use clay, string and fabric to give life to that interpretation of the 'story', and the image of that story was co-created alongside their interaction with the materials.

The active doing of audience–participant A1 in the specific example during *WS I* is haptic and is largely impacted by the fact that it is placed in a dynamic interplay with the landscape of affordances: what the central voice said (a story related to washing), the materials and objects in the room (clay, string, fabric, microphone, lights, etc.), their mood/state (described by the participant as 'whimsical'), and the co-participants (how they occupied the space, what they said and other aspects of their presence in the space that are difficult to pinpoint due to the complexity of the system).

Rietveld and Kiverstein (2014) assume a new perspective of understanding affordances, which is situated in the observation that until now the concept of affordance has been applied without taking into account the specific context in which the affordances are exercised by each animal. Therefore, in the case of humans, they suggest an understanding of the affordances' 'embedding in sociocultural practices' (Rietveld and Kiverstein 2014, p.326). Their view comes from Gibson's reference to an ecological niche that each animal forms and tailors according to its needs; in the case of humans, Rietvelt and Kiverstein argue that the niche in which affordances are understood and used is particularly defined by sociocultural practices. In the occasion of theatre and performance, this can be applied to the relation of the audience within the performance, and an example is given below.

In *WS I* during Cycle 1 (Immersing) the group worked on an exercise in a circle using a ball of wool: the instruction of the exercise was to throw the ball of wool to each other while at the same time to not let go of the unfolding thread, thus creating visible 'links/lines of wool' from one person to the other in a circle (Figs. 24, 25, and 26). When the exercise commenced it was clear that the members of the group found themselves in bewilderment of how to throw the ball of wool and at the same time keep hold of the other end of the thread; the material wanted to naturally follow the direction of the throwing action. In fewer than five tries this puzzle was solved by the group, who collectively came to the decision, after trial and error, that the best way to do this would be to make a loop with the wool around one's wrist before throwing. The group therefore found a way to embed the affordances of the wool in their circle of interaction, using their own body (wrists, posture, etc.), language (explaining the problem and potential solutions to the rest of the group), and prior knowledge so as to reach their collective goal and continue their original task (the game).

Figures 24, 25 and 26, Immersing. (photograph taken from above the grid). The participants took the collective decision to make a loop around their wrist before throwing the wool to the next person in the circle. This allowed the group to carry on with their task of making visible thread connections between one another.

The group's main task was to get on with their activity and so they economised time by collectively concentrating on 'ad-hoc' problem solving, finding the most effective way of using the affordances of the medium (the wool) in order to continue within their sociocultural practice (the game). Once they figured out the best way to overcome this challenge they continued the game until the thread of wool was mostly unfolded and the

game ended. The case above, I argue, illustrates how cognition can be extended from the group of participants to the ball of wool and how the mind is socially distributed between the members of the group in order for them to communicate with each other and think through doing, within a sociocultural context (in this specific occasion, the game between the *WS I* group) in order to get an 'optimum grip'. Trimingham observes a similar outcome when working with autistic children in much the same performance conditions, describing the embeddedness of the objects on a social and cultural level as so strong so that 'individual consciousness and the extended mind become impossible to distinguish' (Trimingham 2013, p.240). The reason this happened though in the specific example was because of the focus on the simple game of throwing.

Participant A2 commented after the workshop that they were not skilled in drawing and painting and having to paint during the workshop was frustrating, especially when they compared their drawings to those of the people next to them, who they described as more skilled. Later they explained how they persisted with the materials (paper, watercolours, crayons, etc.) and 'focused' their mind on what they were doing, not listening to the surrounding voices, and eventually saw something emerge that they were happy with.

The idea of the novice is explored by Rietveld and Kieverstein, in relation to Gibson's reference to an 'education of attention', which crucially involves other practitioners who 'selectively introduce the novice to the right aspects of the environment and their affordances' (Rietveld and Kiverstein 2014, p.331). In the case of participant A2 from the example above, we see a reciprocal exchange, a sensorimotor coupling not only between them and

the materials (persistence to get the anticipated result versus resistance of the material) but also between them and the creations and materials of fellow participants within the sociocultural practice of *WS I* (in this case, comparing results; in other cases liking or not liking the ideas of others or appropriating the drawings of others). Participant A2 was introduced to the activity and was initially put off by their lack of skill; therefore, they were not able to get an 'optimal grip' of the situation. They were later guided by the skills of their co-participants and engaged and persisted with the task of drawing, wanting to overcome failure.

A2's intention was to subdue the difficulties of the novice by creating for themselves a manageable field of affordances from the materials (paper, watercolours, and crayons) in order to create an image they were happy with, so as to overcome their frustration and feel part of the group. What they did was to attune themselves with the group, establish a common ground with their fellow participants by fast-tracking their drawing skills. Because drawing was the medium of establishing a connection with the group and participant A2 was not willing to accept failure nor leave, they 'focused' as they said and progressed their skills in order to get a grip and overcome their tension.

Another way of getting an 'optimal grip' in *WS I* was the appropriation of designs, motifs, and/or images of others and so some shapes reoccurred during the workshop as seen on figures 27 and 28.

Figures 27 and 28. Contagious scenography. The image of an eye was a reoccurring one during *WS I*.

This kind of contagion of certain aspects of the participants' creations and of

the contagious ways the affordances of the mediums that were used in *WS I*

leads to the observation that in the specific workshop a 'contagious scenography' occurred in which certain responses to the affordances (ways of unfolding the thread, tying knots, cutting pieces of paper) and motifs (e.g. the image of an eye) gained popularity and were repeated (Fig. 27, 28). This 'contagious scenography' generated by the groundless co-relation of the participants to the affordances can be considered not only an ecological activity but also one that is socially distributed and embedded in the sociocultural practices of the group, and one that drove the system of *WS I*.

In his work *Theatrical Improvisation, Consciousness, and Cognition* (2013) Clayton Drinko argues (based on experiences of improvisers and recent experiments and findings of cognitive neuroscience, psychology, and philosophy) that improvisation 'is not just something that happens in the brain' (2013, p.108) but a co-originating activity between participants and their cultural expectations (such as the rules of the game). 'Successful improvisation can be contagious, and it is generally contingent on giving oneself over to the group, the group mind' (ibid.). He then goes on to explain about how a structure is essential for a successful improvisation and that 'embodying these improve guidelines can also lead to self-consciousness and deeper connections between people in other contexts' (ibid.).

This idea of 'embodying guidelines' is similar to what I explored in terms of how and if the embodiment of these 'guidelines' was achieved in *WS I* by fleshing out GWT. Assuming an 'ignorant scenographer's' role I provided, as the facilitator the design, some tools (such as materials, and cards with 'rules'); however, I did not ask the participants to join *my story* but to make *a story*, and here the idea of making is also taken literally as the participants were actively engaged with the production of a tangible artefact. What I

provided (wool, clay, tables, chairs, etc.) was familiar to the participants but did not impose a certain use; however, once the system scenography started to unfold, the system scenography itself began making some suggestions of how to use the materials through the co-participants' contagious actions and presence within *WS I*.

What was tested in *WS I* was how the individuals established connections through the materials and by engaging with their co-participants. My aim was to create a context-sensitive system that was not designed to function like a factory, for example, where the final product is of no or little interest to the person who places the bolt, but designed in such a way that each person who contributed to the 'central spotlight' was aware and interested of the impact their contribution could have to the overall result.

Looking at the data, one of the participants described the system as 'a machine or a factory, but a very inefficient one', while some others referred to it as 'a playground', a 'classroom', 'an outdoor space', and 'an arts and crafts community centre'. These characteristics belong to the 'scenographic contraption' of *WS I*, and point to the fact that the participants found some sort of structure in the activity, but mostly a structure like an educational setup, for example, that provided them with permission or freedom to fail. The important thing was to make something but it didn't matter what they made. Making became an extension of their communication with each other (Fig.29) and what they made became the material of observation in the workshop.
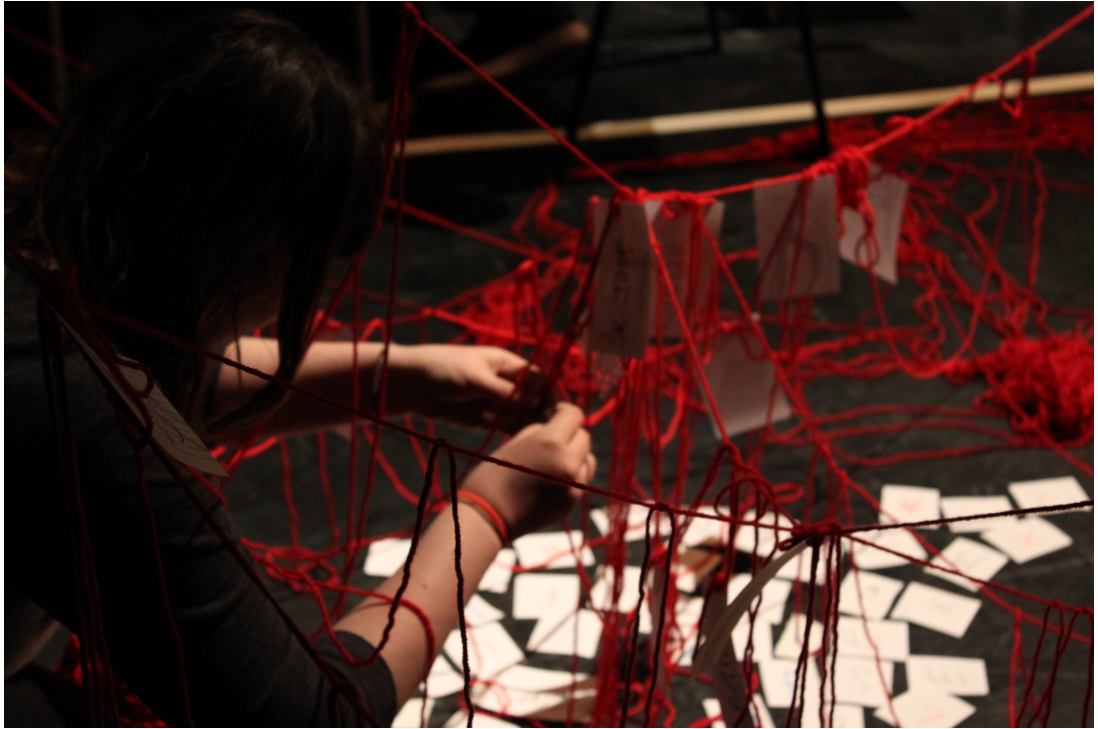
Figure 29. A scenographic artefact generated by a contagious scenography.

3.3 Interim Conclusions

The translation of GWT into a workshop brought forth, therefore, 'a contraption scenography': a closed, dynamic, scenographic architecture that continuously transforms through the participation of the people triggered by the affordances within the architecture, and gives rise to itself, until the show is put to an end by the workshop leader, or if all participants decide to leave (which was not the case in this specific experiment). The participants were the dynamic elements of the composition as long as they were in the space, whether they were engaged with the making or not. When they exited the door they stopped being a dynamic element of this composition. This is useful as an observation as one may say that the idea of a 'scenographic contraption' can be applied to proscenium arch spectating as well. What happens to the system occurs as a structural dynamic, depending on the

dynamic structure of its individual parts, including the participants, and it is not dependent on an outside intervention.

What was explored with *WS I* was the contextualisation of consciousness as a multimodal, non-linear, rhizomatic, non-hierarchical model of collective creation and the dynamic interactions between the participants, the environment, and materials. In this study I engaged in a creative dialogue with scenography and Baars' GWT of consciousness to develop a scenographic workshop. Using this cognitive architecture as a springboard I generated for my research a 'rich landscape of affordances', which I analysed using enactive and embodied views and approaches of Gibson's notion of affordances (Rietveld and Kiverstein 2014). Drawing on examples from *WS I* and the analysis of these examples with the help of frameworks such as the 'field and landscape of affordances' (Bruineberg and Rietveld 2014), by referring to three examples I have managed to 'untangle' as much as possible the 'scenographic landscape' (Shearing 2014) of *WS I* and provide some insights on the material and experiential nature of scenography with a specific audience. The materialisation of this workshop brought forward the insight of a contagious scenography, which is distributed between the workshop environment, the participants, and their co-participants, and generated a reflection on the idea of emancipation through trial and error for the acquisition of skills in relation to the 'ignorant scenographer'.

The 'intelligence' that comprised the system of *WS I* was generated by a set of simple rules of a game open to interpretation and appropriation by the collective of the participants. And so in *WS I*, I assumed the role of the (willingly) ignorant artist–researcher who presents to the unknown

participants materials that are not already processed into some form of artwork. This makes for a contraption-environment for the participants to unite or even conspire with their fellow audience members, working with materials and with their bodies (movement, speech) in order to make sense, based on the experience that they bring into the work. As a creator, on the other hand, I rely on them and depend on the unknown elements they will bring into the piece as a result of their agency.

The scenographer cannot enter the autonomous system that is an audience member, because a person is an operationally closed system, with self-organising processes; however, they can intervene in the environment of the audience, and by re-arranging the environment create a conversation with the audience about themselves, bringing them into a dialogue with 'speaking of today's man', as Eco suggests, by using themselves as material. In doing so, another element that needs to be taken into account is distributed cognition between the audience; again, this is not something that may be controlled, but it can be addressed. The above observation generated a number of new questions in relation to my research questions, including: How do I contextualise this distribution? How might metaphors of consciousness help me further design this distribution of the experience of the audience? How do I frame the experience of distributed design? How might radical embodied cognitive neuroscience and the more generally applied notions of encultured cognition contribute further to understanding the workings of dynamic distributed scenographic systems? *WS II* follows up on these questions.
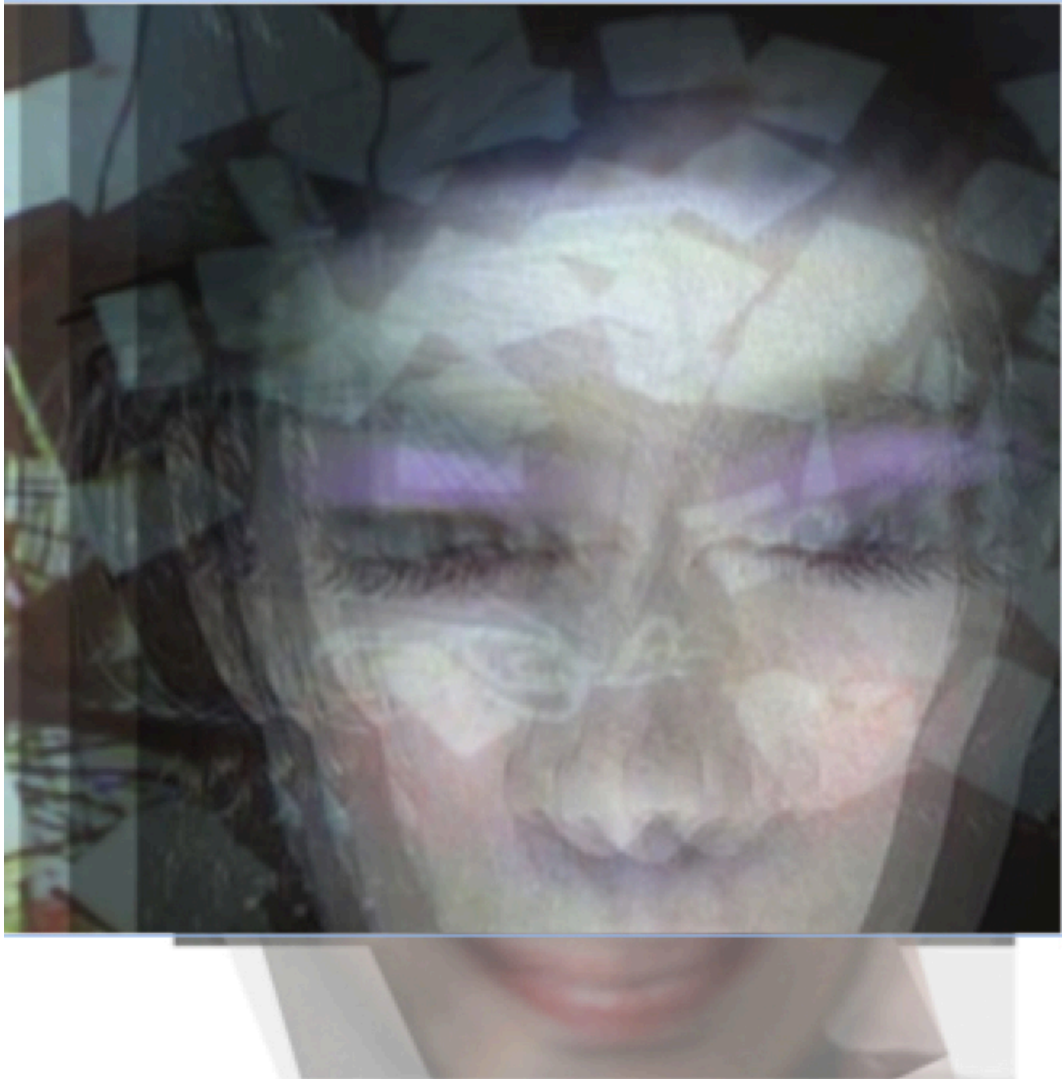
WORK SPACE II
IMMATERIAL

Chapter 4: *Work Space II*–Attempts on Margarita (Multiple Drafts)

4.1 Scenographic Contraptions (part 2): Tackling Groundlessness

Using the 'scenographic contraption' as a methodological tool I have engineered a practical approach as a means of developing new ways of making and navigating a 'groundless scenography' in a space that 'performs-rehearses'. For this I am fleshing out metaphorical notions of consciousness and perception, in order to generate participation. I have also conceptualised scenography '*as* contraption', to point out the compressed meaning of scenography that the audience need to untangle each in their own autonomous way, and have explored briefly how theorising scenographic 'participation as contraption' may facilitate a sense of understanding participation as communion between the participants in a space that simultaneously performs-rehearses. This communion entails intimacy, an exchange and sharing of feelings, thoughts and actions, on a reflective, spiritual or action-oriented manner, and it does not exclude tensions, or messiness for example.

In this section I will continue unpacking the methodological tool of 'scenographic contraption' and its underlying logic and aesthetics borrowing from the enactive cognition principle of 'structural coupling', and the insight of pursuing groundlessness, of going further into groundlessness with 'disciplined and genuine means' (Varela at al. 1991, p.253). I will explain why this is useful for scenography and my scenographic interpretation and

application of the enactivists' 'disciplined and genuine means'. I am drawing in this part from general insights generated through all the *Work Spaces*.

As already outlined, enactivists refer to structural coupling and the co-determination between animal and environment and claim that an enactment of world and mind is based on what the being can do or is able to perceive they can do based on its history (ibid. 1991, p.9), e.g. bees gather food from flowers and so need to recognise them from a distance. But if, for example, the bees recognised the flowers from a distance but when they got closer found that these flowers are plastic then they would have to adjust in this new world.

> One's behavior changes as one learns to cope with new conditions and situations. And, as one's actions change, so too does one's sense of the world (Varela et al. 1991, p.164).

Similarly the invisible 'instructions' as provided by the contraptions and used in the *Work Space*s constitute what I will call from now on the 'disciplined means' of 'contraption', which at an initial stage provide temptations and call for a certain level of skill or willing engagement from the part of the audience–participant. These are governed in a large part by affordances, prediction, and prediction error. For example, a pen and paper are provided, because the designer 'predicts' that an audience–participant will draw or write; the audience–participant accepts the invitation of the affordance of the pen and paper and draws. After recognising that the above invitation is working the designer goes on to evolve the affordances and creates a system where, for example, what is drawn by the audience is projected on a screen. The invisible 'instruction' provided by the initial affordance is present, yet another layer of affordance, that of the projection, is established in the

negotiating language between the audience–participant and the designer, when the former encounters the contraption-prop.

The above example demonstrates the constant negotiations between the agent and the designed environment, and the orchestration of this negotiation by the scenographer. I will refer to the artist–scenographer, in the case of designing groundless contraption-environments, as the 'processual designer', appropriating a term from White (2013) following Murray (1999), who refer to the creator in interactive gaming (Murray) and in interactive performance (White) as a 'procedural author'. I will add that a 'processual designer' is also 'Janus-faced', thinking about the space as performing-rehearsing, and thinking between material and immaterial. In the case of the *Work Spaces* the 'processual designer' (me) designs a 'disciplined' process, using the method of the scenographic contraption, which is itself an undisciplined notion, meaning that it does not follow the cookie-cutter idea of imposing a shape or having only one shape, but allows for more flexibility in creating top-down, bottom-up, and distributed interactions and interpretations from the part of the audience.

Gradually in this initially structurally determined, context-sensitive environment associations begin to take place and shape the development of the 'genuine means': the experience of the audiences' 'structural coupling' with the design. This happens through unwritten, invisible instructions that are afforded by the design. The language, which will successfully and constructively communicate between the two (artist–scenographer plus the artistic team, and the audience–participants), unfolds in layers, some of which are nuanced and invisible, so that the experience is not solely structural, but also bodily, emotive, and engaging the senses. This means

that the audience overall should not feel forced or over-stimulated, and not completely lost throughout the duration, as they may lose complete interest. In terms of scenography this is close to what Lotker and Gough refer to as 'invisible scenography' (2013, p.5), a scenography designed in the scenographer's mind and seen (experienced/felt) by the individual audience member's whole body (ibid.). Ideally, the audience believe that they have invented their own scenographic language when this happens, although this language has been suggested by their interaction with the design. Therefore, the invisible and subtle co-originating scenography makes them face themselves and their state in that moment and in relation to their co-audiences–participants and find the immaterial material in this condition (feelings, imagination, actions, senses, etc.) to generate the scenographic languaging, a language as a doing: the feelings, thoughts, and doings as they happen and not a representation of what we do or feel (Maturana 2011, p.149).

Such insights of a nuanced language appear gradually, and this was mostly the case *during* each *Work Space*. From the part of the artist–scenographer–researcher, these insights were captured and developed as an ongoing way of working *with* the contraptions and by observing their interaction with the audience–participants. After each presentation of the work, some parts of the scenographic contraption were simplified, producing nuanced, and subtle aesthetics, while new contraptions took form in a less subtle, and in some cases, primitive stage. These were then developed, after I had received the 'embodied feedback' from the audience–participants' interaction (through observation and footage) creating gradually more connections or different approaches between the layered subtle and

primitive nuances in the following *WorkSpace.* The artist–scenographer therefore never stops working within the world, while the artist–scenographer–researcher also takes a critical step on the process and is writing what they have found out here in this thesis.

Following Harpin and Nicholson (2017), I argue that navigating the space in an inventive though inefficient way turns participation less into an action and more into an encounter and a perception. This encounter entails the co-audiences, and also the audience–participants reflecting on themselves, while the idea of participation as perception is very useful in this occasion, because perception and consciousness are understood as contraptions in contemporary cognitive science: an event-invention, a performance-rehearsal, a brainweb, an ambiguous event.

Therefore I suggest that our understanding of the 'disciplined means' of the contraption in such a design approach may be reached by the artist–scenographer–researcher (me, in the case of the *WorkSpaces*) through identifying and reflecting spatially on the inner logic of contemporary structural-conceptual metaphors of shifting architectures in current abstract structural thinking related to inventive processes, ambiguity, etc. (i.e. as in the case of this study metaphors of consciousness, perception, or living systems). Other examples of abstract notions would be the rhizome, the internet, democracy, the experience of an abstract work of art such as a painting, a song, a philosophical idea, a notion, a person, and information systems, etc.

In his critique *The Nightmare of Participation*, architect, curator, and thinker Markus Miessen states that it is necessary to separate oneself from using magic buzz-words such as 'sustainability, participation, democracy' as

billpostings and that 'one must tackle their underlying motives through contextualized practice' (2010, p.242). This is what I am attempting in my *Work Spaces* with the 'contraption' to contextualise in an embodied and ecological scenographic manner the process, ambiguity, and dynamics of the stories of consciousness and perception as a response to what I argue is the current contraption climate. The insights stemming from this understanding can help incorporate process aesthetics within a performance and help us understand better the dynamics of the 'invisible but decisive' nature (Lotker 2015, p.13) of scenography and aim to contribute to the overlapping 'nuanced language' (Bishop 2012) of contemporary participatory art. I argue that 4E cognitive science, and the embodied materiality entailed in metaphors used for consciousness, can help to contextualise this invisible but decisive nature of scenography, and in this chapter I am showing how. I will also address the questions that occurred from *WS I* regarding the specific aspect of distribution.

Maturana uses the analogy of living beings as happenings (2011, p.146). This is a very apt term to use for the audience–participants who navigate a space which performs-rehearses, and who are themselves performing-rehearsing. If living beings are happenings and, if we follow this up, then the combinations between networks of happenings may not lead to an idea of montage as fragmentation, or piecing things together, but a network-in-action. And because these ways are not tried enough, the results are an ongoing mediation of reality and of the self, and can lead to some sort of rhythm, a rhythm of groundlessness maybe, which at times has its cacophonies. What this is was explored in *WS II*, which attempted to contextualise this rhythm of self as a scenographic network-in-action

borrowing from participants' stories, and voices and cognitive theories of consciousness as a process, 'patterns of practice' (Roepstorff et al. 2010, following Bourdieu 1990) and 'cultural affordances' (Ramstead et al.).

4.2 *WS II* : An Outline

I will go on to outline the 'what' and 'how' of *WS II* and will later return to the 'why'. *WS II – Attempts on Margarita (multiple drafts)* was a three-hour durational performance installation. With this piece of practice I explored how the empirical hypothesis of consciousness, like the ones of Dennett (1991), Edelman and Tononi (2000), and Tononi (2004), might be employed and applied imaginatively as a method for creating dynamic and distributed scenographic systems. As already stated, I am not making empirical claims on how consciousness works but I am tackling groundlessness by contextualising through practice consciousness, as suggested by these connectionist metaphors.

📹 (Please watch now the video *WS II*.mov/avi., 7min, in the folder *WS II*).

The installation took place at Stage One (stage@leeds), University of Leeds, on 26 February 2015 as part of the Little Leeds Fringe Festival 2015. Stage One is a studio theatre (black box) with theatre lighting and sound facilities. For the purpose of documentation the central part of the installation (the tubes, Fig. 32) was recorded from above the grid using a video camera. I used a still camera from the balcony to document the installation, and I also took some photographs from the ground level. Participanting artists also took stills which they later shared with me; the overall sound was recorded and sound recordings from the individual parts of the installation are also kept in the project's archive (these can be accessed on request). There was a post-

show discussion between me and the participanting artists which was recorded (USB, *WS II*, Folder 2).

The key players were me (the principal investigator), artists–collaborators, the audience–participants (mostly students attending the Little Leeds Fringe Festival 2015 and members of staff at University of Leeds). I took up the role of 'dialogic facilitator' (Blaikie 2000, p.52) so during the event I was situated mostly on the balcony of the black-box theatre in order to observe and to coordinate the show, making sure the participating artists were on track with their cues and were made aware of any changes. The methods I used for collecting data were photography, voice recording, some video and feedback questionnaires (for access to the above material you may refer to the USB *WS II*, Folder 3). My analysis is based on the use of the above qualitative data collected during the performance and on the post-show interview discussion.

The piece draws its structure and makes a reference in the title to Martin Crimp's post-dramatic work *Attempts on her Life* (1997) and from cognitive theories of consciousness and perception (as mentioned earlier) in order to create a multi-layered dramaturgy called 'Margarita' in the form of an installation. The name 'Margarita' entered this project from previous work from the *aswespeakproject*, where it was chosen for its multiplicity (as it could be a person's name, a drink, a pizza, an island, a flower, etc.). The piece was durational based on recordings, live performance and individual scenographic contraptions, and it was generated by the contributing artists, the audience–participants who were free to enter and exit as they wished (Participants B), and other participants who recorded their voice in advance (Participants A). The sound of the installation consisted of eleven chapters,

which corresponded to various characteristics of Margarita and formed the Margarita experience:

Figure 31. The score for *WS II*

The score I devised above outlines the overall sound-chapters of the installation, heard inside the theatre at stage@leeds. There were no instructions or guidance but a range of sonic, visual, kinetic, and haptic affordances, which will be analysed further below, and possibilities of experience.

Participants A contributed with their voices to the overall sound score of the installation; they were sent a questionnaire and were asked to record their answers to questions as can be seen on Appendix B1. These were my friends/ colleagues/acquaintances and were asked to respond to the questions in relation to themselves but using the third person. Male voices were asked to talk about a female person they know well. In the case of Participants A, the recordings took place in private and then the sound files were sent to the sound designer and me.

This strategy created an emotionally rich landscape of sonic affordances, which was at times uncomfortable to listen to, due to the intimate confessions from some of the participants. One of the project's objectives was to create a tension between the audience and the scenographic environment, but the intention on this occasion was for this to be achieved in a subtle way, not to shock or monopolise the audience–participants' interest. Therefore, the more intimate recordings were kept inside the container-contraptions (like in Fig. 32 below), rather than being broadcast to the whole space, and the audience–participants were free to use headphones found at designated areas in the space, inside some of the contraptions, and to listen to these privately.

Figure 32. Hidden speakers, and headphones inside the individual contraptions, allowed for the audience–participants to listen to more intimate recordings.

During the installation there were also live-stream voices broadcasted of random passers-by in the café of Leeds University campus (Participants C)

answering to questions in response to the script and asked by two participant-artists of the project, Alaena Turner and Esther Collins. Participants C were also asked to take a photograph using the production's mobile phone, and these images were projected into the main performance space. Both the overall sound and the incoming recordings were controlled live by sound designer Ben Eyes following the time-score (Fig. 31). Lighting designer Katherine Graham controlled the lights ad hoc, creating 'scenographic light' (Graham 2016, p.74). Indeed the understanding of light in *WS II* was perceived as 'an active contributor to the complex processes of meaning-making' (ibid.) acknowledging its ability to 'shift between moods' (ibid. p.77). Every fifteen minutes or so, performer Olivia Bradbury was given a signal by me to perform a song (the same each time) using loops.

Figure 33. *WS II – Attempts on Margarita (Multiple Drafts).* Olivia Bradbury performing her song. Photograph by Lucy Steggals.

Figure 34. Lucy Steggals made an intervention bringing her own personal objects, her grandmother's box of buttons. This was an uncanny coincidence with Christopher Baugh's arrangement of his mother's buttons to communicate the uniqueness of each scenography: 'the pile of buttons gave me hours of pleasure' (p.xiv), 'there will be no final archive, no final arrangement of buttons' (p.xv).

Artist Lucy Steggals made an intervention using a set of personal objects (Fig. 34). Jennifer Carlberg, an associate of the project from the School of Media and Communication (University of Leeds), typed different drafts of Margarita chapters by mixing pre-written transcripts of the recordings with what was being broadcasted during the show (Fig. 35).

Figure 35. Jennifer Carlberg typing the multiple drafts.

In the second part of Cycle Two, a group of first-year undergraduate performance students (under the co-ordination of Dr Maria Kapsali) entered the space and improvised a set of actions while inviting the audience–participants in one-to-one discussions about experiences of unpleasant jobs.

Figure 36. First-year performance students improvising a live score during *WS II*

4. 3 From a scenographic system network to a scenographic system network-in-action

Margarita is not a character. Margarita is a pile of constantly changing drafts ready to be revised, retold, forgotten, erased··· Can we keep Margarita going?
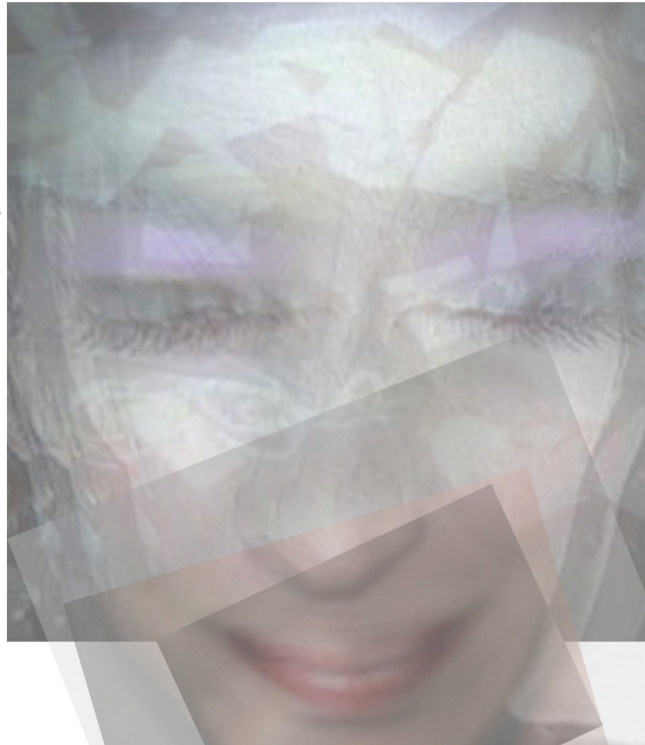
This interactive performance installation asks for the audience's participation in constructing a collective consciousness 'Margarita'

www.aswespeakproject.org

Figure 37. *WS II–Attempts on Margarita (Multiple Drafts)*. Flyer. Back side.

In answering my second research sub-question, related to how might we use empirical metaphorical models of consciousness as creative methods, I will outline below how the suggested architectures and hypothesis of consciousness that I used for scaffolding participation in *WS II* proved a useful device for generating dynamic and reflective exchange between the audience–participants, the artists–collaborators, the environment and the practitioner–researcher (me) in a distributed manner.

My role was to orchestrate the dynamics of a groundless scenography with as little intervention on my part as possible during the show, so as to test the 'invisible scenography' and the distributed experience of the audience–participants as mentioned earlier. During the post-show discussion I expressed my intention by describing it as the 'how-do-you-accommodate-this kind of energy'. B5 (participant) in response to my remark referring to the space said that 'it was accommodating but in a very smooth way established a kind of, I would almost dare to say, ethics […] that this is the type of behaviour, this is the type of being you can practice in here.' This notion of spatial ethics in informing the contraption idea is a pertinent one as the aim of *WS II* was to produce critical embodiment and ecological intelligence without the necessity of explaining or explicitly guiding the process both with the artist-participants and the audience–participants. At the same time the scenography needed to maintain a top-down 'discipline' or 'ethics' as mentioned so that the audience–participants would not fail to register the scenography all together.

Dennett's theory, together with the structure of Crimp's *Attempts on Her Life* (1997), triggered the idea of the Margarita experience and the sonic collage of the different voices and chapters. Initial imaginative points of reference were found between Dennett's hypothesis of consciousness and Crimp's 'she' as multiple drafts. As outlined earlier, Dennett's 'multiple drafts' model understands consciousness as 'narrative fragments' at various stages of editing in various places in the brain (Dennett 1991, p.113).

Dennett later uses the example of the 'fame in the brain' or 'cerebral celebrity' (1996) and also describes consciousness more like political influence or clout (Dennett 2001). He wants to show that in consciousness

there isn't 'a clear threshold of entry and sequence of events', but like fame it is a complex and competitive phenomenon (Dennett 1991, p.28). One might be famous one moment and then something more important occurs and they lose their fame. In terms of the clout example, processes compete and the one with the greatest clout will dominate the scene until a stronger process dominates the scene and so on. Dennett argues that our brains are 'more democratic, indeed somehow anarchic' (Dennett 2001, p.225). An explicit clout example during *WS II* was that of the song: each time Olivia performed her song, as B2 observed during the post-show talk, 'everyone's attention then went that way', stating how a bidirectional relationship was established without the need of formal instructions.

Figure 38. Olivia Bradbury performs her song. An audience–participant is in at the same space as Olivia, behind the scrim, playing with the buttons. The button action is projected live on the screen. An audience–participant watches the scenography generated.

The idea of 'clout' is also expressed in the 'dynamic core hypothesis' by Edelman and Tononi (2000), who suggest that the metaphor to use would be closer to a riotous parliament trying to make a decision not by 'persuasive

rhetoric but by simply pushing and pulling' (Edelman and Tononi 2000, p.245). They assert through empirical studies that consciousness is a process, not a thing or a place, and that it 'is defined in terms of neural interactions, rather than in terms of specific neural location, connectivity, or activity' (Edelman and Tononi 2000, p.144). Edelman and Tononi argue that, although they agree with Baars (see *WS I*) on the global aspect of consciousness, they disagree on the actor hypothesis (the spotlight of attention). For them the information is not in the message, but in the number of system states that can be brought about by global interactions within the system itself (ibid. p.245).

The element I am drawing upon conceptually is the idea that the 'information is not in the message, but in the number of system states' and the interactions within the whole system. This was reflected in the design of *WS II* in which, unlike *WS I*, there was not a spotlight of attention, and more than one projection. What the system aimed to communicate was more or less similar to the thought: I don't have a specific story to offer to the audience–participants (a pronouncement) but instead a critical ecology of different stations in the installation, suggestions for interaction, reflection, and the creation of various emotions, feelings that the voices generate for the audience's experience. In short, it is more like I was saying to the audience: Here are some attempts my invited artists and I made to capture 'Margarita'. Who or what is Margarita for you? Could you attempt to capture Margarita?

The voice recordings that took place in advance (Participants A) were based on simple questions, and this simplicity of having to elaborate on one's own, on a question in front of a recorder invited the speaker to expand to

describing other states about themselves[5]. For example, on answering the question 'What does she look like?', one of the participants answered, 'She has green eyes and they become grey when she cries', revealing information that wasn't asked, but provided me, the sound designer, and the audience–participants in the installation with rich emotional material to work with and respond to. As one of the participants (B3) put it: 'The tone of their voices was intimate and open and that gave huge quality to the space.' Another system state of multiple interpretations was the number of transcripts that were printed throughout the three-hour show and placed on the floor as part of the experience (Fig. 39).
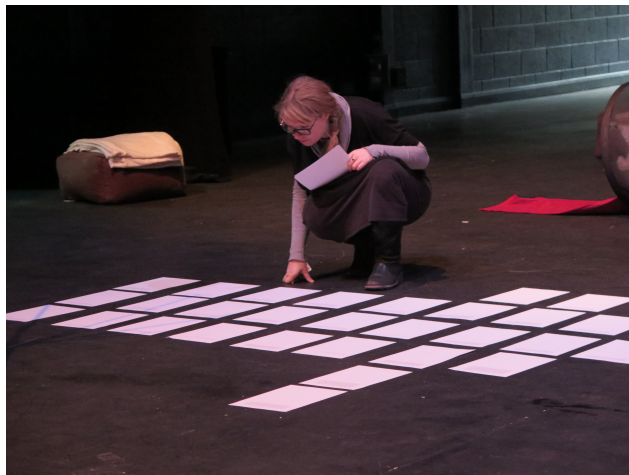
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Figure 39 (above). *WS II - Attempts on Margarita (multiple drafts),* 26 February 2015, stage@Leeds. Audience-–articipant reading the various multiple drafts of Margarita produced during the performance. Photograph by Lucy Steggals.

Figure 40 (below). A still image from *Synecdoche, New York* (2008) a postmodern film based on the blurring between reality and theatre. This image was used to communicate the idea of the multiple drafts to the artists-–participants.

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[5] There was an experiment in AI called Eliza, led by Joseph Weizenbaum at MIT in the 1960s. Eliza simulates a Rogerian psychotherapist, and you can ask her questions about your problems, anxieties etc. The insight that this program brought forward is that despite people knowing that this is an AI system, and not really giving any answers, it was very successful in having users talk about themselves. You can try it here: http://psych.fullerton.edu/mbirnbaum/psych101/Eliza.htm.

Tononi explains that 'the integration of information in conscious experience is evident phenomenologically' (2004), arguing that when someone sees an image they experience it as an integrated whole of which the components cannot be experienced separately. For example, when someone sees a red ball they don't experience the colour and the shape independently. This phenomenological understanding is what Lucy Steggals tried to verbalise at the post-show discussion regarding her experience of seeing the projection of the buttons on the screen and thinking of how she could make this into a film. In the image below, this experience has been captured in the speech-bubble. It is an example of a montage-contraption moment (Fig. 41 below), when one sees something complex and tries to unravel its complexity, thereby entering into a conversation with the work:
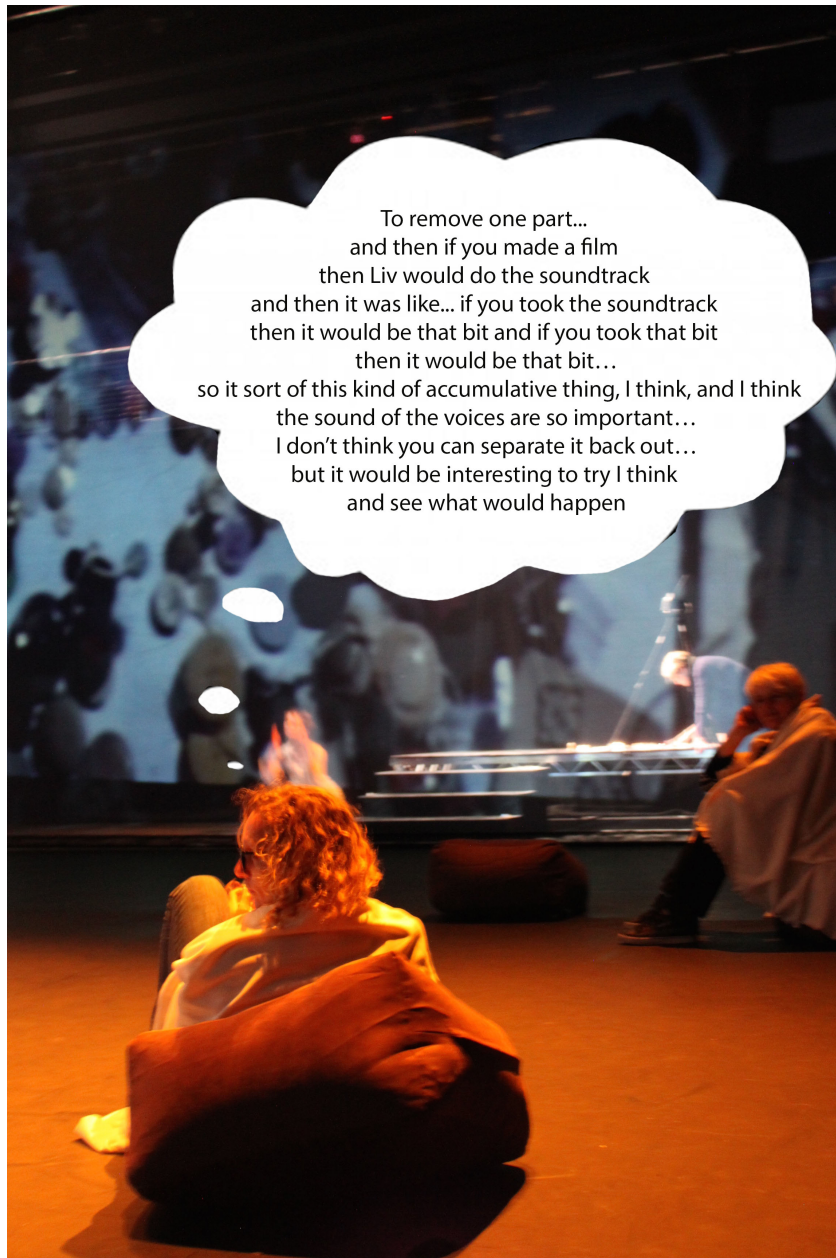
Figure 41. *WS II–Attempts on Margarita (multiple drafts)*, 26 February 2015, stage@leeds. Speech bubble added using material from the post-show discussion transcript. According to the 'multiple drafts' model, 'all varieties of perception –indeed, all varieties of thought or mental activity– are accomplished in the brain by parallel, multitrack processes of interpretation and elaboration of sensory inputs. Information entering the nervous system is under continuous "editorial revision"' (Dennett 1991, p.111).

However, the speech bubble as shown on Fig. 41 is Cartesian[6] because it contains only one thought, unlike *The New Yorker* example (Fig. 42) that Dennett uses (see caption Fig. 42), and this indicated to me how ingrained the notion of this dual understanding is, which took me a while to realise.

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Figure 42. Saul Steinberg's *New Yorker* cover from 8 October 1969 is used by Dennett in his lectures as a 'successful image of human consciousness' (1996) because, according to Dennett it contains words, shapes, colours and communicates an experience where there is not an area where it all comes together.

Dennett provides an analogy to explain how consciousness is constructed as 'an artefact of our immersion in human culture' (1998, p.346). Margarita was an artefact of immersion, an en-spaced consciousness, that was triggered by materials, objects, bodies, and the shifting, sharing, contradicting cultural traits of participant groups A, B, and C, the artists–participants, and me. This is indeed something that can also be argued of Dennett's own conscious attempt to explain consciousness: as a draft, as fame, as clout, or by referring to the above illustration; it is evident that the

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[6] Special mention here to Chris Fite-Wassilak for pointing this out in his book *Ha-Ha Crystal* (2016).

stories hidden behind the metaphors that Dennett is using are due to his personal immersion in his contemporary culture, i.e. the multiple drafts metaphor relates to a postmodern view. Furthermore, my cultural references led me to the connection between the multiple drafts metaphor and Martin Crimp's *Attempts on Her Life*, establishing a dialogue with Dennett's understandings, and sharing this with the audience–participants. Di Benedetto observes that 'artists direct our attention so that they may achieve a result. How we interpret that result is dependent upon our own willingness to participate in the experience' (2010, p.196) and our willingness in turn is fuelled by other factors, such as cultural ones.

4.4 Applications of Cultural Affordances in *WS II*

The distributed scenographic system network I imaginatively devised, when shared with the artists–participants and with participant groups A, B, and C became a scenographic system network-in-action, what Roepstorff et al. call 'networks that extend in relevant ways in social interaction' (2010, p.1056). In this section I am applying integrative cognitive frameworks of cultural affordances and patterned practices for the analysis of the network-in-action that was the scenography of Margarita. The main advantage of both of the frameworks that will be used here is that they approach culture as a dynamic, contemporary, interacting system of individuals, rather than an independent element related only to factors such as nationality or native language, and therefore make for frameworks useful for the analysis of contemporary systems networks-in-action including humanly constructed and designed 'rich landscapes of affordances' (Ritveld and Kiverstein 2014). The 'culture as patterned practices' framework stemming from sociology and

anthropology sees cognition as distributed; it is used in neuroscience for the study of human behaviour, and it is related to attentional practices. The framework deals with the particular patterns that characterise human practices; studies show that these practices resonate in the brain i.e. regular, patterned activities (such as speaking) 'shape the human mind and body through embodiment, and internalization' (Roepstorff et al. 2010, p.1052). There is therefore a bidirectional understanding between brain and world, where the world we shape shapes us in return. This is particularly useful for this research when looking at the questions of how can scenography make us or shape us.

'We live in a landscape of cultural affordances' write Ramstead, Veissière, and Kirmayer (2016, p. 13). Cultural affordances (Ramstead et al. 2016) are the affordances found in the niches (the landscapes of affordances) that people are part of, and are justified with the use of patterned practices (see above) and predictive processing (Clark 2013b). This understanding creates a continuum with the expanded notion of affordances following enactivist, radical embodied, and ecological understanding (i.e. skilled intentionality, landscape, and field of affordances) as referred to in *WS I* (Rietveld and Kiverstein 2014; Bruineberg and Rietveld 2014), but accepts a mild neural-computational approach of the human system in order to explain the coupling with shared social representations.

Ramstead et al. distinguish between two groups of cultural affordances: 'natural' and 'conventional'; the first group refers to the detection and engagement of the individual with the possibilities of action that their environment affords, in relation to their set of natural abilities, i.e. given that a person has two feet and can walk 'an unpaved road affords a trek' (ibid.,

p.3), and 'conventional' – the detection of the possibilities of action of the individual that are related to 'culturally specific set of expectations of which they are immersed' and are related to how the individuals interpret these in relation to 'other agents and the symbolically and linguistically mediated social world', e.g. 'a red light affords stopping' (ibid.). Both of these types 'are related to understanding human social niches' (ibid.) such as the designer niches (contraptions) found in the Margarita ecosystem, and Margarita as a contraption environment itself.

Based on the post-show interview and my observations from the data of *WS II* in this part of the thesis I am tackling the questions: What are the implications of cultural affordances and patterns of practice in scenographic reception and making processes? And in what ways might we use these to investigate the audience's experience of dynamic scenographic systems-in-action? I am continuing to contribute to the questions that occurred after *WS I* on finding out how might I frame the experience of distributed design, in pursuing further the disciplined and genuine means of the scenographic contraption.

4.4.1 Disciplined means of the scenographic contraption: preparing the scenographic system network for action

Unlike *WS I* the audience–participants during *WS II* were not invited into a hands-on making game; instead they were invited into a 'designer environment' (Clark 2015a) to re-arrange or to co-construct their fields of affordances, using 'immaterial'. Specifically they were invited to perform-rehearse how their bodies behaved in relation to the space, the sound, the props, and the bodies of other participants, and how the awareness of their own image was craftily manipulated by them in order to contribute to the

tapestry of the piece. As audience–participant B3 said: 'It got richer. It was like a tapestry that created the group.'
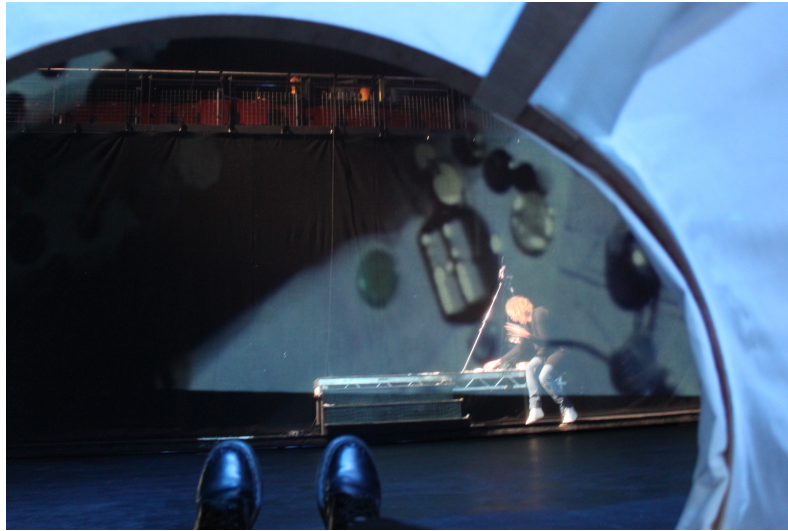
Figure 43. Inside the tunnel. Listening to the travels of Margarita and watching an audience–participant play with the buttons, while their action is projected on the scrim.

These rich landscapes of affordances for the audience–participants were elaborately scaffolded by the processual designer (me) plus the artistic team using a non-binary 'Janus-faced' understanding of the relation between material and immaterial, and the space performing-rehearsing. For example, immaterial affordances of the multi-layered surround sound were used for designing the 'disciplined means' and a number of contraption-props, made from found or bought objects, for the material affordances. Light was a powerful element, with the lighting designer orchestrating atmospheres ad hoc (but there is not enough space to reflect further on the contribution of light this time) . By providing these 'disciplined means' we designed an enfold-unfold-ready 'contraption environment' waiting to be structurally coupled with the 'genuine means' that the audience–participants would bring.

In terms of the 'contraption-props', I made or sourced very simple ones, such as the tepee, for example, using basic materials (wool, fabric, thin plywood), and basic building skills (sticking, stapling, sewing, cable-tying) rather than

creating heavy sets. This was done in order to create a further layer of 'conventional affordances' of familiarity and ephemerality. I hand crafted for the audience–participants what I call 'handmade landscapes of affordances' within the Margarita ecosystem (the tunnels, the uncanny hat – see Figs. 43 and 47).

For this reason the construction of the contraption-props was developed gradually through reflecting and trying out the possibilities of the affordances of the props in the studio (Figs. 44 and 45), rather than designing them in advance and handing the designs to a builder. Trying in this way to afford familiarity and ephemerality with the work was related to the contraption idea as something that does not hide the process and therefore exposes the maker – more like a mock-up rather than a final slick product, engaged in a dialectical relation between the contraption-prop, its maker, and the audience–participants when they encountered it and tried to unravel its meaning and use. As one of the audience–participants told me after the show, it was liberating that the props had this flimsy, handmade element to them, as it eliminated the barrier of formality and made for being playful in/with them. They became more accessible for the specific person (B4), because of this handmade, ephemeral feel, and more inviting as a result, like saying: 'Touch me' instead of 'Don't touch'. Furthermore this type of handmade construction would not have been seen as rough if lit on a proscenium stage, for example, and experienced from a far away, but it became exposed by being experienced from a close distance. This corroborates the understanding of a process aesthetics of the scenographic contraption idea as being experienced raw rather than looked at as an illusion.

Figure 44 (left) The processual designer imagining-predicting, improvising, and constructing the props in the studio.
Figure 45 (right) Ben Eyes (sound designer) trying the affordances of the tubes. The contraption-props in *WS II* were built organically through doing-thinking, rather than drafted on paper and constructed by a builder.

The affordances I wanted to develop were very simple and related to the structural notion of the container inviting thus the participants to *cover* themselves (blankets), *enter into* (tunnels, behind scrim, tepee) or to hide their heads (uncanny hat), or the top part of their bodies (tunnels) (Figs. 41, 46, 45 and 47). What was taken into account in the designing-making was also the image of the part of the audience's bodies that were exposed as part of the prop, creating a live-sculpture contraption, half prop, half human (Figs. 46, and 47) for others to watch. This elevated the dialectical relation between prop, artist–scenographer, and audience–participant to be also an agentive and co-authored one, because apart from unravelling the perceived meaning by looking at the landscape of affordances and pointing out the

salient field of affordances offered by the contraptions, sound etc. the audience–participants also made meaning using their own agency to immerse in this field. They then created further meaning for the audience–participants who were watching (what I earlier described as performing-rehearsing) by becoming part of a live-sculpture contraption, changing thus the field of affordances both for themselves and for their co-audience–participants (see Fig. 46 and caption). B5 observed that it made her think about the 'theatre being historically the place to see and to be seen' and continuing their line of thought regarding the ethics established by the design they said, 'This was what was very interesting that we started to look at each other.'

Ramstead et al. claim that:

> The sets of expectations embodied and enacted by organisms change the field of affordances. This mechanism, we submit, is exploited by culture in the acquisition of cultural affordances (2016, p.15).

The set of expectations on entering the tepee was embodied and enacted by the audience–participant below (Fig. 46), while another audience–participant that may have been looking had their field of affordances also altered (e.g. triggering them to go ahead and try out entering the tepee as well). The artist–scenographer intuitively knows how to exploit this shift of attention, and with this analysis I aim to shed some light on how this is done, and move from intuition to knowledge.
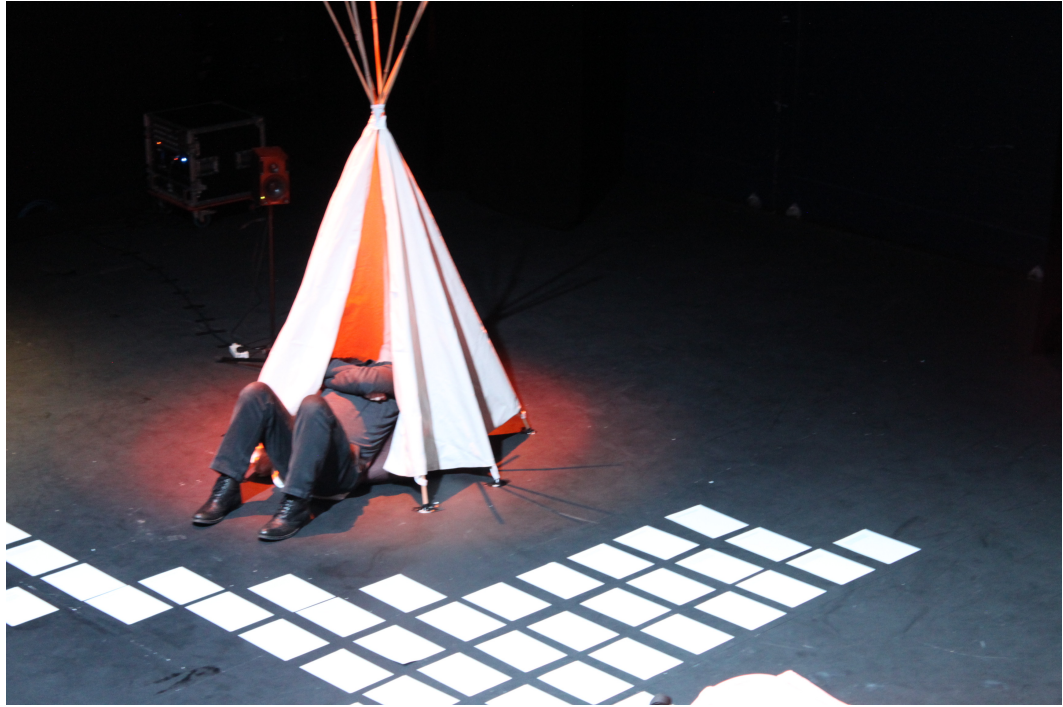
Figure 46 (above): The tepee contraption with multiple drafts on the floor.
Figure 47 (below): The 'uncanny hat'.
Live sculptures, assemblages of bodies and props were created in the space. These 'live sculptures' were co-authored by the scenographer who provided the prop and the audience–participant who accepted the invitation. The audience–participants detected the field of affordances and situated themselves according to their skilled intentionality.

Affordances have the capacity of being 'descriptive' on one hand because they constitute that which is perceived, as outlined with the examples above,

and 'prescriptive' on the other hand (Ramstead et al. 2016, p.5) 'because they specify the kinds of action and perception that are available, situationally appropriate and, in the case of social niches, expected by others' (ibid., p.5). In terms of their prescriptive role this is very much in line with what the theory of scenographic contraption aims to achieve through the 'disciplined and genuine' means of designing groundlessness in performance: to specify to the audience–participant the types of action and perception that are available but without making pronouncements, so as to generate a multiple unfolding and enfolding situation. Without using rules the 'natural' cultural affordances of the Margarita niche (landscape of affordances) offered to the audience–participants the possibilities to exist in the space in three levels – lie, sit, stand – and further 'natural' affordances were detected: hide your head, read, pick up, touch, listen, watch, etc.

In turn this scenography can be navigated in a disciplined and genuine way from the part of the audience–participants. For example, B5 argued (continuing from a quote earlier related to the ethics of the space) that:

> *We looked at what other people were doing but we were contained within what the space and the various materials…so I think we were guided up to an extend that perhaps because the guiding was quite smooth and subtle maybe we feel oh! We are actually you know anyone could do anything but no I think actually the installation kind of you know gently but very assertively implied a sense of being in it.*

The above audience–participant's observation was similar to my observation during the installation of the prescriptive character (the disciplined means I am aiming for) of the social niches that were developed for Margarita. I first noted the impact that this setup brought forward in comparison to *WS I*: the audience–participants were not talking with each other in the same way as in *WS I*; they were now moving around the space and engaging with the

dynamics of the installation in a playful but at the same time solemn manner by attuning their awareness to listen to the surrounding voice-collage of Margarita and to the actions of their fellow audience. This was enhanced spatially by the black-box architecture of a theatre space (another prescriptive affordance), which specified a certain way of behaving.

The result of the prescriptions of the affordances during the particular installation was playful; however, the audience's way of navigating the space could be compared with that of a person entering a space of ritual: the audience–participants entered the space engaging with the prescriptive affordances required by the sociocultural situation. Knowing that they were allowed to talk but not loudly, they explored their surroundings and looked out for initiated members, the audience–participants who were already there, so as to find out what they were supposed to do and how they were supposed to behave.

Several participants referred to the groundless language and languaging that happened in the space as meditative, transcendental, and relaxed, a reflective space – while for another '*it was a very indulgent thing, I am not sure that I find it meditative I just find it […] a space I can call my own and take up invitation from…*' (B4). In terms of designing the scenography system network-in-action with the art team my intention as a processual designer was to achieve a subtle playground for adults, a free space where one would feel comfortable to move, be seen, retreat or hide at their own pace if they wished, while listening to the soundscape of the different voices of Margarita. Taking into account that not every audience member navigates their environment in the same way, the idea behind the use of contraptions in *Work Space II* was to offer a number of stimuli, in some cases unusual or

strange, so that the audience–participants were invited to use their agency and bring into the space their own discursive way of engaging between material-immaterial.

4.4.2 'Genuine means' of the 'scenographic contraption': how much can I improvise here (given what the local cues tell me about what others expect)?

In order to generate the 'genuine means' from the audience–participants the installation exploited the idea of a social niche and provided a set of cultural affordances on the interplay between feeling comfortable and uncomfortable: some of these unusual (or unusually situated in the space) constructions were designed in a way so as to make the user feel comfortable, like the cushions and blankets and the tepee for example, while others triggered a sense of tension by seeming unfamiliar like the elevated 'clown hat', for example (Fig. 47), aiming to create *tensions* between the structural coupling of the audience, the semi-familiar environment, the audience's Know-How (common sense) and embodied expectation, and the tension that an unexpected or unknown affordance might bring. As B10 said in a written communication after the show in relation to the 'clown shoes': 'They are such strong signifiers of strangeness and fear, punishment, ridicule. Although I wanted to hear the funny stories I didn't put the shoes on.'

Another audience–participant went one step further in putting on the clown shoes:

> B6: […] *and then I decided to try them on I wanted to walk around in them as well but I thought I shouldn't because I thought this would be too attention seeking… (laughter) you know, well I though they will make a noise and I thought that might be intrusive for other people*.

What B10 and B6 say above situates the 'prescription' offered by the affordance within a social niche (the expectations of others within the niche). Ramstead et al argue aptly that '*humans behave according to the way they expect others to expect them to behave* in a given situation' (Ramstead et al, 2016 p.5, italics in original). Therefore, the conventional affordances such as the one communicated by B6 (walking in the clown shoes) were bound by explicit and implicit social conventions (ibid., p.6), and B6 further inferred the intentional states of other individuals in the niche.

What B6 described that they experienced points us to another element of sociocultural experience and cultural affordances related to the 'notion of *variation* and improvisation in action' (Ramstead et al. 2016, p.6). This notion outlines that the response of an individual within a convention e.g. in the specific scenario putting on the clown shoes and walking in them, is a complex one. So it is not as if B6 might have said, 'What would others think if I put the clown shoes on?', but entails from the part of the individual various negotiations, resistances, and emotions (explicit and implicit) to 'infer the intentional states of other agents' (ibid. p.6). Therefore what B6 said can be put down to the complexity of: 'How much can I improvise here, given what the local cues tell me about what others expect?' (ibid. p.6). In addition, the specific example is a complex (yet simple) web of affordances: descriptive and natural (wearing the clown shoes, registering the noise they make), prescriptive (wearing the clown shoes imposes a certain way of being), conventional (how much can I improvise with the affordances of the clown shoes, given what I implicitly detect from the cultural affordances in the specific sociocultural niche, that will make my improvisation acceptable by the social niche I am in?).

Therefore, in the social ecosystem of Margarita within the various landscapes of affordances, what drove the system forward was in big part (embodied brain) *inference,* whereas in *WS I* what drove the system was *contagion*. It was what the audience–participants inferred explicitly and implicitly they should be doing under the watchful eye of the other audience–participants within a space performing-rehearsing. This varied depending on the person (because each audience–participant is different). For example, a type of contraption-props invited the audience–participants to enter a comfortable zone only to challenge this sense of comfort at a later stage: the tunnels (Fig. 32) invited people to lie inside them but by doing so the audience–participant had to share the same head cushion with another audience–participant. This situation was considered challenging for some, like one of the audience–participants admitted later: '*I wasn't brave enough to put my head on the shared pillow*' (B10) or a 'lovely invitation' for another audience–participant who said: '*Why wouldn't you want to wiggle into snuggly tunnels and lie on your back and then realise other people's heads are really close to you as you felt just that shift in the bean bag as another person joined you?*' (B4).

This approach was very different from that in *Work Space I*, where the engagement with the conventional cultural affordances in this case was related to craft activity and specific written rules, which unleashed a stream of impulsive and in some cases inconsequential talk. The central voice in *WS I* was based on an impulsive improvised exercise: the person who was talking on the microphone was known to a large part of the group; the speakers (people) were present and they were therefore at the same level as the rest of the group. In *WS II*, however, the collage of voices talking

about Margarita came from a surround sound system and through headphones, and most of it was pre-recorded. Even if the audience–participants had recognised some of the voices, they were not able to engage in a dialogue with the person whose voice was heard, as this person was not present.

4.4.3 Regimes of shared attention

According to the patterns of practice approach there is a bidirectional plastic relation between brains (neuronal networks) and the shaping of practices. This understanding situates systems into the sphere of processes and systems-in-action, and frames the notion of attention not as a single behaviour that is passive or active, but as the 'analysis of structured (patterned), maintained relations between embodied minds and their social, material, and discursive "environments"' (Roepstorff et al. 2010, p.1057). B6 shared their experience:

> *I kept thinking of spaces where all these other voices were coming from. So I was thinking about the spaces that they were describing but I was also thinking about where is the person who's speaking, where were they when they were speaking […] Why am I connecting with that story and why am I not connecting with this other story […] and also people outside the space, people in the Hidden Café, thinking I am here they are there so this like of constellation type diagram in my head all the time.*

Drawing from the above account and the patterns of practice approach I will refer to the disembodied voice collage (pattern of practice) in *WS II* as possessing the quality of en-spacing itself in various places in the studio theatre simultaneously: working together with the multiple printed drafts on the floor, with the projected images from the outside of the theatre (Hidden Café and campus), and generating further multiple draft scenographies in the individuals' imagination, what McAuley (1999, p.127) refers to as the

tension between the real and unreal. Margarita, the installation, therefore contextualised a system network-in-action as understood by the patterns of practice approach, where attention was distributed and the patterns of practice, the regimes of shared attention, arose from the constant interaction of audience–participants, props, and beliefs. In that sense I argue that in *WS II* attention had agency in a sense that it was the regimes of attention that built the tapestry of inference, which drove the system, and it is something that can be manipulated by the designer, using the clout technique, using coordinated action between multiple participants, guided by attention (Ramstead et al. 2016, p. 15). For example, a specific affordance was created, a 'conventional' stage-audience relation, when Olivia performed her song and thus altered the field of affordances, and had the attention of all the audience–participants turned to her (Fig. 48).

Figure 48. The clout example.

According to the theories used here, brains are proactive and predictive, meaning that the audience–participants were using their prior knowledge; this prior knowledge is not stored but encoded in the hierarchical neural networks (predictive processing), in their bodies, and the patterned sociocultural practices. This prior knowledge across brain, body, and world

(material and social) helped them to direct their attention and engage with novel landscapes of affordances encountered during the performance through the act of movement, hearing, and repetition, for the creation of meaning for themselves and for others. This constituted the disciplined means that were provided by the affordances of the contraptions, and by the cultural affordances as patterns of practices and regimes of attention between the audience–participants, the props and theatre space, and their fellow audience–participants. The genuine means was what occurred; it was the autonomous system of Margarita itself, what the audience brought into this scenographic system network, transforming it into a scenographic system network-in-action.

Ramstead et al., building on frameworks of radical embodied neuroscience, outline two ways of changing the affordances available to an organism: Firstly by changing the architecture of its material environment. Secondly, by 'altering its form of life' (here, 'form of life' is adapted from Wittgenstein's notion of 'form of life', indicating the set of behavioural patterns characteristic of a group or population). Ramstead et al. further add that this altering may happen by 'giving it [the organism] the means or knowledge to acquire new abilities that are already available in that form of life interacting for example with new ways with the affordances of its niches' (Ramstead et al. 2016 p. 4).

Similarly to the above, Margarita, through the soundscape and the contraption-props, was providing a specific material architecture to the audience–participants, but at the same time, the installation was revealing tools to be used in an embodied way by the audience–participants, who changed the affordances of the ecosystem for themselves and for their co-

participants. Margarita was not a *tabula rasa* but came with 'prior knowledge'

from the voices and the contraption-props, etc. and provided a scenographic

system network, the 'ethics', the 'disciplined means', the 'patterns of

practice' in order to become a scenographic system network-in-action that

allowed for the various levels of couplings and changes through the actions

of listening, walking, sitting, perceiving, etc. from the audience–participants.

4.5 Interim Conclusions: Appropriating Rita

> By constructing a succession of designer environments, such as
> the human-built worlds of education, structured play, art and
> science, we repeatedly structure our own minds. These designer
> environments have slowly become tailored to creatures like us,
> and they 'know' us as well as we know them (Clark 2016, p.279).

Whereas in *WS I* the system was driven by contagion, I summarise based

on data, discussions, and observation that in the case of *WS II* the system-

in-action was driven by inference (social, shared intentionality). The space

and the installation afforded overall more reflection, listening, and

observation rather than spontaneity; this was down to various complex

factors, one of which was that the materials in *WS II* were affording specific

invitations to the audience–participants, whereas in *WS I* the materials were

raw and afforded for less specific instructions and invitations, thus creating

noise to the predictive brains. In *WS II* the predictive brains were not

overwhelmed allowing for more introspection, listening, and reflection.
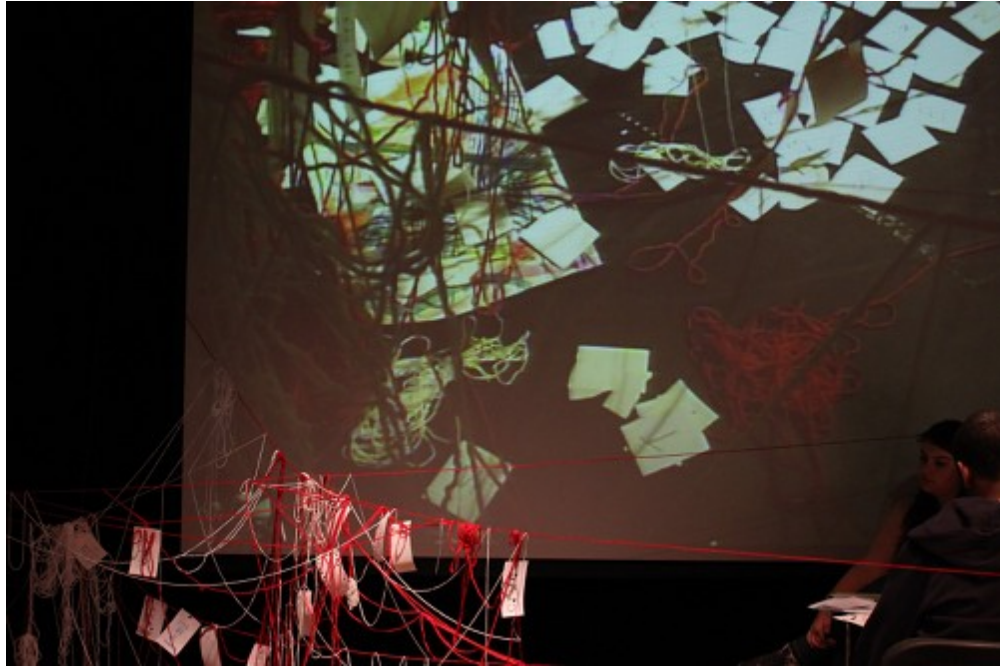
Figure 49. *WS I-*-a scenographic workshop on consciousness. The audience–participants were invited to find the affordances in the materials and create a collective scenographic artefact.

Figure 50. *WS II – Attempts on Margarita (multiple drafts).* The scenographer developed contraptions-props, giving simple invitations (solicitations) to the audience, inviting them to interact.

Participant B4 (USB, personal post-show communication, Folder 4) expressed that they were interested that other people spoke about Margarita as somehow external to themselves:

> *'For me the work – as with much in the immersive – enabled me to explore me – all the 'other' voices were fascinating – I appropriated them not on behalf of a third party Margarita but a first person self – I appropriated Margarita – she is me […] It was a pick and mix of identity play.'*

Margarita is a cultural artefact and a designer niche (Hutchins 2014; Clark 2016). Margarita is a montage as rhythm of the self and, as outlined earlier in the invisible scenography, made the audience–participants face themselves and their existential condition in that moment and in relation to their co-audiences, and find the immaterial-material in this condition (feelings, imagination, actions, senses, etc.) to generate their experience of the scenographic language. Margarita is 'the spirit of the space' according to Oddey and White, who argue that '[t]here is a poetic intention alongside the practical, where the spirit of the space develops alongside the nature of performance' (2010, p.14). Margarita is an embodied beyond post-dramatic situation, where the montage is the thing itself. Margarita is a cognitive scenography fuelled by the notion of the contraption.

Two participants in the post-show interview:

B2: *'I had a weird experience at one point, where I didn't do any voice recording but I thought it was my own voice…'*

B10: *'I had that too!' (laughter) 'I don't remember saying that..'*

B2: *'Yes, that's like me, but it's not me…that was very weird'*

B3*: 'What was the person saying? Were they saying things that you might have said?'*

B2: *'No! (laughter) […]'*

And so the above may lead to the question: did the audience–participants appropriate Margarita, or did Margarita appropriate the audience? Did the audience make the space or did the space make the audience? This circular co-origination will be explored further in *WS III, Phishing Things Together (the predictive mind).*

WORK SPACE III SOCIAL

Chapter 5: *Work Space III-* Phishing Things Together (the predictive brain)

In *WS III* with reference to my overarching research question, I argue further about how cognitive frameworks may be used to help us with designing the possibilities of material, immaterial, and social interrelations and how this is done. Specifically I am approaching groundlessness in scenography through the prism of what Lotker suggests in reference to social geographer Doreen Massey (2005) as a need to think about scenography 'as designing the possibilities of interrelations, as something that is always in flux, something predicated upon the existence of plurality' (2015, p.16). In order to do this I will focus on how my practice imbricated within the cognitive frameworks of the free-energy principle (FEP) and predictive processing (PP) (as outlined in p.165-170) and 4E cognitive frameworks can contribute to contemporary 'expanding scenography' knowledge, and logic.

5.1 *WS III*: the Venue, the People Involved, and an Original Method for Capturing Audience–Participants' Responses

Work Space III: Phishing Things Together (the predictive brain) took place on the 20th of October 2015 at the Live Art Bistro (LAB) which produces, and programmes live-art and performance events in Leeds. This piece needed to exist in an area where the audience–participants had to actively visit the performance–installation and not be familiar with the venue, or the workings of the venue (LAB had very recently moved to the particular space).

The space looked very different to the one in *WS II* due to its DIY aesthetics (Fig. 52), emanating a sense of contraption: what used to be a garage was now a carpeted large ground floor unit, with a considerably lower ceiling compared to that of stage@leeds. This decision brought up insightful information at the post-show discussions, in terms of the venue affecting the context and the experience itself due to the 'thinness' (C12) of the threshold between the busy street on 'a very peaceful October evening, a really beautiful sunset' (S5 audience-member on Skype conversations) and 'entering into a dark' interior of LAB 'walking on a kind of carpeted floor, old dirty warehouse' (S9 Skype). C2 who had attended both *WS II*, and *WS III* commented on the shift of the context between the two: the first time (*WS II*) was 'theatre' whereas at LAB, because they knew it is a live-art space, they read it as 'installation'. C6 said that the space framed it as an event, rather than an installation in a gallery.

It had some basic lighting and tech facilities, and we had to bring in more lights and equipment, and position these in places that were conspicuous, not hidden like in a theatre apparatus. Finally because storage areas were limited, some of the venue's furniture was placed around the edges of the space, allowing the audience–participants to sit as observers in the dark edges if they wished, but also giving the sense again of it being a transient area, literally rough around the edges, therefore in process. C3, and C6 commented on the fact that because the space had a bar it made it feel less formal. The context of each audience–participant shifted depending on their embodied system and their response to the shifting environment. As I have already inferred from the previous practices:

How an agent responds and what an agent perceives will depend

to a great degree on the overall dynamical state of the brain, but
also on environmental factors, embodied affective and
intersubjective factors […] because the brain is part of the larger
embodied system that is coping with its changing environment
(Gallagher and Bower 2014, p. 243).

Figure 52. The process aesthetics of the work @ LAB. Image © Alaena Turner.

The people who were involved in this project were: myself (the principle

investigator), three artist-participants (Ben Eyes in sound, Katherine Graham

in lighting and Martha Dais in performance). The audience–participants

(around 25 in total) were mostly members of staff and students from the

University of Leeds, peers, friends from Leeds, friends of friends, and some

people invited by LAB. This was a three-hour durational installation where I

had the role of the observer and the 'dialogic facilitator' (Blaikie 2000, p.52)

between the work and the artists-participants. The audience–participants

were free to drop in and out at any time.

In terms of the documentation the installation was recorded from different angles with three video cameras (image and sound) and I used a stills camera as did two other appointed participants. There is also a recording from a post-show discussion of approximately 20min between myself and those audience–participants who remained after the show.

I devised an original method for collecting audiences' responses: the Skype-station, a part of the work (Fig. 53, and 54 below), which allowed communication between the audience–participants and a group of my friends, collaborators or family members who were in different cities or countries. The disembodied guests had a script and asked questions to the audience–participants regarding the space. The dialogues were recorded and gave me limited but insightful information on the audience–participants' perception of the space, and their experience. This incorporated methodological tool was tried for the first time here and demonstrated a potential for capturing audience–participants' responses both in relation to what the participants were saying, and in the ways they were saying it. These parameters were revealing in terms of their experience, and emotions, and added to the research data in that sense. However I am still reflecting upon how the tone of the voices can inform the research, and considering taking it further in the future, especially as a methodological tool for collecting audience–participants' responses related to feeling. Approximately one month after the event I had one-to-one interviews with 12 of the audience–participants, whom I asked specific questions i.e. regarding any tensions they found in their engagement with the environment, and how they dealt with those tensions; I also asked them to openly reflect on the words: sense and non-sense, and imagination. The second part of the

interviews therefore tried to leave space for the audience–participants to reflect on their experience, and some of this reflection will be used in my analysis. All the material mentioned above can be accessed through the USB drive, at folder *WSIII:* 2. *Audience Interviews*, 3. *Audience Questionnaires*, and 4. *Raw Data*.

Figure 53 (top). The 'puppet-booth' included a screen from which one could communicate with friends, collaborators and family members of mine (i.e. my mum in the image on the left) via Skype.
Figure 54 (bottom).
Disembodied philosopher of radical embodied neuroscience Mark Miller in conversation with Martha Dais. The script given to the disembodied guests was that they really wanted to be at the installation but could not make it. They therefore asked questions about the different parts of it.

5.2 Scenographic Contraptions (part 3): Removing the Scaffolding

So far in *WS I* and *WS II* I have situated theories of consciousness and perception at the centre of my praxis as scaffolds to generate contraption-environments and participation. However, one puts up scaffolding so as to

take it down once the underlying construction is ready to be revealed. Furthermore, this process of initiating a dialogue with these neuroscience connectionist models, and metaphors (multiple drafts etc.), however useful in terms of design in *WS I* and *II* didn't seem productive for designing *WS III*. I could now experiment in a more dynamic, and free manner using the tools I had already discovered from *WS I*, and *II*, and therefore a different model was now needed.

In *WS I,* I mentioned that the system was driven by contagion, and in *WS II* mostly by inference; in *WS III* I wanted to create an environment giving the audience–participants time in between to think about their experience, and their next move, but at the same time allow them to navigate a friendly social space.

The neuronal metaphors of a 'global workspace' (Baars), of 'multiple drafts', 'fame', 'clout' (Dennett) etc. that worked as scaffolds in my previous practical experiments, when removed revealed, unsurprisingly, groundlessness: a co-originating network between the audience–participants and the design, powered by ambiguity, precariousness, and uncertainty. The contraption-scenographies that were created in *WS I*, and *WS II* did not make 'pronouncements' (Eco 1989, p.142), and had therefore as a blueprint this primal perceptual sense of uncertainty stemming from the audience–participants' embodied experience within the design. The skillful arrangement of the affordances was therefore sufficient at this stage and there was no need for using consciousness metaphors as blueprints for designing *WS III*. These blueprints had provided me initially with the form and later (after reflection and 'doing-thinking') with practical insights on how to orchestrate the 'invisible' scenography so that it is 'decisive' (Lotker 2015,

p.13). In *WS III* I worked therefore with practical insights I had developed already relating to the audience–participants resolving tensions brought forward by the ambiguity, precariousness, and uncertainty through their structural coupling, skilled intentionality, and inventiveness with affordances provided by the designed environment. In short by using their common sense to navigate groundlessness.

Varela et al, contrary to cognitivism, and connectionism of their time, the 1990's, that seem to leave the 'unmanageable ambiguity' of common sense 'at the periphery of the enquiry' (Varela et al. 1991, p.148), give particular attention to common sense (or background Know-How), viewing it as the context-setting element of what is relevant for the agent within groundlessness. Indeed in *WS I*, and *WS II*, common sense was prominent from the part of the audience–participants in navigating the contraption–environments. I will continue to reflect on the notion of the driving force of the audience–participants being that of common sense but using more specific terms of contemporary enactive frameworks that accept, like Varela et al, that 'basic cognition is more a matter of adaptive self-regulation in precarious conditions than abstract problem solving (Di Paolo and Thompson 2014, p.76), and address how the relational understanding of enactivism can be made consistent with predictive coding models (Gallagher and Bower 2014, p.242). This will help me unpack further the notion of groundlessness in scenographic practice, and elaborate on the how of the workings of groundless scenographic experience.

In Chapter 2 referring to the ambiguous nature of consciousness and existence, following Merleau-Ponty, I inferred that the ambiguity of the scenographic contraption is not an imperfection but its definition. What this

means in relation to the audience–participants within the contraption-environment is that 'the body as an object is not ambiguous; it becomes so only in the experience which we have of it' (Merleau-Ponty 2002 p.149); and particularly in all the *Work Spaces* the audience–participants were confronted with this ambiguity of experiencing their bodies within 'a rich landscape of affordances' (Rietveld and Kiverstein 2014), and in relation to the other bodies in the space. Following that 'the body is not just the means but also an end of being a cognitive system' (Di Paolo and Thompson 2014, p. 73), I argue that the conscious body is not just the means but also an end of being a scenographic contraption system, and this was revealed particularly in *WS II* with the audience–participants' embodied inference which drove the system forward.

Precariousness, as understood by the enactivists, is an intrinsic characteristic of autonomy that 'is not a positive property of a process, but rather an unavoidable aspect of materiality' and 'its negative effects are what the system is constantly acting against' (Di Paolo and Thompson 2014, p.73). Therefore, what precariousness does paradoxically is to enable relational processes to happen within an operationally closed network, thus preventing it from dying out. The idea of precariousness in autonomy is therefore particularly useful in terms of the understanding of precariousness in contraption for 'designing the possibilities of interrelations' (following Lotker) that don't let the scenographic system die out. As I have already outlined in my 'ignorant scenographer' analysis a scenographic system network-in-action is an autonomous system, like all Work Spaces, because the meaning is found in the dynamical processes of the enfolding and unfolding of the audience–participant and the environment. Enactivists Di

Paolo and Thompson argue that '(t)o be a sense-maker is, among other things, to be autonomous and precarious, that is, to be a body, in the precise sense of "body" that the enactive approach indicates' as a self-individuating system (Di Paolo and Thompson 2014, p.76). If all the bodies of the participants leave the particular space of the performance then the performance stops as there is no sense-making to be made, and no operational closure. When they (or one) are in the space they find themselves in perpetual sense-making discourse, within a precarious operational closure (the scenographic contraption environment, including themselves).

In order to unpack what is referred to as common sense in the contraption and as a way to help myself and the reader visualise the circular causality of embodiment of enactivism, and ecological cognition in scenography I use the free-energy principle (FEP) and Predictive Processing (PP).

5.2.1 The free-energy principle (FEP)

The free-energy principle (FEP) provides a unification of the study of life and the study of cognition, and it is in line with theories of self-organisation of the living such as autonomy, autopoiesis (Maturana and Varela 1980), and ecological psychology (Gibson 1986) (see Bruineberg et al 2016, p.3). According to Friston 'self-organising systems (like us) that are at equilibrium with their environment must minimise their free-energy' (2011, p.91) and in this way 'actively resist a natural tendency to disorder' (ibid. p.89), which is the second law of thermodynamics. In short, living systems must avoid surprises not 'in the psychological sense, but in an information-theoretic sense—as the negative log probability of an event's occurrence (roughly, the unlikeliness of the occurrence of an event)' (Seth 2015, p.6).

Friston argues that agents suppress free-energy by changing two things, action and perception: their 'sensory input by acting on the world' (active inference), and 'their recognition density by changing their internal states' (perceptual inference) (2011, p.93).

Jelle Bruineberg, Julian Kiverstein, and Erik Rietveld argue that this minimisation of surprise is done by the whole organism 'being drawn to act on relevant affordances in ways that result in the reduction of dis-attunement with the environment' (2016, p.11), and agree with those who argue that the free-energy principle as outlined by Friston, is better suited when applied to the whole system of animal-environment, and not only to its brain. They go one step further and suggest a radical embodied term for perception to avoid any reference to it as something happening separately inside the insulated head of the self-organising system, and replace 'perception' with 'action-readiness' as 'the internal states of the individual that, given its sensory states and abilities, prepare the animal to achieve a grip on a particular situation' (Bruineberg and Rietveld 2014; Kiverstein and Rietveld 2015). I will be using this term for *WS III* and also agree with Tom Froese's and Takashi Ikegami's argument, that organisms do not aim ideally to completely eliminate disorder and thoughtfully propose 'that it is more important to be open to perceiving differences that make a difference, rather than to eliminate differences that could surprise you' (Froese and Ikegami 2013, p.214). Therefore the phenomenological tendency of the agent towards a maximal, or optimal grip as used by Bruineberg, Rietveld, and Kiverstein, is not only for eliminating disorder altogether but for sense-making in the enactive view as 'a bodily process of adaptive self-regulation' (Di Paolo and Thompson 2014, p. 76).

Another important claim that interests *WS III* in terms of its form is that the free energy principle accepts that each 'agent *embodies* an optimal model of its econiche' and that 'not only does the agent embody the environment but the environment embodies the agent' (Friston 2011, p.89). Therefore the 'physical states of the agent (its internal milieu) are part of the environment' (ibid.), something the theory of the scenographic contraption has so far addressed, with the understanding of 'being implicated in the game' (Derrida 1993) and 'languaging' (Maturana, 1988) as outlined earlier (p.101). Friston radically refers to the circular causality of embodiment as 'I think therefore I am, iff I am what I think' (Friston 2011, p.89-90) and continues: '(f)rom the point of view of the brain, the environment includes both the external and internal milieu' (ibid. p. 92). The practical implications of Friston's statement above are that 'every aspect of our brain can be predicted from our environment' (Friston 2013, p.213). This understanding has significant implications for performance design, and for *how* can scenography make us (following Lotker and Gough 2013), leading me to develop another tool in *WS III*: the Predictive Scenographer which I have already referred to but will analyse further in this chapter.

5.2.2 Predictive processing (PP)

Predictive Coding (or Predictive Processing according to Clark 2013b) is a neuronal theory that is used together with the organisation of the living principle of free-energy (FEP) in order to complement the neurophysiological anticipatory aspect of the second. It suggests that brains are essentially prediction machines (Friston, 2011; Hohwy 2013; Clark, 2013b); the theory, known also as the Bayesian Brain, is considered today a strong candidate of 'being the single principle by which neural operations can account for

perception, cognition, action, and even consciousness' (Seth 2015), but also empathy, imagination and creativity. According to predictive processing brains are pro-active, busy with constantly predicting their own states therefore information flows forward. The predictive brain therefore 'tries to create a neurophysiological pattern that fits the external (environment) pattern and they shake hands' (Miller, M. 2015. *Conversation with Xristina Penna*, Spring 2015.) and it is driven by prediction error.

The word prediction is used in predictive processing in its original understanding of the meaning of the word 'prediction' denoting ambiguity, because most predictions are not accurate, and it is not a transparent term. 'The nervous system is fundamentally adapted to deal with uncertainty, noise, and ambiguity' (Clark 2016, p.39), and the paradox with applying the predictive processing theory to the Work Spaces, as already observed with the theory of the contraption, is that uncertainty, ambiguity, and precariousness provide the 'disciplined means' of the groundless scenography as seen in chapter 4.

This theory is very useful for *WS III* as it provides a structure for generating scenographic participation not as a scaffold but as a top-down multi-layered and hierarchically organised model (design) in which there is a constant bottom-up flow of prediction errors (audience–participants) trying to be smoothed over with top-down predictions 'at multiple hierarchical levels' (Seth 2015, p.5). Within this understanding the prediction error was key for generating the system-scenography of *WS III*, both imaginatively and practically so as to become a system network-in-action. The implications of predictive processing to scenography are that a scenographer can now be seen as someone designing the space ethics of a multi-functioning design,

which is constantly trying to understand the audience. I combined this view with a social media structure (Facebook), but as one audience–participant said, and I am referencing them here because I like how they put it, 'using it (Facebook) as a research enquiry, and artwork, and bending it to my own purposes, as a protest' (C2).

Following imaginatively what Clark is describing below, the processual scenographer and the artistic team accommodated the inner (neural) organisation using contraptions as building blocks and providing thus the ethics of the space; the 'disciplined means'. Imaginatively speaking the audience–participants are considered the external factors as described below, and when the two (audience–participants and designed environment) come together in time they make the constant co-determining groundless scenography.

> Brains now emerge as complex nodes in a constant two-way flux in which the inner (neural) organization is open to constant reconfiguration by external (bodily and environmental) factors and forces, and vice versa. Inner and outer here become locked in constant co-determining patterns of exchange, as predictive agents continuously select the stimulations that they receive. This pattern repeats at more extended scales of space and time, as we structure (and repeatedly restructure) the social and material worlds that slowly but surely structure us (Clark 2015a, p.300).

This happened with the construction of contraption-props, using materials, sound, costume, light that generated a number of natural and conventional affordances; and with the use of patterns of practices such as drawing and writing, drinking, chatting, presenting, dressing etc. creating further possibilities of interrelations in a work open to constant reconfiguration by the audience–participants, who constituted the 'external (bodily and environmental interactions)', or as I have referred to previously the 'genuine means'. However in the installation itself, each one of the audience–

participants as happenings (following Maturana (2011, p.146) who refers to living beings as happenings. See chapter 4 p.122), were reconfiguring their self-organisation between their inner (neural) and external (environmental).

From what has been outlined above with the free energy principle and predictive processing the main insight that occurred was that the dynamic scenographic systems networks-in-action of the Work Spaces were generated by each audience–participants' embodiment of their own best model of their eco-niche, prompted by their restless predictive, pro-active brains. This insight will be analysed further throughout the rest of this chapter.

5.3 Outline of *WS III*

I will go now onto outlining the 'how' and 'what' of *WS III* in order to familiarise the reader with the complexity of the system, because the video footage however rich cannot in the specific piece capture the experience of the associations and interrelations.

For re-powering Margarita after *WS II* I set-up a Facebook profile of a fictitious person called *Margarita Attempt* (https://www.facebook.com/margarita.attempt); in the profile-page I started to add text from the transcripts of *Work Space II*; I also downloaded images from the web and added these on *Margarita Attempt's* profile in order to complement the text. For example (Fig. 55) the text related to the trip to Alaska was used as a status of *Margarita Attempt* and a photograph was added, one that I found on-line of people on a cruise ship to Alaska.

Figure 55. Facebook profile of Margarita Attempt

Once this Facebook profile was set-up I invited people to join as friends of *Margarita Attempt*. The Facebook invitation was also on the marketing material of the installation and on-line. The initial idea was to give people Margarita's log- in details so that they could update her status; this idea changed because of logistical and ethical reasons. Hence the 'contract' between myself and the people who befriended *Margarita Attempt* ended up with me being able to browse their profile pages and collect material that I could then incorporate creatively in the environment of the installation. Those participants who did not agree to this were still accepted as 'friends' and therefore could see Margarita's status updates but I did not browse their pages to collect material. A private message was sent to each friend; this message outlined the above information, giving the participants the additional option to ask questions about the project in private if they wished.

Figure 56. The flyer-invitation.

The intention behind the FB idea was for getting to know who was coming and to know in this way a bit more about my audience, despite understanding and accepting as part of the system that not all the audience–participants that befriended *Margarita Attempt* would turn up, and not everyone who turned up to the installation were friends with her on FB. A number of questions arose after browsing people's profiles and thinking about the project: How is the Facebook information going to be embodied in the performance space (props, image, sound) and be translated into a rich landscape of affordances? How will the audience–participants interact with this distributed environment (movement, language, creative/making, etc.)? What emotions will the scenographic environment (sound, props, light, projections) invoke to the audience? What are the ethical issues of using the material (despite having obtained the audience–participants' consent)?

In an attempt to respond to these questions *WS III* following the contraption concept left the environment of the installation ambiguous, using an inefficient aesthetic, necessitating the perceivers (audience–participants) to

co-construct the experience, within rich landscapes of affordances, some of which contained the audience–participants' own 'information'.
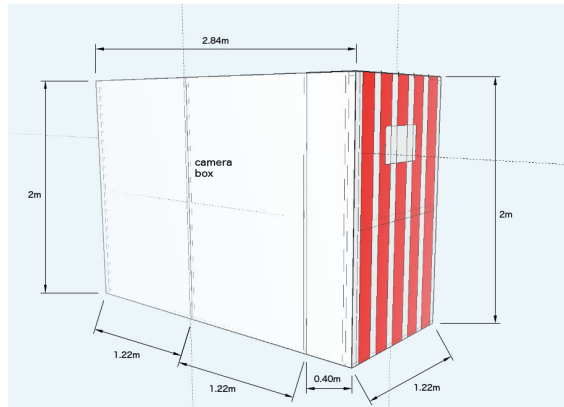
Figure 57 (left). In WS III, I did not hand-make all of the set myself like in WS II but provided drawings. However, I communicated the contraption idea to the set builder. He picked up on the idea and developed in turn some interesting elements like the camera cover that was inside the booth see Figure 58 (right).

The information from FB fed into the design as part of the 'themes' of each part (node) of the system scenography. When designing the space I spent time looking at profiles of the friends of Margarita and got ideas about the design arrangement. Most of the information was related to songs (this brought forward the plinth idea Fig. 71, 72, 73, 74), selfies (puppet booth Fig. 53, 54, and 62), travel memories and social drinking (tepee Fig. 61), complaining about something, or ridiculing oneself (the uncanny hat Fig. 59), getting to know people's friends and family (Skype conversation Fig. 53, 54), achievements (talking to a microphone over images) etc.

Anticipation was created in relation to which information from the audience–participants' profiles they may have encountered in the space. This was taken on board as one of the 'errors' that drove the system, the creation of an anticipation, and people coming in expecting a certain arrangement

because of the invitation on social media. An audience–participant said during the post-show interview: '*I thought I would come in and find all my personal information hang in the space and I am glad I didn't and I found this playful atmosphere actually became curious about everything*'. Or another (S6 from Skype calls): '*I don't know, I came here to find a friend from FB, I am not sure if I have found them. I don't know if I am drinking Margarita or if I missed Margarita. I don't know who Margarita is but I think I have an idea. Maybe I am lacking to find the physical presence. Yes, I am Facebook friends with Margarita. Maybe I'll go and see if I can find her*'.

Figure 59. The uncanny hat, also known as the clown hat, 'the hat', 'Homage to Tadeusz Kantor, Louise Bourgeois, and David Lynch'.

Therefore the different stations of *WS III* were more inter-linked than in *WS II*, as there was the intention to evolve them by initiating more nodes, in number and in complexity, between the different parts of this scenographic network-in-action. For example the idea of the tunnel (Fig. 60) was re-used

with the same recordings as in *WS II,* of people sharing their experiences of travel, landscapes, intimate confessions and accidents in all tunnels. However this time one tunnel had a live recording coming from the audience–participant who was each time inside the tepee: the audience–participants deciding to enter into the tepee were asked to describe aloud a landscape from memory and their description was heard live through the headphones inside this tunnel.

Figure 60. An audience-participant lying inside the tunnel listening to a recording.

When entering the tepee people were offered to choose between a Margarita cocktail (in a plastic cup) or a slice of pizza Margarita, and were provided therefore with more layers of affordances (taste of the drink or the pizza, holding a plastic cup with an alcoholic drink, holding the slice of pizza), which in some cases triggered the description of the landscape: C7 said that drinking the margarita impacted on her description of a landscape; '*the margarita tent made me return to a particular point that I have not really reflected on since it occurred. This was triggered by the smell and taste of the drink. I found this to be both relaxing and thought provoking*'.

Figure 61 (left). An audience-participant entering the tepee with the margarita cocktail. When inside the tepee they were asked to describe a landscape from memory (this was the only element in *WS III* that was ushered).

Figure 62 (right). Inside the booth. Audience-participants' faces were printed in advance (from their FB profiles) and left for the audience-participants to explore by finding various potential combinations of these 'cut-out masks' and their own faces in front of the camera.

The lights, cameras, sound were all 'disguised' as part of the process aesthetics of each of the contraptions aiming to generate an extra layer of questioning, and process-experience to the audience–participants following again the affordance of 'touch' instead of 'don't touch' and the generation of layers of meaning from something that is not finished, or the feeling of being backstage. So for example while people were inside the booth trying on faces the intention was for them to encounter underlying aesthetics of more process, rough-and-ready and backstage, generating nuanced internal questions of the whys of the absurd aesthetics: Why is the camera in a wooden box, and why is the light coming through the plastic jug? (Fig. 62)

📹 (You will now be guided through to the video footage *WS III*.mov, in folder *WS III*). Please watch now the footage from the beginning up to 02:52. Another contraption element within the overall scenographic contraption environment of *WS III* included the affordance of the cultural patterned activity of drawing/doodling/writing; this activity replaced in a way the playing with the buttons from *WS II*. What the audience–participants drew was projected on the curtain of the booth (see Fig. 64, 65. Please watch now 📹 07:11 to 09:48) and was conspicuous to other audience–participants; this projection in turn created a backdrop for the people who were trying on the face cut-out 'masks' inside the booth.

Figure 63 (left). Audience-participants drawing or writing. Figures (below) 64, 65, 66, 67. What the audience-participants drew was projected on the backdrop of the booth (Figs. 64, 65). Inside the booth people were trying on the 'masks' in front of a camera with a backdrop of the drawings. This combination of the face with the mask in front of the customised backdrop was simultaneously projected on the round ball- piñata (Figs. 66, and 67).
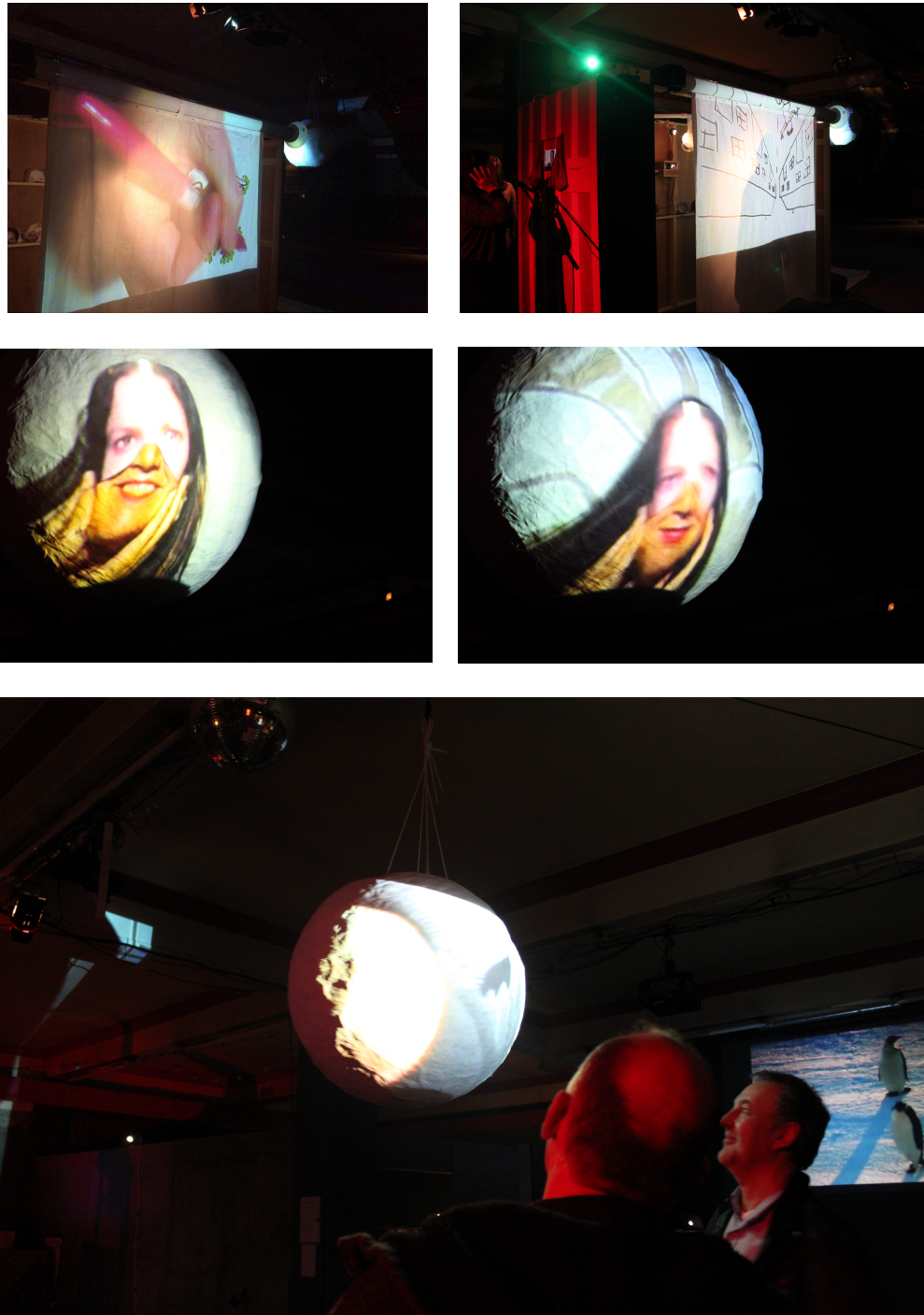
Figure 68. Audience-participants watching the faces, or other inventive interactions, coming from inside the booth.

WS III was a social space, because it was designed as such, using the insights from the previous *Work Spaces*. For example, a significant difference to this scenography in comparison to *WS II* was that there was no surround sound. The voices and sounds were transmitted from within each

station with the speakers being placed inside the various parts of the installation (in tubes or special pockets, like in Fig. 69). This followed the observation made in *WS II* of the sound imposing itself on the way the audience–participants behaved (solemn, reflective, the inferential approach), and I wanted in *WS III* to create a more energetic environment, something in between *WS I*, and *WS II*. I therefore refrained from using a surround sound, and opted for designing the scenography of the sound coming out from different sources within the installation. The sound scenography therefore, was not linear like in *WS II* but each chapter corresponded to a station and each station had its loud and silent moments in the piece (see Fig. 70).
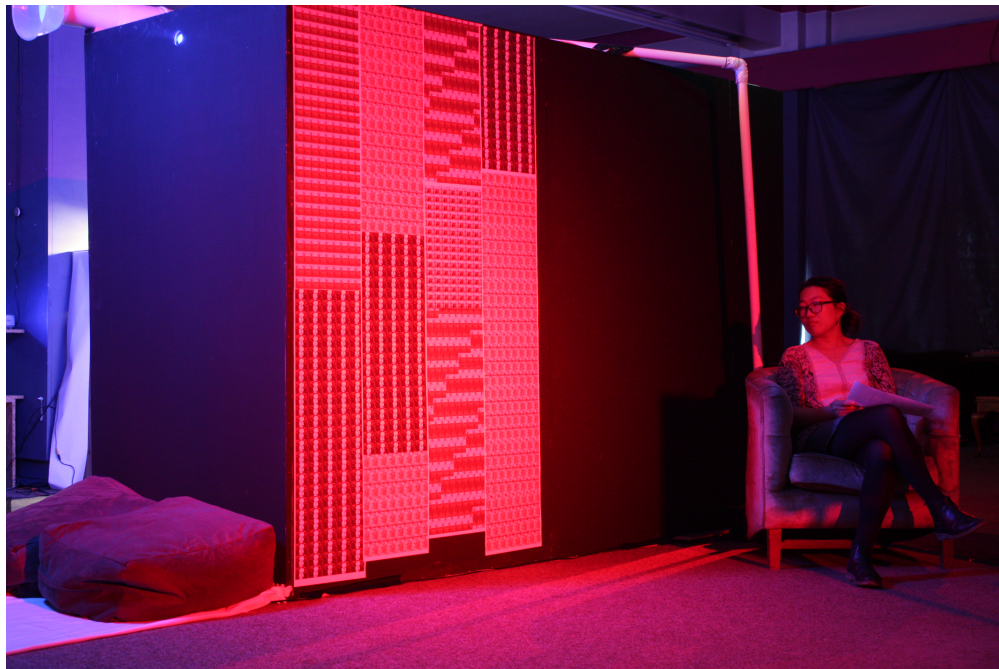
Figure 69. The speakers were placed inside elements of the set (like the white tube next to the armchair in the specific case) giving an intimate encounter (when encountered) depending on the positioning of the audience-participants.

What was intended was to avoid having a confusing sound landscape, but also avoiding big moments of silence. Therefore I developed a score as guide (Fig. 70, below) which was a precarious score that took into account the

interrelation of the different parts of the installation (i.e. avoiding or inciting the overlapping of sound). Some of the chapters, like *the plinth* as will be outlined below, we decided to be operated spontaneously by the sound designer.

Tuesday 20th Oct - LAB xristina penna+aswespeakproject with ben eyes, katherine graham and martha dais

Phishing Things Together (the predictive mind)-
a collective complex performance conversation/experience
SCORE: (note that this is not a linear score so the chapters do not come with arithmetical order)

Cycle 1: IMMERSING (5pm-6pm)

5pm-5.15pm
Chapter One: What does she look like? What is she wearing → puppet booth louder

5.15pm-5.20pm
Chapter nine: a presentation. PowerPoint (louder)

5.20pm-5.35pm
Chapter Two: Where is she at the moment?
Teepee → play tepee audio louder (in other chapters we keep tepee audio at low level so that people inside tepee get to talk on the mic)

5.35-5.38
Chapter Eight: a song
Front man/woman laughter and clapping.

5.38-5.48
Chapter Four: Secret pleasures
Some sound for the piñata

5.48-6 Chapter 7: Shitty Jobs (clown)

Cycle 2: EMERGING (6pm-7pm)

6.00pm- 6.10pm
Chapter nine: a presentation. PowerPoint (louder)

6.10-6.20
Chapter Two: Where is she at the moment?
Teepee → play tepee audio louder (in other chapters we keep tepee audio at low level so that people inside tepee get to talk on the mic)

6.20pm-6.25pm
Chapter Four: Secret pleasures piñata

6.25pm-6.28pm
Chapter Eight: a song
Front man/woman laughter and clapping.

6.28pm-6.38pm
Chapter nine: a presentation. PowerPoint (louder)

RECYCLING (7pm-8pm)

7pm-7.03pm
Chapter Eight: a song
Front man/woman laughter and clapping.

7.03-7.05: Sound of wind or other relaxing sound through tubes (release)

7.05pm-7.15pm
Chapter nine: a presentation. PowerPoint (louder)

7.15pm – 7.25pm
Chapter 7: Shitty Jobs (clown) and Chapter Four: Secret pleasures
Some sound for the piñata

7.25pm – 7.35pm
Chapter Two: Where is she at the moment?
Teepee → play tepee audio louder (in other chapters we keep tepee audio at low level so that people inside tepee get to talk on the mic)
And
Chapter Eight: a song
Front man/woman laughter and clapping. (on and off)

1

Tuesday 20th Oct - LAB xristina penna+aswespeakproject with ben eyes, katherine graham and martha dais

6.38pm – 6.48pm
Chapter Four: Secret pleasures
Some sound for the piñata → ~~break the piñata!!!~~ Changed to 7.45-8.00

6.48pm – 7pm
Chapter Two: Where is she at the moment?
Teepee → play tepee audio louder (in other chapters we keep tepee audio at low level so that people inside tepee get to talk on the mic)
And
Chapter One: What does she look like? What is she wearing → puppet booth louder

7.35pm-7.45pm
Chapter One: What does she look like? What is she wearing → puppet booth louder
And
Chapter 7: Shitty Jobs (clown) and Chapter Four: Secret pleasures
Some sound for the piñata

7.45pm-8pm
~~**Chapter nine:** a presentation. PowerPoint (louder)~~
CHANGE: Break piñata !!

throughout the show every 15 min Liv's song plays forwards or backwards in parallel to what the score is.

2

Figure 70. The sound script of *WS III*.

This design decision generated a social space as it allowed intervals in time and space in which people felt it was 'allowed' to engage in talking to each other, about their experience, or other topics. I inferred this from the data when asking during the interviews '*Did you feel you were allowed to talk or not*?', and received answers confirming that audience felt comfortable to talk to each other at parts both about the experience, and also within a social context of 'catching up'. (USB drive, folder *WSIII:* 2. *Audience Interviews*)

5.4 Applications of Embodied Prediction in *WS III*

5.4.1 Action, tension, expectation and other immaterial nodes of commun(icat)ion in *WS III*

Earlier I agreed with Harpin and Nicolson's account of referring to performance participation in cases as being 'less an action than an encounter and perception' (2017, p.6). I will now shift this assertion slightly by assuming that action and perception, following the enactivists, work together; this is also a view within the specific framework of Predictive Processing (PP). According to Andy Clark, action needs to be reconceived when talking about embodied prediction, because it should not be understood as a response to successive inputs but as something that brings forth 'the evolving streams of sensory information that keep us viable (keeping us fed, warm, and watered)' (2015b, p.2) and thus 'results from our own predictions concerning the flow of sensation' (Clark 2015b, p.7). This complements action as perception as they are both working together in reducing prediction error, and it is what Bruineberg et al. have named as action-readiness:

(P)erception on our account just is the organism's preparing itself to act in ways that reduce surprisal, thereby improving grip on its environment both by getting ready for what is to come and by engaging with affordances offered by it in action. The environmental affordances scaffold the individual's actions (Bruineberg et al. 2016, p. 14).

The affordances in the installation were designed not to be evident, but rather layered. On the other hand they were not hidden to create a hierarchy between the creator of the work, who knows where something is hidden, and the novice, who does not know but rather the idea was to create a groundless (enfolding-unfolding) meaning making experience in which the audience–participants were asked to locate, explore or make up the nodes-associations, to navigate in an inventive manner. According to the point of view of one of the audience–participants when describing the space: '*We are finding parts of ourselves, playing, playing with the light, unexpected events […] wood, fabric, cameras, sound equipment, and a bit of alcohol. Shades of red, grey, it is pretty dark, you cannot see much. It provokes you in terms of fiction*' (Skype 3).

The connections and associations therefore that are made by the audience–participants between the available stations were driven by an on-going sense-making process (or non-sense-making process), and action-readiness based on their previous knowledge, prediction, and skilled intentionality on multiple landscapes of affordances.

Skilled intentionality treats context as just more affordances—a landscape of affordances available in an ecological niche —and avoids the frame problem by starting from the phenomenon of maintaining grip on multiple affordances simultaneously (Bruineberg and Rietveld 2014, p.10).

The context that is necessary for our predictive brains to be able to coexist in a particular eco-niche can be treated as 'just more affordances'; *WS III*'s

context therefore was made out of affordances, that were the scenographer's tool to try and predict the audience–participants' responses in order to create 'possibilities of interrelations' (Lotker); more like a scenography as predictive affordance-o-graphy. The aim was again the subtle development of webs of affordances and the co-generation of the action-readiness patterns from the enfolding of the audience–participants, and even the co-invention of new ways of interaction that the designer and the art team may not have thought about previously. I will give an example below:

(Please go now and watch 🎥 06:31-06:54) The contraption-prop of the plinth was at precarious moments very loud and aimed to attract attention, the 'clout', and 'fame' example as outlined in *WS II*. Sounds of clapping, loud pop music, and booing were heard intermittently via two speakers on both sides of the plinth, to give the impression to the audience–participant who was on the steps of being on stage as a front-person in a band (Figs. 71, 72), and thus generating different feelings to the person who decided to put themselves up there, and to those watching (please go now to 🎥 05:37-05:55).

Figures 71, 72. The plinth, or steps, or treads, or pedestal.

The area 'on stage' was restricted aiming to make the audience–participant feel vulnerable, and the height on the opposite side of the steps was just at an uncomfortable level for jumping (C2 described it as 'dangerous' but 'not in a threatening way'). Several audience–participants dealt with the tension that the

affordances of *the plinth* emanated by deliberately avoiding it: C4 said she thought that if she stood on the steps…she didn't want to do that, while others (as seen in the images above, and in the video) engaged with it to resolve the tension, or in order to get an optimal grip: S3 Skype said '*there were the steps and I went on to bow. It is part of my job, I am a pianist, so I did it*'.

However, once up or in a tactile relation with the plinth, another field of affordances was discovered by some. These steps had subwoofer speakers inside; depending on the strength of the bass sound they would vibrate offering a mechanoreceptive sensory experience to the audience–participant. This quality was discovered gradually by the audience–participants who decided to engage with it, and later told others about it. C7 said they spend some time with the plinth, and found a way in which they could understand the vibration from different parts of their body 'fascinating'. When they went on it originally they were expecting a sound experience, and the vibrations were not particularly strong, but then it 'kicked in' and they realised that 'the experience of standing in that spot wasn't about what they thought it was about in an experiential way'. From afar it seemed about 'one person presenting themselves becoming a statue, a stage whatever', said C7 during the interview, but the vibration moved the attention circle (they reference Stanislavski here) to their feet and they wanted to understand what their feet were doing. They then went and 'recommended it to people' like to the audience–participant on Figs. 73, 74 below, and 🎥 03:35-4:17.
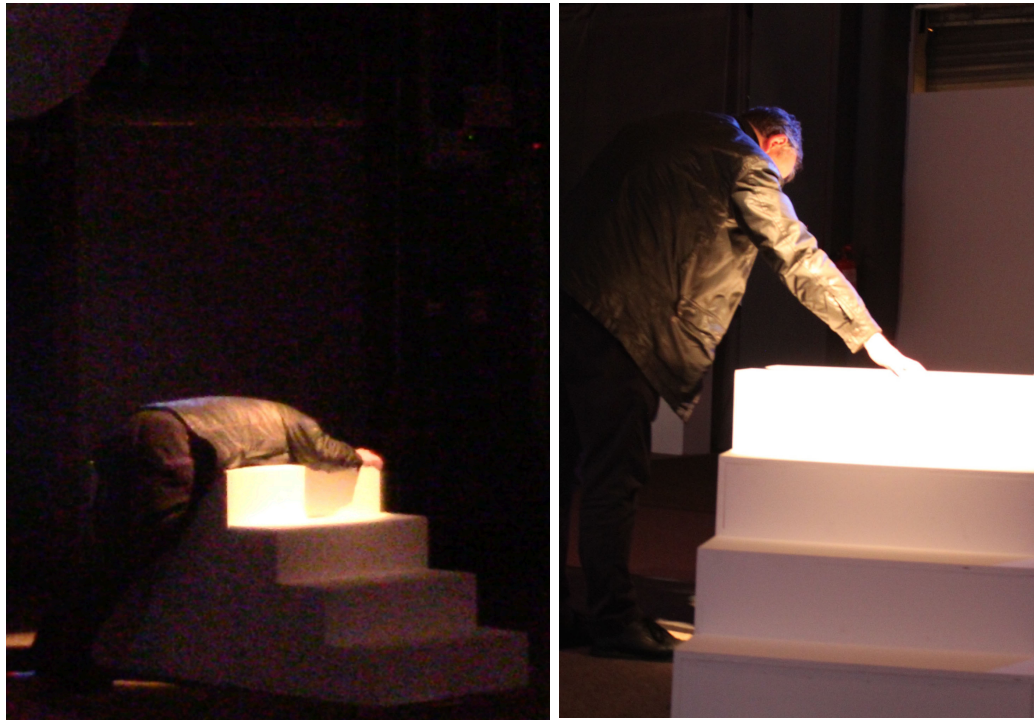
Figures 73, 74. The plinth.

This person (Figs. 73 and 74), whose attention was pointed to the vibration quality by C7 engaged with it without using the stepping-up solicitation-invitation but found a different field of affordances, maintaining a grip simultaneously on a shifting constellation of affordances, while performing-rehearsing. They talked during the post-show discussion about 'the physical feeling of the sound, and how it transferred in the body', an invitation to 'play with the sound', changing depending on where the body was, ranging from a relaxing experience to an earthquake shaking you. They also said they were aware they were being watched, and one can see in the video footage (📹 05:02-05:34) how other audience–participants, wanted to capture this moment on their phones, or watched this ambiguous performance. C5 said that they recalled liking it when there was some ambiguity for example with the plinth, 'the man hugging the plinth', they found it unusual and interesting

to watch, they thought it was a performance, and 'that he was experimenting'. It surprised them, and they found it inventive (C5).

What is of further interest here is something already mentioned in the previous Work Spaces: the error response generated by the violation of the audiences' expectations, and the use of a disciplined surprise for the creation of meaning. 'The organism is ready to act on relevant affordances so as to improve its grip on the environment thereby reducing surprisal' (Bruineberg et al. 2016, p. 14), but this 'surprisal' can be enhanced or annihilated by situating the audience–participants in a landscape of deliberate tensions, or layers of 'surprisal'. The sense-making autonomous bodies of the audience–participants may experience more joy when 'surprisal' exceeds their expectations (i.e. the vibration in the plinth), something that for the specific context of the contraption counts also towards an optimal grip. The aim of the design context therefore, was to provide an escalation of layers of familiarity and layers of surprisal. Tim Ingold writes:

> those who are truly open to the world, though perpetually astonished, are never surprised. If this attitude of unsurprised astonishment leaves then [sic] vulnerable, it is also a source of strength, resilience and wisdom. For rather than waiting for the unexpected to occur, and being caught out in consequence, it allows them at every moment to respond to the flux of the world with care, judgement and sensitivity (2011, p.75).

And so following the above understanding but applying it to the contraption my aim was not to present the unexpected and the surprise out of proportions, but aimed to calmly but assertively orchestrate the playfulness of the scenographic interrelations. This aim was indeed co-dependent and co-originating with the audience–participants, their mood, their 'attitude of unsurprised astonishment' and so the example with the person on Figs. 73 and 74 was one of the successful moments of communication between the

scenographer, the audience–participant, and their co-audience–participants in getting an optimal grip. The art team provided the potential for this interaction to occur but the unfolding of the response came from the audience–participant who was in turn 'recommended' the specific affordance by a co-audience–participant.

5.4.2 The predictive scenographer: designing uncertainty for generating audience interaction and participation

I hope that from the way I have outlined the work so far, it is clear by now how the use of structures and the theories that create the form of the *Work Spaces* facilitate both the interaction of the audience–participants with the actual contraption-environments themselves and the bringing forth of feelings, memories, affect, and emotions. Scenographer Richard Foreman writes:

> Form in art-form isn't a container (of content) but rather a rule for generating a possible 'next move'. That's where the subject is (in the next move, dictated or made possible by the form) (2002, p. 198).

The continuation between mind and life is something observed and understood in performance design as argued in the introduction and an example of this is the way Foreman here is using his practitioner 'Know-How' (Nelson 2013) to give an analysis of form in art-form, which is similar to the way predictive processing theory has been used in this chapter to talk about *WS III*. The way Foreman talks about the form being a rule for the possibility of a next move is similar to what the scenographic contraption does as a form by orchestrating the affordances that generate the next move. The audience–participants themselves however are happenings (see chapter 4 p.122), which embody the above hierarchical ecological model and so in their case, their embodied brains are the complex and non-linear top-

down predictive flow and the sensory inputs from the environment are bottom-up, and linear, making therefore this exchange between the designed world and the audience–participant a circular, constant weave; a groundless scenography.

A scenographer, as I have outlined earlier needs to envisage this vibrancy of the 'next move', and as I have already outlined and will do so with more focus here, 4Es, free energy principle, and predictive processing can help us with both designing and understanding the 'how'. In order to do this I am introducing another scenographic tool here, that of the 'Predictive scenographer'. With this I aim to add to my research question regarding the ways with which we can use 4E cognition, the free energy principle, and predictive processing to investigate the audiences' experience of dynamic scenographic systems, and also add further to my research on the implications of the above theories on scenographic making processes.

Scenographers design complex yet in many cases simple scenographies using material, and their sensorimotor understanding to 'predict' what experience their design will generate to the audience. Exact prediction on one hand is impossible due to the varying audience–participants' responses, and on the other hand because, even if it were possible, total prediction would have generated a system that is easily navigated and (unless this is intended) would have lacked the tension that makes for an engaging dialogue between the audience–participant and the work.

Scenographers orchestrate sensibilities between material, immaterial, and social, and because this orchestration is happening live, and in many cases in their physical absence, this suggests that scenographers should register prediction error as a driving force, that needs to be accounted for

in the design as an underlying agent of ambiguity, precariousness, and uncertainty. I suggest that the understanding of prediction error as a design tool for the generation of bidirectional flow between audience–participants and the designed environment, and for achieving transformation is crucial: we are changed by error and we create error. Error is encountered and understood here as the difference between anticipated and actual sensory input, which can be experienced i.e. as surprise, as rupture, as failure etc. but needs orchestration on a practical level in order to avoid overexposure, and therefore lose its transformative power. For example: Carsten Höller's work *Test Site* (2006) at Tate's Turbine Hall was an installation of a number of steep slides available to the audience–participants as a platform for experiencing playfulness and rapture. Curator Jessica Morgan 'asserts the transformative effect on one's behaviour offered by sliding that will "subtly alter our outlook" and "provide an altered perspective" through the exhilarating and joyful experience it offers' (cited in Windsor 2011) and presents sliding as a sort of prescription that on a daily dosage can enhance our wellbeing. Windsor however points out the irony of this prescription practice as with regularity he argues '(w)hat is extraordinary soon becomes passé with overexposure' (Windsor 2011) therefore the transformative possibility of the work may evaporate. My interest rests on the how, when the initial excitement is gone we can maintain a genuine relationship between the audience and the work.

This model of the 'predictive scenographer' as the absent maestro of error I am proposing here can be better understood with an example given by Clark to show how the levels of the hierarchical prediction could be fleshed out in

the predictive processing paradigm. The example is as follows: Imagine you are playing a game between two people, person One (the higher predicting level) and person Two (the lower level). One is asked to describe a room where Two is in. One who is not in the room, knows the room as they have seen it, or been there before but now cannot actively view it. One therefore describes the room by recalling its features by saying: 'There's a vase with yellow flowers on the table in front of you'. If the case is correct then Two, who is in the room and can see it, does not say anything in response (silence), but if a piece of the information described is wrong Two will point it out. So for example if the flowers are not yellow Two will say: 'The flowers are yellow', therefore communicating only the error. So One now knows that their prediction that 'the flowers are yellow' is wrong, and they need to rephrase correcting the error of their previous phrase (i.e. using the next likely colour and saying 'The flowers are red') (2015, p.5). If there is silence from Two then there is a settlement in the description between One and Two. The message therefore in this model is in the error; if a response is accurate it does not provoke a reaction, whereas if a response (yellow flowers) is incorrect it generates a richly informative signal, the prediction error signal, in order to smooth out the prediction process. It is worth adding that the downward-flowing predictions (One) are complex and non-linear while the upward-flowing error signals (Two) are simple and linear (Clark 2015b, p.5).

A Predictive Scenographer similarly to person One in the example above who knows the space but cannot actively see it, has an overview of their design: they know what it looks like and how it functions since they have provided it. Despite the fact that this knowledge places them in a certain

'hierarchical level' of prediction it does not affect their control of the system once this is up and running, as they have no access to it. In their turn the audience–participants try to navigate the space similarly to Clark's example with person Two, by making reflexive, intellectual and more reflective meaning with their predictive embodied brains.

C10 who was part of the art team pointed out that we (the creative team) originally thought that when people go up the plinth they would look from the direction of the steep side like if it were a stage, but during the show people who decided to step up turned to look at different directions to view the space from above, and did not face only to one side (Fig. 71, 72). This happened because the design did not provide the specific convention e.g. having audience–participants looking at the elevated person only from the steep side, because the rest of the audience–participants were dispersed. The plinth design therefore provided within its constraint the freedom to the audience–participants on the plinth to decide where to look. This 'prediction error' that myself and the art-team didn't think about was the very essence of the 'genuine means', as referred to in chapter 4, from the part of the audience–participants who took this freedom to invent their own affordance and engagement with their stepping, and looking around the room when on the plinth.

Furthermore, this error can work as information for the scenographer (myself): Next time I may decide to design the plinth or a similar experience, I will take the audience–participants' embodied feedback on board, and depending on the context I will evolve the design accordingly. As mentioned in the methodology I am learning also both as an artist and as a researcher

each time from my work and the audience–participants' encounters with affordances.

Borrowing creatively from the predictive processing model I am making a case of a 'predictive scenographer' whose role is to generate patterns of expectation within the scenographic eco-niche. These patterns of expectation will in turn structure and nuance the prediction error flow for the generation of the possibilities of interrelations, and transformation with the action-readiness patterns of the audience–participants. As Clark puts it 'prediction error carries the news' and is the hero (or anti-hero) of this whole family of Baysian models' (Clark 2015b, p.4). This is very much the case with the scenographic contraption, especially in *WS III* where I have demonstrated how error can be used as a creative tool. What the contraption does is to layer top-down provocations of subtle surprisal by the way it is made, the way it is not something finished and already processed. So the bottom-up embodied errors (the audience–participants) are the scenographic heroes of *WS III* and also of the previous *Work Spaces*; their embodied brains drive the contraption system network-in-action forward.

In *WS III* the predictive scenographer was further enacted by Martha, the performer, who tried to guess the stories of the audience–participants' Facebook photographs, an impossible task (📹 02:58-03:24), and got caught and exposed sometimes by the people whose image it was. This failure to predict turned out to render the specific activity playful, funny, and awkward at times, similarly to the scenographic contraption idea (📹 06:02-06:29).

Finally the predictive processing paradigm helped me furthermore here to frame the predictive scenographer as not someone who hypothesises but who accommodates, an observation, which goes back to *WS II*. The response from B5 back then was that: 'yes it was (the scenographic environment) accommodating but in a very smooth way established a kind of I would almost dare to say ethics'. Following this up I imbricate it again with Clark's recent understanding of prediction error minimisation not as a hypothesis, but as an accommodation process:

> The task of PP systems is not to infer the best description of the world given the sensory evidence. The fundamental task, using prediction errors as the lever, is to find the neuronal activity patterns that most successfully accommodate (in action, and in readiness for action) current sensory states (Clark 2016, p.8).

This understanding of inference corroborates the scenographic contraption's understanding of not wanting to make 'pronouncements' (Eco 1989, p.142) and present the 'best description of the world' (Clark 2016, p.8) but to generate an artwork made from a collection of contraptions, or a contraption environment that most successfully accommodate the different audience–participants' embodied histories and worlds. This success is related to what I referred earlier to how a relation with the artwork can be maintained when the first surprise has faded; in short how can audience–participants be genuinely engaged (provoked to imagine, have fun, reflect, empathise etc.).

5.4.3 Appropriating the audience: experience, emotion, affect

Figure 75. An audience-participant under the uncanny hat, and another one watching them.

The scenographer (using the predictive processing theory and the free energy principle as blueprints) together with the art team, had provided a top-down organisational probabilistic design. This design was met by the incoming constant flow of bottom-up prediction errors: the audience–participants. On the other hand, each one of the audience–participants themselves (living systems), provided top-down predictions that were met by the errors of the environment. There was the creation therefore of endless circular, causal 'drafts' within the contraption-environment of *WS III*.

For *WS III* overall I would say that the statistical model of the environment that each audience–participant encountered was that of an interrelational scenography. Audience–participants who were not familiar, or not in the mood for engaging with this specific interrelational inventive model, or what they made of it depending on their 'histories' and action-readiness patters

(mood) on the day, found more resistances in following the system, or tensions at points. When this happened some either persisted on their own to get an optimal grip (similarly to participant A2 from *WS I*) or in cases got an optimal grip encouraged by people who 'recommended' parts of the work, or by watching what others did, without participating themselves, or by just leaving.

When asked during the interviews if they felt any tensions and how they dealt with these tensions the audience–participants answered providing different approaches depending on the level of the tension, and their experience. C2 for example engaged with the hat despite the fact that they felt like they were 'wearing something ridiculous', however when it came to the plinth which they described as 'dangerous' they resolved the tension by not participating. C3 had a similar reaction to the plinth by staying away from it, but enjoyed watching others having fun with it. C5 felt that they enjoyed more when they observed others overall rather than being observed; when they felt observed it felt awkward and they moved space. They didn't approach any space that was busy. C8 said that knowing others in the space made them feel comfortable 'an atmosphere that you can relax and be social', and hypothesised that they would have probably left if they didn't know anyone; and so on.

However from the audience–participants who were interviewed everyone suggested that they were at some point guided by what others were doing, either by being directly 'recommended' something or indirectly by simply watching and wanting to participate, or just by watching. For example C2 said that they 'read by looking' what other people were doing. C3 said that it was 'a word of mouth' experience C5 put it as 'you work out what to do by

seeing what others did; there was nothing that someone did to break the rules'. Consequently the audience–participants were part of the scenography that 'makes' the other audience–participants. This making is, as has been outlined so far, a multifaceted co-originating process, including in the relational forces 'affect, attention, and affordances' which 'interact to sculpt a field of solicitations out of the total landscape of available affordances' (Ramstead et al. 2016, p. 13).

Harpin and Nicholson refer to the contributions in their recently edited volume *Performance and Participation: Practices, Audiences, Politics* as responding 'to the contemporary call to attend to affect – not as a subset of human sensibility but as a relational force that exists between bodies, objects and technologies' (Harpin and Nicolson, 2017, p.7). I am adding to the above relational force the word *brains*, and aim to contribute to reflecting on the audiences' engagement with this understanding of affect as an embodied relational force, what Gallagher and Bower call 'a cocktail, a mélange of aspects that make up one's affective state' (Gallagher and Bower 2014, p.235).

This relational force was behind the word 'phishing' in the title of *WS III*. Phishing is 'a fraud perpetrated on the Internet; spec. the impersonation of reputable companies in order to induce individuals to reveal personal information' (OED, 2017). The suggested fraudulent action during *WS III* was that the installation used personal information of some people's FB profiles (with their approval), but also their personal embodied information during the installation: what they did in the space, how they felt and in relation to the space, objects, and people as part of the contraption-environment.

I attempted to achieve this in *WS III* by combining levels of familiarity of each audience–participant into the landscape of affordances using the past, present, future. For example, one level involved asking audience *in advance* of the performance for using their personal information from their profiles on Facebook: This created anticipation on the part of the audience–participants who agreed to share their information in terms of how this may be used in the installation. Another level was the 'exposing' or 'sharing' *during* the actual show, where audience–participants were projecting their faces for others to see, or describing a landscape and their voice was heard live through head-phones at another part of the installation etc.

There was one moment that was intentionally, and craftily designed to bring all these interrelational forces together however: the piñata moment. This was the 'clout' moment of *WS III*, and the attention as contagion element. During the final fifteen minutes of the installation everyone got together in the centre of the room to see the white round ball, where faces were once projected, being smashed by one of their co-audience–participants (📹 09:54-13:02).

The piñata moment as can be seen from the video created an agentive, and bodily co-ordinated common ground between bodies, objects, affect, attention, emotions, technologies, and the affordances (even the disembodied Skype participant who could hear but not see what was happening was at that point part of the piñata). There was a responsive movement occurring in relation to the main blind-folded bodies holding the bat, and a synchronised affect in the form of an embodied satisfaction which emanated when the piñata was smashed. During the post-show discussion

one of the participants referred to this embodied experience as: '*it was really fun, not even doing it but just watching: Oh you missed it! Oh you got it!*'.

In terms of the contraption idea the piñata denotes a telos but one that continues to exist, because it includes things that the audience–participants can take away with them. One of the audience–participants asked me if they could take more sweets for their daughter and this transported me to an image related to Margarita continuing to exist in some kid's belly. Another audience–participant opened their hand and showed me what they had found between the treats: a little scale model of the clown hat, that was hidden between the treats and the audience–participant kept. Somebody made a joke saying that the piñata reminded them of an egg, a Margarita egg that hatched, or following an animism route by saying it was like hitting someone.

Figure 76 (above). Attempt on smashing the piñata.
Figures 77 and 78 (below). Collecting sweets, balloons, and other treats from inside the piñata.

5.5 Interim conclusion

The audience–participants' predictive brains are understood to get a grip on multiple fields of affordances (both material, cultural etc.) simultaneously and these become interweaved in this circular causal weave between embodied brain and world. The plurality of possible fields of interrelations the audience–participants make in relation to the design stretch across interoceptive, proprioceptive, and exteroceptive information, providing 'a rich new entry point for accounts of experience, emotion, and affect: accounts that do not compartmentalize cognition and emotion, but reveal them as (at most) distinctive threads in a single inferential weave' (Clark 2015a, p.296). *WS III*'s scenography could be described as an embodied, and ecological

playful prediction algorithm that had the audience–participants as anticipating errors predicating the next moves in order to maintain the organisation of the system; or as one audience–participant referred to it in the post-show discussion 'a playground for adults'. What Foreman understands as a 'next move', and what the contraption's understanding is of these next moves following predictive processing within an expanded scenography view resonate also with Lotker's call to think about scenography as 'designing the possibilities of interrelations as something that is always in flux, something predicated upon the existence of plurality' (2015, p.16).

Part III
INSIGHTS AND CONCLUSION

Chapter 6: Towards a Theory of Cognitive Scenography
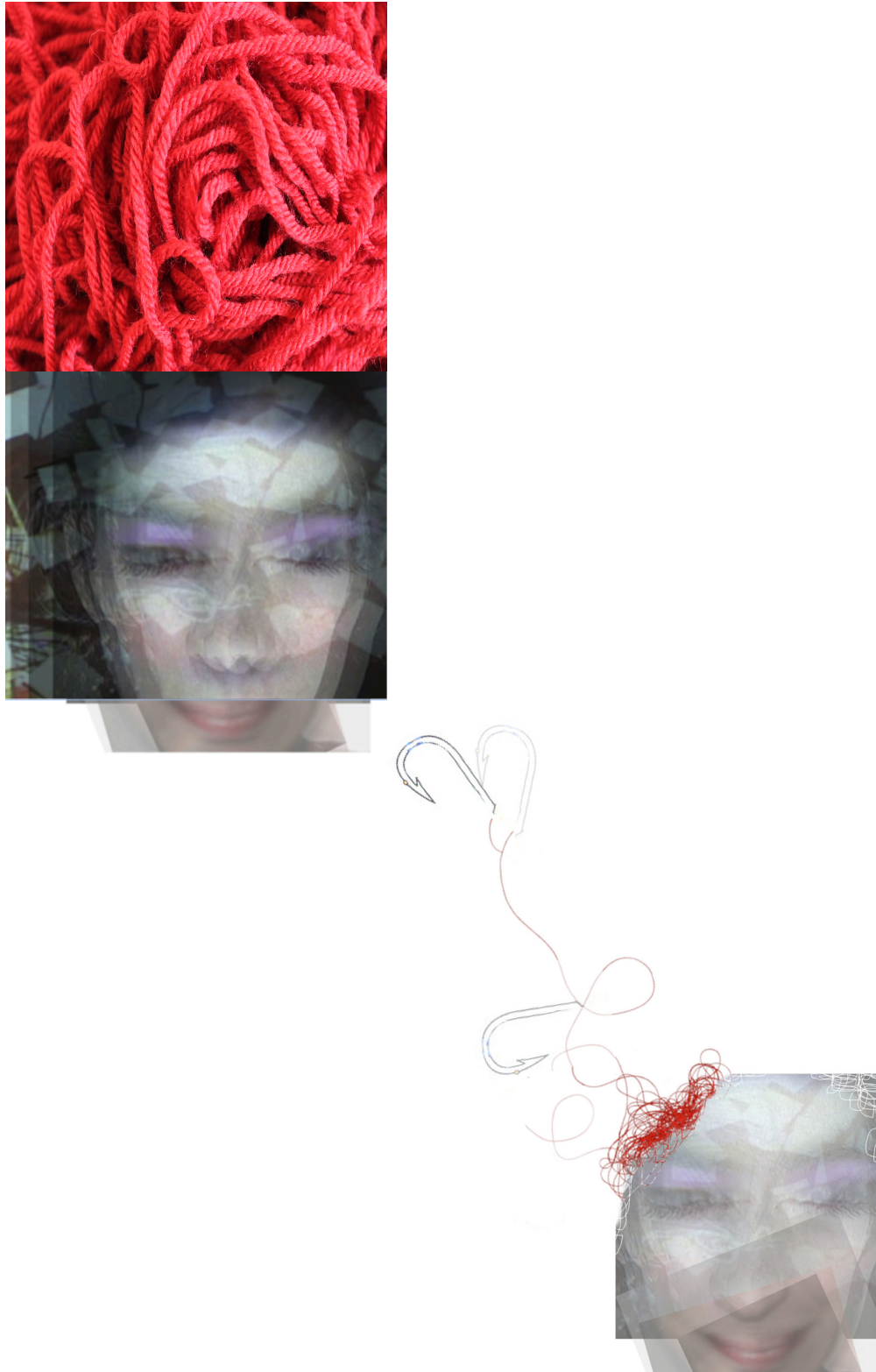
6.1 Key Findings and Claims

I will now address my research questions in order to present the key findings, and claims made through this practice-research, and outline how these may benefit the knowledge of scenographic processes and reception.

– How might current post-cognitivist theories that refer to the mind as embodied, embedded, enactive, ecological, and affective (known as 4Es) be used as critical and creative frameworks for analysing and understanding the multimodal nature of scenographic making processes and participation?

The multimodal nature of scenography is discussed in this research project in relation to scenography that is 'an artistic discipline in and of itself' (Lotker 2015, p.17), or what Hans-Thies Lehman refers to as 'visual dramaturgy' to be understood as 'one that is not subordinated to the text and can therefore freely develop its own logic' (2006, p. 93). In the *Work Spaces*, the multimodal nature of consciousness was contextualised scenographically as an equally multimodal collection of contraptions (or contraption-environments). The integration in turn of 4Es cognitive frameworks within 'scenographic contraption', brought forth the *logic* of 'scenographic groundlessness': the understanding of the experience of scenography as enacted by the audience–participants' 'coupling with the environment' (Thompson 2005).

A 'groundless scenography' places therefore scenographic operations and experience *beyond* emergence and into co-emergence, co-origination, co-relation and a bi-directional understanding between the autonomous embodied brains of the audience and the designed environment. This is a

common understanding in recent research on the relation between audiences and the scenographic world (i.e. McKinney 2008; Shearing 2015; Beer 2016). Scenography is specifically defined as 'groundless' using enactive theory in this thesis when it is understood as *equally* co-emerging through time between material-immaterial-social, and not as solely an emerging property, or one that privileges one part (i.e. material) over another.

What this research brings into this co-originating, and co-specifying understanding (apart from defining it as 'groundless') is an original way of orchestrating this groundless experience in contemporary scenography by *designing* uncertainty. This is demonstrable by using the notion of the 'scenographic contraption', which accepts similarly to the enactivist approach, and to post-structuralist understanding that there is not one way of tackling groundlessness i.e. by designing *one* centre or a telos, instead a different type of doing-thinking needs to be employed by the scenographer. In order to locate how I navigated within the 'contraption paradigm' in this research I have pinpointed three different phases of the scenographer: The 'ignorant scenographer' who, in relation to the audience–participants, generates a groundless scenography using their artist's gift of ignorance for the audience–participants to grapple and navigate using their gift of common sense. The 'Janus-faced scenographer' who, in relation to the audience–participants, thinks both with the material and the immaterial affordances for orchestrating groundless experience, and with notions of passive and active. Finally, the 'predictive scenographer' who in trying to predict their audience–participants, orchestrates error by providing top-down complex ambiguous

environments, using material and sociocultural affordances, and leaves ground for the audience–participants to respond with bottom-up responses.

These different perspectives are tools (as seen in the methodology section) that have emerged from my iterative imbrication of 4E cognitive literature within my practice. These three tools work at different levels of understanding and are all aiming together with the 'history' of the scenographer (what the scenographer brings into their work based on their past experience, knowledge, aesthetics, way of being etc.) to establish a language as doing ('languaging' (Maturana 2002)) between the audience–participants, the design, and the artists (scenographer, performers, sound designer, lighting designer etc.).

What is further important for this project is the multi-disciplinary, and inter-disciplinary approach that cognitive science takes to knowledge, and this as I said in the introduction is useful because it generates an up-to-date conversation between scenography and other contemporary knowledge. For myself and for other researchers in the field this constant generation of cross-disciplinary findings proves a valuable source of material, which cross-pollinates and develops knowledge across science, the arts, and humanities, but also offers abundant creative possibilities, if one is willing to notice these. These possibilities are also based on structural understanding (be it language structure, organic structure, material structure, structure of thought, metaphorical structure). This is because enactivism is based on the understanding of the structure of living systems as cognitive systems and provides creative, and meaning-making tools for scenographers in their doing-thinking between life, art, brain and world.

I have therefore outlined in the thesis how 4Es can be both critical and creative frameworks for analysing the multimodal nature of contemporary scenography. This however, is the case because these frameworks share a common understanding with the logic of contemporary scenography, the implications of which I will further unpack in my conclusion.

– **How might 4Es frameworks and specifically radical embodied cognitive neuroscience and the more generally applied notions of encultured cognition contribute further to understanding the workings of dynamic scenographic systems within the current landscape of hybrid, participatory performance?**

'Scenographic groundlessness' can be better understood, I argue, if we replace the Cartesian-based notion of 'perspective', or the idea of 'the set', 'the centre' or 'the stage' in scenography with the notion of 'contraption'. The notion of 'contraption' exposes the notion of 'perspective', the notion of 'the set', 'the centre' 'the stage' and even the notion of 'Cartesian dualism' to the rest of the system (audience), positioning in this way the audience–participant in a circular causal embodied relationship with the process scenography, which is also distributed to include their co-audience–participants.

By replacing 'perspective' with 'contraption' therefore, and by exposing the scenographic apparatus we move both as scenographers and audiences from 'seeing the world as it is' to accepting the world as it happens, as shifting. The experience is therefore designed in relation to the audience–participant not only in terms of a spatial three hundred and sixty degrees surround but also by asking the question 'how does scenography make the

audience' (Lotker and Gough 2013). Here frameworks like the free-energy principle (Friston 2011) have been employed in understanding further the idea of co-origination as the theory radically supports that the audience– participant embodies the design but also that the design embodies the audience–participant, in a sense that 'the physical states of the agent (its internal milieu) are part of the environment' (Friston 2011, p.89). Below (Fig. 80) is an updated diagram, which builds on the one on p.6 regarding the relation between what I call the making of our worldviews and the making of the stage. It suggests the contraption as the appropriate critical, analytical, and practical tool for understanding current hybrid participatory performance.

Figure 80. An updated conceptualisation attempt of the contraption theory following Bal and Bleeker, and Friston's free energy principle. The structure of a contraption as critical, analytical, and practical tool for tackling, transforming, and orchestrating groundlessness in participatory scenography.
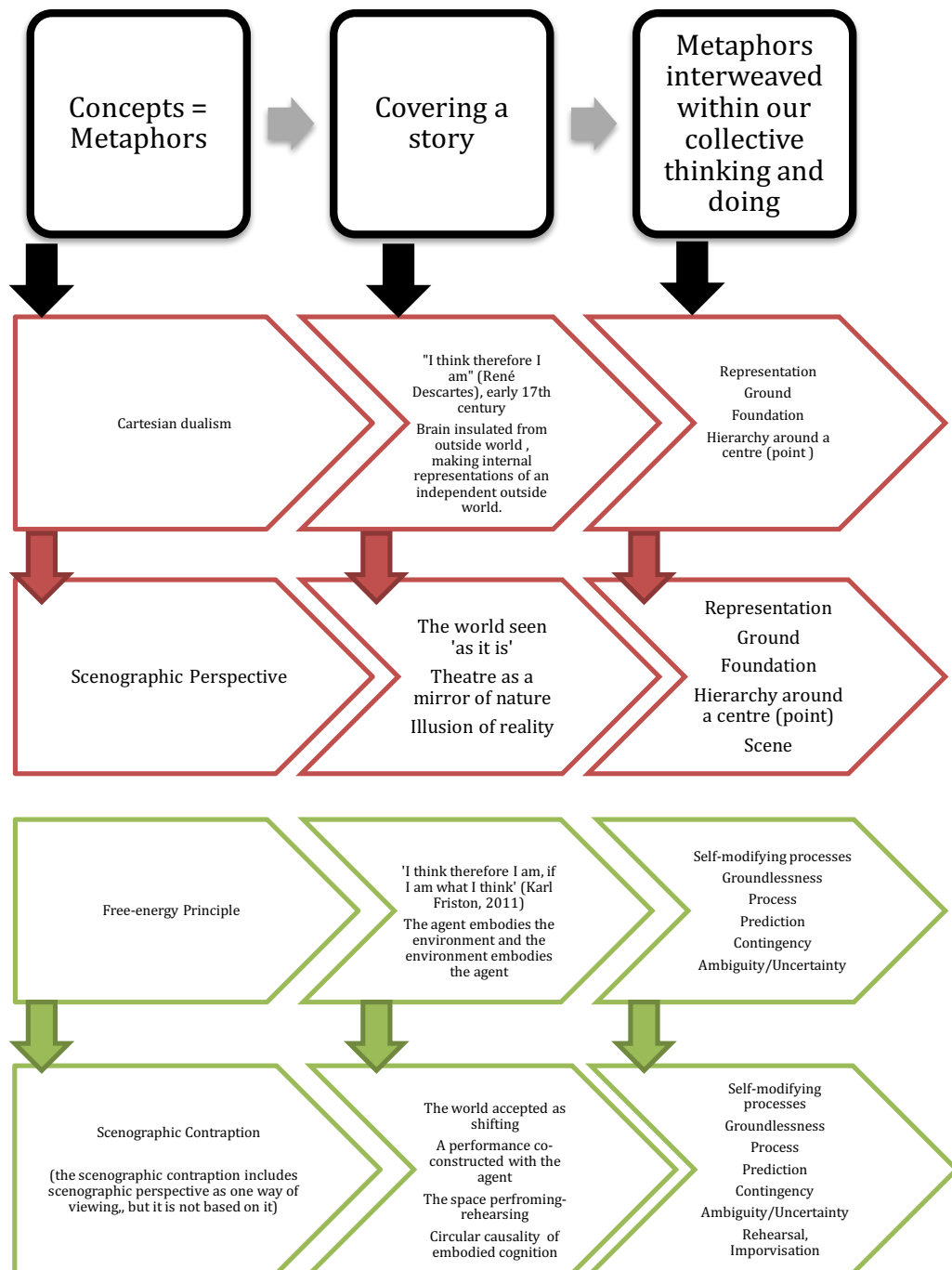
The above diagram shows the causal relationship between the scenographic

contraption and the free energy principle, and outlines the relation between

4E frameworks –which understand cognition as co-constructed between

agent and environment– and the study of contemporary scenography in a post-representational performance landscape. The juxtaposing example in the diagram between the 'scenographic perspective' and contraption is offered in order to make my argument accessible. I am not suggesting that chronologically there haven't been further understandings between the two (i.e. the stage as machine by constructivists like Meyerhold in the early 20th century etc.).

The multimodal nature of scenographic making processes in participatory formats as understood through this project is an iterative exploration. This is because both the scenographer, and the scenography 'learn' each time from the audience–participants, because the space is performing-rehearsing; similarly to a conventional theatrical practice in which the scenographer 'learns' by attending rehearsals and by observing the actors/performers. This insight of learning how to learn is an enactive view. It generates an interrelation not only between the audience–participants and the design but also between the scenographer and the audience–participants. The 'predictive scenographer' sees what their design can unexpectedly afford more than what they had predicted. It generates a new type of scenographer who visits their work and by being in the work and exploring, by being vigilant, they learn more from the audience–participants' 'embodied feedback' about their own work. An extension of this thinking would be that audience–participants also engage in this dynamic 'learning' as observed by C2 who attended both *WS II*, and *WS III* and said they came into the work the second time having 'information in advance'.

– **How might the empirical metaphorical models of consciousness of Baars (1988), Dennett (1991) and Edelman and Tononi (2000) and the predictive processing framework (Clark 2013b) be employed and applied imaginatively as creative methods for developing the aesthetics of dynamic performance/scenography systems?**

Bleeker's (2005; 2008), and later Germano's (2013) understanding of the dialogic relation between the theatrical apparatus and perception, and my argument regarding the understanding of contemporary scenography and participation 'as contraption' have been imaginatively merged in my Performance Experiments *WS I*, *WS II*, and *WS III* with contemporary cognitive theories of consciousness, perception, and cognition.

I have argued that computational and connectionist models of rhizomes, multiple drafts, brain-webs, and predictive machines can be inspiring blueprints for giving access to the structure, both material and immaterial, of groundlessness and scenographic systems networks-in-action. The 'scenographic systems networks-in-action' I created during this research project can be unpacked as occurring between the autonomous living entities of me (as an autonomous living being, 'a happening' (Maturana 2011, p.146)), my collaborators (each one as an autonomous living being, 'a happening' (ibid.)), and the audience–participants (again each audience–participant member an autonomous living being, 'a happening' (ibid.)) and are scenographic contraptions.

The scenographic contraption has occurred using my 'artist's gift of ignorance', and I have an 'acceptance of the world as it is, in full crisis, by formulating a new grammar that rests not on a system of organization but on an assumption of disorder' (Eco 1989, p. 141). The notion of crisis as Eco

puts it needs unpacking as crisis can take many forms. The contemporary crisis I argue can be traced in the embodied or embedded in the world 'brainweb' or the 'rhizome'. It is the networks, and the communication through these networks (like the Internet for example) that is in crisis, as it is a medium we have not managed to master, and probably will never be able to master, by giving it a centre. Therefore, a different kind of mastering, or approach to this crisis needs to be put into place, one that is similar to the contraption, an exposed self-generating construction.

The crisis that the contraption embodies is related to what groundlessness generates (anxiety, rapture, playfulness, reflection, malfunction, appropriation, life itself etc.). Additionally, a contraption brings us face to face with its history: one can see how the pieces of the contraption are put together, and therefore make assumptions on how they are made, what stages they may have gone through, what they have encountered. And in this sense, as mentioned above, the contraption is revealing, it reveals itself to the audience, it does not attempt to hide or disguise its malfunctions, its precarious nature exposing thus the artist-scenographer-inventor who made it; this exposure is an invitation to the audience to contribute critically, to judge, observe, participate, collaborate, conspire, make their own stories, and allow themselves to be exposed.

The creative fleshing out of the empirical metaphorical models of consciousness, perception, and cognition, which I have named 'scenography in the flesh' contributed to the aesthetics of scenography 'as contraption' with the use of ambiguity, precarity and uncertainty as elements for organising top-down and bottom-up dynamics that drive the scenography forward. The agentive capacities of contraption-props that occurred by using

this method revealed their power to actively orchestrate not only space, but also affect and feelings. This insight was taken further with each iteration (*Work Spaces*) by creating or adjusting the nodes and associations within the system scenography.

– **What are the implications of the findings of 4Es, and embodied predictive processing (PP) on scenographic making processes?**

At the same time as tackling the overall architecture of groundlessness using contraption, I have also dealt with the building blocks of groundlessness, which are the co-originating relations between the action-readiness of the embodied brains of the audiences and the affordances (material, immaterial, social) generated by the design. I will zoom in now into how the expanded radical embodied notions of affordances, encultured cognition, and prediction error have helped me in understanding the dynamic workings of participatory scenographies, and have contributed to vocabularies for talking about these complexities.

I will refer here to a particularly prominent example of this groundlessness that was designed using the contraption approach and frameworks of sociocultural affordances during *WS II*. The overall scenography in *WS II* co-originated from the orchestration of the audience–participants' attention, understood as the relational patterns between the audience–participants and the material and sociocultural affordances provided by the design. Specifically, in the case of the 'buttons area' behind the scrim in *WS II* (see Fig. 38) the theatrical apparatus was playfully exposed as a 'performing-rehearsing' or 'on stage-backstage' scenography without a hierarchy around a centre point but various places of focus. These addressed the audience–

participants' attention simultaneously through different focal points, and cultural affordances related to the theatrical apparatus. The in-betweens of 'performing-rehearsing', 'back stage-on stage' allowed for pockets of reflection and rendered scenographic participation 'as inference'. The contraption therefore positioned the sociocultural affordances related to 'performance-rehearsal', and 'on stage-backstage' as its tools. Sociocultural affordances, in this thesis related to exposing the theatre apparatus, helped me to develop my crafting of the immaterial in relation to the material, and this has been the value of the 4E frameworks throughout this project.

I will also refer here to the 'predictive scenographer' as an example to demonstrate how these frameworks have helped me in understanding that affordances depend on the action-readiness of the audience–participant, and are therefore also co-relational, and even co-originating. This is particularly helpful when one wants to design a context-sensitive scenography as it places the scenographer in a hypothetical dialogic relationship with the potential audience–participants' multiple and different skills, and brings forth together with 'prediction' the 'scenographic error' and 'contingency' as tools for generating participation. The co-origination therefore extends beyond the actual scenography to include also the disembodied scenographer, who uses material affordances playfully, and craftily as 'bait' to get the audience–participants to be part of the contraption props (enter into, sit etc.), but also the sociocultural affordances as another artful way of 'phishing' the 'immaterial' personal response of the audience (i.e. feelings, affect, senses raging from rapture, disgust, to drinking alcohol and being transported imaginatively to your holidays in Rome, and sharing this experience with others). At the same time though the above are not

enforced on the audience–participants, and do not happen within a pre-specified order, but unfold and enfold in relation to the environment.

A corollary of the above is that the design is not only that which is seen but also that which is to be discovered; and the audience–participant needs to work towards inventing and sharing their experience for the scenography to unfold; like for example in *WS III* the layer of 'feeling the sound' via the vibrations of the plinth, that was 'recommended' from one audience–participant to the other. Occasionally it is also the case that the design *is* what is not supposed to be seen for example the backstage aesthetics inside the 'mask booth' during *WS III*; or the hand-made and often rough aesthetics of certain parts of the theatre props that can be seen because they are accessible to the audience–participants, and not presented as an illusion from afar.

I hope that in the *Work Spaces* I have demonstrated how this thinking with material and sociocultural affordances has been developed iteratively becoming with time a tool of knowledge for the scenographer in doing-thinking between material-immaterial, and by learning from their audience–participants.

– **What are the implications of the findings of 4Es, and predictive processing (PP) on scenographic reception research?**

– **In what ways might we use 4Es and predictive processing (PP) to investigate the audiences' experience of dynamic/scenographic systems?**

4Es and predictive processing were the tools that helped me in rendering the 'tacit' 'explicit' (Nelson 2013, p.43) by enabling me, after the iterative process

of this research to 'tell'[7] more of what I knew as a practitioner about my understanding of scenography, contraption, and groundlessness. The *Work Spaces* I generated are the praxis (action) that led me to insights of orchestrating scenographic experience, my poiesis (creation, production), and to develop a language to be able to communicate my tacit knowledge such as 'contagious scenography', the 'clout effect', 'scenographic contraption' etc. (see Appendix C).

What is the benefit of this marriage? Why wouldn't I be able to come up to the same insights/conclusions by using only philosophy? I hope I have argued sufficiently that cognitive science can introduce something that is very important for a practitioner-researcher in scenographic thinking-doing and this is the providing of the form of groundlessness as a circular causality of embodiment for understanding what scenography 'as contraption' does.

Following Charles Whitehead, another valuable contribution of cognitive science to theatre and performance lies in science's ability to 'emancipate us from the negative aspects of our own cultural heritage' (2004, p.87) one of these aspects, I will add, being Cartesian dualism. This research has investigated how this emancipation may happen, and what might proceed after it has happened when we start thinking-doing beyond representation.

4Es and predictive processing also provided me with the tools to engage in a dialogue with other performance scholarship and practice and in cases to unpack further some understandings. For example, the understanding of 'participation as perception' (Harpin and Nicholson 2017) viewed through the

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[7] To 'tell' here is following Michael Polanyi when he introduces human knowledge and observes that 'we know more than we can tell' (1966, p.4). My practice-research helped me to be able to 'tell' more of what I knew as a practitioner.

main radical embodied prism of perception as 'action-readiness states' (Bruineberg et al. 2016) dissolves the idea of 'participation as perception' (Harpin and Nicholson 2017) into what I would refer to as 'participation as patterns of action-readiness' (working in reducing prediction error). What this practically means is the understanding of the body of the audience–participant being not just the means but also an end of being a scenographic contraption system, and has helped me as a scenographer to articulate the experience of the audience–participant as shifting and as co-originating with the environment.

This dialogue through doing-thinking with contemporary post-cognitivist approaches, where action is perception and our action-readiness embodied brains are in a forward flow of sense-making, eliminating 'surprisal' (Bruineberg et al. 2016) has enriched both the creative and analytical skills in understanding the workings of the dynamic scenographic systems *WS I*, *II*, and *III*. Dynamic scenographic systems are 'scenographic systems networks-in-action', another term for a groundless scenography, which stresses the nuance that the co-originating aspect of scenography is not only circular between its members and the environment but also distributed to include social interaction. It is both the distributed and circular causality that generates the 'groundless scenography', which has the scenographic contraption as its invisible, and visible, material, and immaterial lawmaker. Enactivism, embodied, and ecological frameworks of cognition can therefore aid us to understand groundlessness in contemporary performance both as form and as method, by providing the models and the vocabularies for articulating the relationship between action and perception.

In extent, the concept of a 'groundless scenography' and 'scenographic contraption' can be applied to any scenography. For example, 'scenographic groundlessness' can be used to explain the work of scenographer Katrin Brack, who uses single materials that interact with the bodies of the performers on stage. Brack's scenography of *The Hermannsschlacht* (2010) consisted of large pieces of foam which worked with or against the bodies of the performers and were used in juxtaposition to the concept of war, in order to give the essence of a battleground. Brack's use of foam, can be referred to as a 'scenographic contraption' and 'what it does' (McKinney and Palmer 2017) can be examined through the prism of groundlessness, an unfolding and enfolding of the environment, the materials and the bodies of the performers, but also the action-readiness patterns that these juxtapositions generated to the audience's embodied brains. The 'how it does it' can be explored analytically using post-cognitive frameworks, but I don't have the space to expand on this here. A groundless understanding can also be applied to historic scenographic examples such as the *Teatro Olympico* (circa 1580). This is an ironic turn for the 'scanographic contraption' as the Renaissance era is so precious about perspective and the vanishing point to the extent, however, that a wrong move or wrong seating may generate 'error', and it therefore renders the whole apparatus precarious and a contraption. I will not go further into analysing these examples at this stage, due to the limitations of this research, but I hope I can demonstrate the potential for further application and development of the methods and forms outlined in this research.

6.2 Conclusion: Towards a CogScenography – Cognition, Contraption, Metaphor, Consciousness, Groundlessness

This thesis, as mentioned earlier, is contributing to the understanding of scenography within the 'scenographic turn' (coined by Collins and Aronson in 2015) as a discipline 'in and of itself' (Lotker 2015, p.17); a discipline that eludes being pinned down and defined, to the extent that I argue is similar to consciousness and cognition. Maturana and Varela observe that:

> living systems are cognitive systems and living as a process is a process of cognition. This statement is valid for all organisms, with and without a nervous system (1980, p.13).

Since the 'scenographic systems networks-in-action', are comprised of living systems (audience, artists), I argue that they can be considered themselves cognitive systems. Therefore, the scenographic contraption is a cognitive system and a living system, meaning that it does not pre-exist or exist by itself, but it happens in process. This process is cognitive, in the post-cognitivist understanding of the word, meaning that it develops in a mutual enfolding relationship with the material, immaterial and social and is therefore groundless. 'Scenographic groundlessness' is a conceptual framework for understanding the experience of scenography as a co-originating process of enfolding and unfolding between the audience, their co-audience, the artist(s), and the designed environment. My aim is the generation of inclusive, transformative, and inspiring work, to help audiences navigate critically and to operate genuinely within a contemporary performance landscape without foundations.

An original theory of 'scenography as cognition' and 'cognitive scenography' (CogScenography) is therefore introduced and investigated in this thesis based on my praxis of the 'scenographic contraption'. I am suggesting the

original notion of 'contraption' as new methodology and ideology for understanding contemporary scenography, and participation 'as contraption'. The contraption contextualizes in a 'scenographic' (Hann, forthcoming) manner the processes, ambiguity, and dynamics of consciousness and cognition and relates these to the current groundless landscape of theatre and performance.

The overall aim of the theory of a CogScenography is to generate genuine relationships between the space and the audience through subtle yet assertive ways of orchestrating the audience–participants' being in the space. These subtle ways need backing up by theories that share this subtlety. Specifically, I have generated original practice of the hybrid participatory scenographic kind (*Work Spaces*), and I have used in my analysis of this practice action-oriented cognitive theories, the agent-environment coupling principle, and embodied predictive processing theory, all of which entail non-representational understandings of engagement with the world. In the *Work Spaces* I have developed the following insights towards a theory of a CogScenography, however these can be extended to include other forms of performance design and performance practice.

A scenography as cognition/ a cognitive scenography/ CogScenography is governed by laws of a scenographic contraption and generates a groundless scenographic experience. This means that it:

– Provides non-binary material-immaterial context for the audience–participants to respond with action-readiness patterns, and sets of sensorimotor skills going beyond representational understandings of scenography.

– Mobilises the audience–participants, and the performers using affordances and prediction error.

– Leaves space for reflection, and for imagination.

– Transforms by using material from the audience (drawings, making skills, information, voice, presence, movement etc.).

– Enters into dialogue with cognitive science by drawing imaginatively from organisational structures of living (therefore cognitive) systems and consciousness, and by understanding performance experience as groundless.

– Contributes to a vocabulary for talking about material-immaterial-social relationships by applying 4Es frameworks to develop new approaches and habits of embodied and ecological audiencing and spectating beyond representation.

This study accepts that the above insights and the work itself do not provide an absolute scenographic method, a unique answer to what is scenography, or a one-way solution of how to make scenographies. It provides however, a number of shifting methodological tools or practice tools (see Appendix C) and a way of thinking about performance design and practice that contributes to making and thinking in a scenography as process and exchange with the audience.

In terms of where this research project leaves the scenography and cognition exchange in the field, I hope that the understanding of scenography 'as contraption', my unpacking of scenographic experience as 'groundless', and the three perspectives of a scenographer (the ignorant, the Janus-faced, and the predictive scenographer) have contributed to the performance-cognition debate regarding 'the importance, relevance, and

applications of cognitive science to the equally multifaceted modes of theatre and performance' (Shaughnessy 2013, p.7).

This thesis also agrees –and has elaborated through practice– with Di Benedetto's argument that 'if scenography takes up the challenges of neurobiology, the potential for novel multiverses are infinite' (2013, p.190). However, it also addresses an aspect that is related to the transformative power of art, and its philosophical extension and by reversing Di Benedetto's (2013, p.190) earlier call I posit that: If cognitive science takes up the challenges of creative and 'contraption' methodologies, the potential for novel multiverses are infinite. Indeed, there is a growing interest in bringing art more closely in conversation with post-cognitive disciplines, which I argue that it presents an 'artistic turn' of the cognitive field, to which this study is contributing (see Appendix A), and aims to continue contributing in the future. For example, the contextualisation of consciousness and cognition as 'contraption' may be useful, both as form and method, for understanding the circular causality of embodiment in the free-energy principle.

Science is turned towards finding efficient and successful solutions to given tasks, but the more science delves into cognition the more it realises the need for messier methods of understanding the ambiguity of human nature. The multimodal methodologies of performance may help with generating novel perspectives of our embodied selves, our social relationships, and the world.

References

Abrams, J. 2013. Mise en plate: The scenographic imagination and the contemporary restaurant. *Performance Research*, **18**(3), pp.7-14

Alston, A. 2013. Audience participation and neoliberal value: Risk, agency and responsibility in immersive theatre. *Performance Research*, **18**(2), pp.128-138.

Aronson, A. 1981. *The history and theory of environmental scenography*. Ann Arbor: UMI Research Press.

Aronson, A. 2005. *Looking into the abyss: Essays on scenography*. Ann Arbor: University of Michigan Press.

Aronson, A. 2008. The power of space in a virtual world. In: Hannah, D. and Harsløf, O. ed. *Performance Design.* Copenhagen: Museum Tusculanum Press, pp.23-37.

Aronson, A. and Collins, J., 2016. Editors' overview. *Theatre and Performance Design* [online] **2**(1-2), pp.3-4. [Accessed 15 October 2016]. Available from: http://www.tandfonline.com/doi/full/10.1080/23322551.2016.1183284?scroll=top&needAccess=true

Artaud, A. 1958. *The theater and its double*. New York: Grove Press.

Baars, B.J. 1993 [1988]. *A cognitive theory of consciousness*. Cambridge: Cambridge University Press.

Baars, B.J. 1998. *In the theater of consciousness: The workspace of the mind*. Oxford: Oxford University Press.

Baars, B.J. 2002. The conscious access hypothesis: Origins and recent evidence. *Trends in Cognitive Sciences* **6** (1). pp. 47-52.

Baars, B.J. and Franklin, S. 2007. An architectural model of conscious and unconscious brain functions: Global workspace theory and IDA. *Neural Networks,* **20**. pp. 955-961.

Bakhtin, M.M. 2010 [1993]. *Toward a philosophy of the act*. Austin: University of Texas Press.

Barad, K. 2007. *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham: Duke University Press.

Barthes, R. 1972 [1957]. *Mythologies*. New York: The Noonday Press.

Baugh, C. 2013. *Theatre, performance and technology: The development and transformation of scenography*. Basingstoke: Palgrave Macmillan.

Bayliss, A., Hales, D., Palmer, S. and Sheridan, J.G., 2009. (Re) searching through play: Play as a framework and methodology for collaborative design processes. *International Journal of Arts and Technology*. **2**(1-2), pp.5-21.

BBC. 2016. *How our Brains become 'disembodied'*. [Online]. [Accessed 20ᵗʰ October 2016]. Available from: http://www.bbc.co.uk/news/video_and_audio/headlines/37705375

Beer, T. 2016. *Ecoscenography: The paradigm and practice of ecological design in the performing arts*. PhD Thesis. University of Melbourne.

Beer, T. 2016. Ecomaterialism in scenography. *Theatre and Performance Design*, **2**(1-2), pp.161-172.

Bennett, J. 2010. *Vibrant matter: A political ecology of things.* Durham: Duke University Press.

Bishop, C. 2012. *Artificial hells: Participatory art and the politics of spectatorship*. London, New York: Verso Books.

Bishop, M. 2014. AISB50: Artificial Intelligence at a new branch point. *AISB Quarterly, the Newsletter of the Society for the study of Artificial Intelligence and Simulation of Behaviour.* **139**,pp.11-17.

Blaikie, N. 2000. *Designing social resear*ch. Cambridge: Polity Press

Blair, R. 2007. *The actor, image, and action: Acting and cognitive neuroscience*. London: Routledge.

Blair, R. 2009. Cognitive neuroscience and acting: Imagination, conceptual blending, and empathy. *TDR/The Drama Review*, **53**(4), pp.93-103.

Blair, R. and Cook, A. 2016. *Theatre, performance and cognition: Languages, bodies and ecologies*. London: Bloomsbury Publishing.

Bleeker, M. 2005. See me, feel me, think me: The body of semiotics. in Bleeker, M., van Heteren, L., Kattenbelt, C. and Vuyk, K. eds. *Theater Topics 1: Multicultureel Drama?* Amsterdam: Amsterdam University Press, pp. 109 – 110.

Bleeker, M. 2008. *Visuality in the theatre: The locus of looking*. Basingstoke: Palgrave Macmillan.

Bleeker, M. and Germano, I. 2014. Perceiving and believing: An enactive approach to spectatorship. *Theatre Journal*, **66**(3), pp.363-383.

Bourdieu, P. 1990. *The logic of practice*. Cambridge: Polity Press.

Brejzek, T. ed. 2011. *Expanding scenography: On the authoring of space*. Prague: The Arts and Theatre Institute.

Broadhurst, S. 1999. *Liminal acts: A critical overview of contemporary performance and theory.* London: Cassell.

Bruineberg, J. and Rietveld, E. 2014. Self-organization, free energy minimization, and optimal grip on a field of affordances. *Frontiers in Human Neuroscience*, **8**(599), pp.1-14.

Bruineberg, J., Kiverstein, J. and Rietveld, E. 2016. The anticipating brain is not a scientist: The free-energy principle from an ecological-enactive perspective. *Synthese*, pp.1-28.

Cage, J. 1952. *Untitled event*. John Cage. dir. Black Mountain College, North Carolina. First performance: 1952.

Cage, J. 1959. *Water walk*. John Cage. dir. First performance: Feb 5 1959.

Caillois, R. 2001 [1958]. *Man, play and games*. Champaign: University of Illinois Press.

Cappuccio, M. and Froese, T. 2014. *Enactive cognition at the edge of sense-making: Making sense of non-sense.* Basingstoke: Palgrave Macmillan.

Carver, G. 2013. Between nothing and everything: The summit of Mount Everest. *Performance Research*, **18**(3), pp.15-18.

Chemero, A. 2009. *Radical embodied cognitive science*. Cambridge, Massachusetts: MIT Press.

Chalmers, D.J. 2010. *The character of consciousness*. New York: Oxford University Press.

Chalmers, D. 2014. *How do you explain consciousness?* [Online]. March 2014, TEDtalk VancouverBC [Accessed 20th August 2014]. Available from: https://www.ted.com/talks/david_chalmers_how_do_you_explain_consciousness/transcript

Clark, A. 1997. *Being there: Putting brain, body, and world together again*. Cambridge: MIT press.

Clark, A. and Chalmers, D. 1998. The extended mind. *Analysis.* **58**(1), pp.7-19.

Clark, A. 1999. An embodied cognitive science?. *Trends in Cognitive Sciences.* **3**(9), pp.345-351.

Clark, A. 2008. *Supersizing the mind: Embodiment, action, and cognitive extension*. New York: Oxford University Press.

Clark, A. 2013a [2001]. *Mindware: An introduction to the philosophy of cognitive science*. New York: Oxford University Press.

Clark, A., 2013b. Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral and Brain Sciences.* **36**(3), pp.181-204.

Clark, A. 2015a. *Surfing uncertainty: Prediction, action, and the embodied mind*. New York: Oxford University Press.

Clark, A., 2015b. Embodied prediction. In: Metzinger, T. & Windt, J.M. eds. *Open MIND*: **7**(T). Frankfurt am Main: MIND Group, pp.1-21.

Clark, A. 2016. Busting out: Predictive brains, embodied minds, and the puzzle of the evidentiary veil. *Noûs*. **51**(4) pp. 1-27.

Cohen, D. 1993. *The development of play*. London: Routledge.

Colombetti, G. 2007. Enactive appraisal. *Phenomenology and the Cognitive Sciences*, **6**(4), pp.527–546.

Colombetti, G., & Thompson, E. 2007. The feeling body: Toward an enactive approach to emotion. In Overton, W., Mueller, U. & Newman, J. eds. *Body in mind, mind in body: Developmental perspectives on embodiment and consciousness*. New Jersey: Laurence Erlbaum, n.p.

Cook, A. 2009. Wrinkles, wormholes, and Hamlet: The Wooster Group's Hamlet as a challenge to periodicity. *TDR/The Drama Review*, **53**(4), pp.104-119.

Cook, A. 2013. Introduction: Texts and embodied performance. In: Shaughnessy, N. ed. *Affective performance and cognitive science: Body, brain, and being*. London: Bloomsbury Publishing. pp.83-90.

Crimp, M.1997. *Attempts on her life*. London: Faber & Faber.

Deller, J. 2017. *What is the city but the people? Created by the people of Manchester.* Richard Gregory. dir. Manchester International Festival. First performance: 29 June 2017.

Demastes, W.W. 2002. *Staging consciousness: Theater and the materialization of mind*. Ann Arbor: University of Michigan Press.

Dennett, D.C. 1991. *Consciousness explained*. London: Penguin.

Dennett, D. 1996. *Consciousness: More like fame than television*. [Unpublished manuscript Online]. [Accessed 20 August 2014]. Available from http://pp.kpnet.fi/seirioa/cdenn/concfame.htm

Dennett, D. 2001. Are we explaining consciousness yet?. *Cognition*, **79**(1), pp.221-237.

Derrida, J. 1997 [1967]. *Of grammatology*. Baltimore: The Johns Hopkins University Press.

Derrida, J. 1993 [1970]. Structure, sign, and play in the discourse of the human sciences. In Natoli, J. and Hutcheon, L., eds. *A Postmodern Reader*. Albany: State University of New York Press. pp. 247-265.

Dewhurst, J. 2016. Computing mechanisms and autopoietic systems. In Miller, C. ed. *Computing and philosophy*. New York: Springer, pp. 17-26.

Di Benedetto, S. 2010. *The provocation of the senses in contemporary theatre*. London: Routledge.

Di Paolo, E. 2005. Autopoesis, adaptivity, teleology, agency. *Phenomenology and the Cognitive Sciences*. **4**(4), pp. 439–452.

Di Paolo, E.A. and Thompson, E. 2014. The enactive approach. In: Saphiro, L. ed. *The Routledge handbook of embodied cognition*, London: Routledge, pp.68-78.

Donald, M. 2014. Entided, enwatered, enwinded: Human/more-than-human agencies in site-specific performance. In: Schweitzer, M. and Zerdy.J., eds. *Performing Objects and Theatrical Things*. Basingstoke: Palgrave Macmillan, pp.118-131.

Donald, M., 2016. The performance 'apparatus': Performance and its documentation as ecological practice. *Green Letters: Studies in Ecocritism*. **20**(3), pp.251-269.

Dotov, D. and Chemero, A. 2014. Breaking the perception-action cycle: Experimental phenomenology of non-sense and its implications for theories of perception and movement science. In: Cappuccio, M. and Froese, T., eds. *Enactive cognition at the edge of sense-making*. Basingstoke: Palgrave Macmillan, pp. 37-60.

Drinko, C.D. 2013. *Improvisation for the mind: Theatrical improvisation, consciousness, and cognition*. Basinsgtoke: Palgrave Macmillan.

Dunne, M., Pryor, J. and Yates, P. 2005. *Becoming a researcher: A research companion for the social sciences: A companion to the research process*. London: McGraw-Hill Education.

Eco, U. 1989. *The Open Work*. Cambridge: Harvard University Press.

Edelman, G. M. and Tononi, G. 2000. *A universe of consciousness: How matter becomes imagination*. New York: Basic Books.

Engel, A.K., 2010. Directive minds: How dynamics shapes cognition. In: Stewart, J., Gapenne, O., Di Paolo, E., eds. *Enaction: Towards a new paradigm for cognitive science*. Cambridge: MIT Press. pp. 219-243.

Engel, A.K., Maye, A., Kurthen, M. and König, P. 2013. Where's the action? The pragmatic turn in cognitive science. *Trends in Cognitive Sciences*, **17**(5), pp.202-209.

Fauconnier, G. and Turner, M. 2002. *The way we think: Conceptual blending and the mind's hidden complexities*. New York: Basic Books.

Falletti, C., Sofia, G. and Jacono, V. eds. 2016. *Theatre and cognitive neuroscience*. London: Bloomsbury Publishing.

Fite-Wassilak, C. 2016. *Ha-ha crystal.* London: Copy Press.

Fodor, J.A. 1998. *Concepts: Where cognitive science went wrong*. New York: Oxford University Press.

Foreman, R. 2002 [1985]. How to write a play. In Huxley, M. and Witts, N. eds. *The twentieth century performance reader*. London, New York: Routledge, pp.191-201.

Friston, K. 2010. The free-energy principle: A unified brain theory? *Nature Reviews Neuroscience*, **11**(2), p.127.

Friston, K. 2011. Embodied inference: Or 'I think therefore I am, if I am what I think'. In: Tschacher, W. & Bergomi, C. eds. *The implications of embodiment (cognition and communication).* Exeter: Imprint Academic. pp.89– 125.

Friston, K. 2013. Active inference and free energy. *Behavioral and brain sciences*. **36**(3), pp.212-213.

Froese, T. and Ikegami, T. 2013. The brain is not an isolated "black box," nor is its goal to become one. *Behavioral and Brain Sciences*, **36**(3), pp.213-214.

Gallagher, S. 2005. *How the body shapes the mind*. Oxford: Clarendon Press.

Gallagher, S. and Bower, M. 2014. Making enactivism even more embodied. *Avant.* **V**(2), pp. 232-247.

Germano, I. 2013. *Between stage, brain and body: Using cognitive science to flesh out the embodied act of looking*. Master's thesis, Utrecht University.

Gibbs, R.W. 2006. Metaphor interpretation as embodied simulation. *Mind & Language*, **21**(3), pp.434-458.

Gibbs, R.W. 1994. *The poetics of mind: Figurative thought, language, and understanding*. Cambridge: Cambridge University Press.

Gibson, J.J. 1986 [1979]. *The ecological approach to visual perception*. New York: Psychology Press.

Graham, K. 2016. Active roles of light in performance design. *Theatre and Performance Design*. **2**(1-2), pp.73-81.

Hann, R. 2018. [forthcoming] *Beyond scenography: Cultures of performance design.* London: Routledge.

Hann, R. 2015. Practice matters: Arguments for a 'second wave' of practice research. 28 July. *The Future of Practice Research.* [Online]. [Accessed 20 July 2017]. Available from: https://futurepracticeresearch.org/2015/07/28/practice-matters-arguments-for-a-second-wave-of-practice-research/

Hannah, D. and Harsløf, O. eds. 2008. *Performance design*. Copenhagen: Museum Tusculanum Press.

Hannah, D. 2011. Event-space: Performance space and spatial performativity. In: Pitches, J. and Popat, S. eds. *Performance Perspectives: A critical introduction*. Basingstoke: Palgrave Macmillan. pp.54-61.

Harpin, A. and Nicholson, H. eds. 2017. *Performance and participation: Practices, audiences, politics*. Basingstoke: Palgrave Macmillan.

Haseman, B. 2006. A manifesto for performative research. *Media International Australia incorporating Culture and Policy*, **118**(1). pp.98-106.

Heuman, L. 2014. The embodied mind: An interview with philosopher Evan Thompson. *Tricycle.* [Online]. **Fall 2014.** [Accessed 10th June 2017]. Available from: https://tricycle.org/magazine/embodied-mind/

Hohwy, J. 2013. *The predictive mind*. New York: Oxford University Press.

Höller, C. 2006. *Test site.* [Installation]. At: London: Turbine Hall, Tate Modern.

Howard, P. 2009. *What is scenography?* London: Routledge.

Huizinga, J. 1949. *Homo ludens: A study of the play element in culture*. London: Routledge.

Hurley, S. 1998. *Consciousness in action*. Cambridge: Harvard University Press.

Hutchins, E. 2014. The cultural ecosystem of human cognition. *Philosophical Psychology*, **27**(1). pp.34-49.

Ingold, T. 2011. *Being alive: Essays on movement, knowledge and description*. London, New York: Routledge.

Izzo, Gary. 1997. *The art of play: The new genre of interactive theatre*. Portsmouth: Heinemann.

James, R. D. (aka Aphex Twin). 2017. *Aphex Twin live at Field Day*. Victoria Park, London. 3 June 2017.

Jeffares, B. 2010. The co-evaluation of tools and minds: Cognition and material culture in the hominin lineage. *Phenomenology and the Cognitive Sciences*. **9**, pp.503–520.

Kantor, T. 1979. *The trumpet of the last judgement.* [Installation-Sculpture-Prop] [Drawing]. At: Krakow: Cricoteka.

Kaprow, A. 1967. *Fluids.* Allan Kaprow. dir. Pasadena Art Museum. First performance: 1967.

Kawakami, K. and Papia, D. 2005. *The big bento box of unuseless Japanese inventions: The art of chindogu*. London: W.W. Norton & Company.

Kemp, R. 2012. *Embodied acting: What neuroscience tells us about performance*. London: Routledge.

Kershaw, B. 2009. Practice as research through performance. In: Smith, H. and Dean, R. eds. *Practice-led research, research-led practice in the creative arts*. Edinburgh: Edinburgh University Press, pp.104-125.

Kiverstein, J. 2017. *Julian Kiverstein: The significance of phenomenology.* [Online]. [Accessed 12 February 2017]. Available from: http://www.juliankiverstein.com/

Kvale, S. 2006 [1996]. *Interviews: An introduction to qualitative research interviewing*. London: Sage.

Lakoff, G. and Johnson, M. 1980. *Metaphors we live by*. Chicago: University Chicago Press.

Lakoff, G. and Johnson, M. 1999. *Philosophy in the flesh*. New York: Basic Books.

Lehmann, H.T. 2006. *Postdramatic theatre*. London: Routledge.

Lewin, K. 1948. *Resolving social conflicts*. London: Harper & Row.

Lotker, S. & Gough, R. eds. 2013. On scenography: Editorial. *Performance Research.* **18**(3), pp.3-6.

Lotker, S.Z. 2015. Expanding scenography: Notes on the curatorial developments of the Prague Quadrennial. *Theatre and Performance Design*. **1**(1-2), pp.7-16.

Lutterbie, J. 2011. *Toward a general theory of acting: Cognitive science and performance*. New York: Palgrave Macmillan.

Machon, J. 2009. *(Syn)aesthetics: Redefining visceral performance.* Basingstoke: Palgrave Macmillan.

Machon, J. 2013a. *Immersive theatres: Intimacy and immediacy in contemporary performance*. Basingstoke: Palgrave Macmillan.

Machon, J. 2013b. (Syn)aesthetics and immersive theatre: Embodied beholding in Lundahl & Seitl's Rotating in a Room of Images. In: Shaughnessy, N. ed. *Affective performance and cognitive science: body, brain, and being*. London: Bloomsbury Publishing. pp.198-215.

Machon, J., 2016. Watching, attending, sense-making: Spectatorship in immersive theatres. *Journal of Contemporary Drama in English*, **4**(1), pp.34-48.

Malague, R. 2009. Searching for Spalding Gray: PAR pedagogy, an undergraduate ensemble, and "The Edinburgh Project". In Riley, S. and Hunter, L. eds. *Mapping landscapes for performance as research: Scholarly acts and creative cartographies*. Basingstoke: Palgrave Macmillan, pp.192-198.

Massey, D. B. 2005. *For space*. London: Sage.

Maturana, H.R. and Varela, F.J. 1980 [1972]. A*utopoiesis and cognition: The realisation of the living.* Dordrecht: D.Reidel Publishing.

Maturana, H.R. 1988. Reality: The search for objectivity or the quest for a compelling argument. *The Irish Journal of Psychology*, **9**(1), pp.25-82.

Maturana, H. 2002. Autopoiesis, structural coupling and cognition: A history of these and other notions in the biology of cognition. *Cybernetics & Human Knowing*. **9**(3-4), pp.5-34.

Maturana, H. 2011. Ultrastability… autopoiesis? Reflective response to Tom Froese and John Stewart. *Cybernetics & Human Knowing*, **18**(1-2), pp.143-152.

May, S. 2015. *Rethinking practice as research and the cognitive turn*. Basingtoke: Palgrave Macmillan.

Maye, A. and Engel, A.K. 2013. Extending sensorimotor contingency theory: Prediction, planning, and action generation. *Adaptive Behavior*, **21**(6), pp.423-436.

McAuley, G. 1999. *Space in performance: Making meaning in the theatre*. Ann Arbor: University of Michigan Press.

McConachie, B. and Hart, F.E. eds. 2006. *Performance and cognition: Theatre studies and the cognitive turn*. London: Routledge.

McConachie, B. 2008. *Engaging audiences: A cognitive approach to spectating in the theatre*. Basingstoke: Palgrave Macmillan.

McConachie, B. 2013. Introduction: Spectating as sandbox play. In: Shaughnessy, N. ed. *Affective performance and cognitive science: body, brain, and being*. London: Bloomsbury Publishing. pp.183-197.

McGovern, K. and Baars, B.J. 2007. Cognitive theories of consciousness. In: Zelazo, P.D., Moscovitch, M. and Thompson, E. eds. *The Cambridge handbook of consciousness*. Cambridge University Press. pp.177-205.

McKinney, J. 2008. *The nature of communication between scenography and its audiences*. Doctoral Dissertation. University of Leeds.

McKinney, J. and Butterworth, P. 2009. *The Cambridge introduction to scenography*. Cambridge: Cambridge University Press.

McKinney, J. and Iball, H. 2011. Researching scenography. In Kershaw, B. and Nicholson, H. eds. *Research methods in theatre and performance*. Edinburgh University Press, pp.111-136.

McKinney, J. 2012. Empathy and exchange: Audience experiences of scenography. In Reynolds, D. and Reason, M. eds. *Kinesthetic empathy in creative and cultural practices*. Bristol: Intellect, pp. 219-235.

McKinney, J. 2015. Vibrant materials: The agency of things in the context of scenography. In: Bleeker, M., Sherman J.F., Nedelkopoulou, E. eds. *Performance and phenomenology: Traditions and transformations*. Hoboken: Taylor and Francis, pp.121-140.

McKinney, J. and Palmer, S. eds. 2017. *Scenography expanded: An introduction to contemporary performance design*. London: Bloomsbury Publishing.

Menary, R. 2010. Introduction to the special issue on 4E cognition. *Phenomenology and the Cognitive Sciences* **9**(4), pp.459-463.

Merleau-Ponty, M. 2002 [1945]. *Phenomenology of perception*. London: Routledge.

Merx, S. 2013. The politics of scenography: Disrupting the stage. *Performance Research*, **18**(3), pp.54-58.

Miessen, M. 2010. *The nightmare of participation*. Berlin: Sternberg Press.

Mock, R. 2017. *WroCAH Practice as research workshop with Roberta Mock*. 19-20 June 2017. University of York.

Murphy, M. 2016. Language and the body. In: Evans, M. and Kemp, R. eds. *The Routledge Companion to Jacques Lecoq*. London: Taylor & Francis, pp. 260-267.

Murray, J. 1999. *Hamlet on the holodeck-the future of narrative in cyberspace*. Cambridge, MA: MIT Press.

Nelson, R. 2013. *Practice as research in the arts: Principles, protocols, pedagogies, resistances*. Basingstoke: Palgrave Macmillan.

Noë, A. 2004. *Action in perception*. Cambridge: MIT Press.

Oddey, A. and White, C.A. eds. 2006. *The potentials of spaces: The theory and practice of scenography & performance*. Bristol: Intellect.

O'Hagan, A. 2016. Imaginary Spaces Es Devlin and the psychology of the stage. *New Yorker.* [Online]. [Accessed 20th May 2016]. Available from https://www.newyorker.com/magazine/2016/03/28/es-devlins-stages-for-shakespeare-and-kanye

O'Regan, J.K. and Noë, A. 2001. A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences*, **24**(5), pp.939-973.

Paavolainen, T. 2009. On spectatorship, objecthood, and the enaction of visual experience. In: Gröndahl, L., Paavolainen, T., and Thuring, A. eds. *Näkyvää ja Näkymätöntä.* Helsinki: Theatre Research Society in Finland, pp.10-34.

Paavolainen, T. 2012. *Theatre/ecology/cognition: Theorizing performer-object interaction in Grotowski, Kantor, and Meyerhold*. Basingstoke: Palgrave Macmillan.

Penna, X. *Uncovered*. [Performance installation]. The Bluecoat, as part of *Poolside emergency micro-festival of live art*. First performance: April 13, 2013.

Penna, X. *I know this, I do this all the time (I don't like it though).* [Performance installation]. Shunt Vaults, as part of *Locus Solus* exhibition, First performance: May 2009.

Polanyi, M. 2009 [1966]. *The tacit dimension*. Chicago: University of Chicago Press.

Popat, S. and Palmer, S., 2005. Creating common ground: Dialogues between performance and digital technologies. *International Journal of Performance Arts and Digital Media*. **1**(1), pp.47-65.

Ramstead, M.J., Veissière, S.P. and Kirmayer, L.J. 2016. Cultural affordances: Scaffolding local worlds through shared intentionality and regimes of attention. *Frontiers in psychology*. **7**(1090), pp. 1-21.

Rancière, J. 1991. *The ignorant schoolmaster: Five lessons in intellectual emancipation.* Stanford: Stanford University Press.

Rancière, J. 2009. *The emancipated spectator.* London: Verso.

Rauschenberg, R. 1964. *Elgin Tie*. Robert Rauschenberg. dir. Moderna Museet, Stockholm. First performance: 13 September 1964.

Reason, M. 2012. Artistic enquiries: Kinesthetic empathy and practice-based research (Introduction). In Reynolds, D. and Reason, M. eds. *Kinesthetic empathy in creative and cultural practices*. Bristol: Intellect, pp. 193-198.

Reason, M., Reynolds, D., Grosbras, M.H. and Pollick, F.E. 2013. Researching dance across disciplinary paradigms: A reflective discussion of the Watching Dance Project. In: Shaughnessy, N. ed. *Affective performance and cognitive science: Body, brain, and being*. London: Bloomsbury Publishing, pp.39-57.

Reckless Sleepers. 2011. *Schrödinger*. Mole Wetherell. dir. First performance: 29 May 2011.

Reid, D.A. 1996. Enactivism as a methodology. *PME Conference* **4**, pp.203-209.

Reid, D.A. and Mgombelo, J. 2015. Survey of key concepts in enactivist theory and methodology. *ZDM*, **47**(2), pp.171-183.

Reynolds, D. and Reason, M. eds. 2012. *Kinesthetic empathy in creative and cultural practices*. Bristol: Intellect Books.

Rietveld, E. and Kiverstein, J. 2014. A rich landscape of affordances. *Ecological Psychology*, **26**(4), pp.325-352.

Riley, S. and Hunter, L. eds. *Mapping landscapes for performance as research: Scholarly acts and creative cartographies*. Basingstoke: Palgrave Macmillan.

Rimini Protokoll. 2015. *Evros walk water*. Daniel Wetzel. dir. First performance: 31 May 2015.

Robinson H. 1935. The multi-movement tabby silencer. [Illustration] in *Absurdities, A Book of Collected Drawings.* London: Hutchinson & Co.

Roepstorff, A., Niewöhner, J. and Beck, S. 2010. Enculturing brains through patterned practices. *Neural Networks*, **23**(8), pp.1051-1059.

Roepstorff, A. 2013. *Andreas Roepstorff: Levyna Project* [Online]. [Accessed 15 April 2016]. Available from: https://www.youtube.com/watch?v=xZ1z8y7Ni0k

Schechner, R. 1994 [1973]. *Environmental theater*. New York: Applause.

Schwabsky, B. 2016. *The Perpetual guest: Art in the unfinished present*. London: Verso Books.

Sehgal, T. 2016. *Carte blanche to Tino Sehgal*. Palais de Tokyo. First performance: 12 October 2016.

Seth, A. K. and Baars, B. J. 2005. Neural Darwinism and consciousness. *Consciousness and Cognition* **14**, pp.140-168.

Seth, A. K., Baars, B. J. & Edelman, D. B. 2005. Criteria for consciousness in humans and other mammals. *Consciousness and Cognition.* **14**, pp.119-139.

Seth, A. 2007. Models of consciousness. *Scholarpedia*, **2**(1), p.1328.

Seth, A.K., 2015. The cybernetic Bayesian brain. *Open Mind*. Frankfurt am Main: MIND Group.

Shaughnessy, N. 2012. *Applying performance: Live art, socially engaged theatre and affective practice*. Basingstoke: Palgrave Macmillan.

Shaughnessy, N. ed. 2013. *Affective performance and cognitive science: Body, brain, and being*. London: Bloomsbury Publishing.

Shearing, D. 2014. Scenographic landscapes. *Studies in theatre and performance*, **34**(1), pp.38-52.

Shearing, D.R. 2015. *Audience immersion and the experience of scenography*. PhD thesis. University of Leeds.

Smith, H. and Dean, R. eds. 2009. *Practice-led research, research-led practice in the creative arts*. Edinburgh: Edinburgh University Press.

Stepanova, V. 1922. [Models] for Alexander Sukhovo-Kobylin's play *The Death of Tarelkin*. At: Rodchenko Stepanova Archives, Moscow.

Sterelny, K. 2010. Minds: Extended or scaffolded? *Phenomenology and the Cognitive Sciences*, **9**(4), pp.465-480.

Stony Brook University. 2016. *Cognitive futures in the arts and humanities*. [Accessed 10th June 2017]. Available from: http://www.stonybrook.edu/commcms/cognitivefutures/about.html

Sukhovo-Kobylin, A.1922. *The Death of Tarelkin*. Vsevolod Meyerhold. dir. Moscow. First Performance: 24 November 1922.

Synechdoche, New York. 2008. [Film]. Charlie Kaufman. dir. USA. Sony Pictures.

Tate Modern. 2016. *Perform, experience, re-live*. London: Tate Public Programmes.

ten Bosch, A.K.; Nibbelink, L., Maan, T., & Scholts, N. 2013. Thinking scenography: Inventing a building. *Performance Research*. **18** (3), pp. 95-105.

Thompson, E. 2005. Sensorimotor subjectivity and the enactive approach to experience. *Phenomenology and the Cognitive Sciences*. **4**, pp.407-427.

Thompson, E. 2007. *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge: The Belknap Press of Harvard University Press.

Tononi, G. 2012. *Phi: A voyage from the brain to the soul*. New York: Pantheon Books.

Tribble, E. and Sutton, J. 2013. Interdisciplinarity and cognitive approaches to performance. In Shaughnessy, N. ed. *Affective performance and cognitive science: Body, brain, and being*. London: Bloomsbury Publishing, pp.27-39.

Trimingham, M. 2001. *The practical application of principles underlying the work of Oskar Schlemmer at the Dessau Bauhaus 1926-1929*. PhD Thesis. University of Leeds.

Trimingham, M. 2002. A methodology for practice as research. *Studies in Theatre and Performance*, **22**(1), pp.54-60.

Trimingham, M. 2011. How to think a puppet. *Forum Modernes Theater* **26**(1), pp.121-136.

Trimingham, M. 2013. Touched by meaning: Haptic effect in autism. In: Shaughnessy, N. ed. *Affective performance and cognitive science: Body, brain, and being*. London: Bloomsbury Publishing, pp.229-240.

Trimingham, M. 2017. Ecologies of autism: Vibrant space in imagining autism. In: McKinney, J. and Palmer, S. eds. *Scenography expanded: An introduction to contemporary performance design*. London: Bloomsbury Publishing, pp. 183-196.

Tschumi, B. 1996. *Architecture and disjunction*. Massachusetts: MIT Press.

Varela, F.J., Thompson, E. and Rosch, E. 1991. *The embodied mind: Cognitive science and human experience*. Massachusetts: MIT Press.

Varela, F., Lachaux, J.P., Rodriguez, E. and Martinerie, J. 2001. The brainweb: Phase synchronization and large-scale integration. *Nature reviews. Neuroscience*, **2**(4), pp.229-239.

Villalobos, M. and Dewhurst, J. 2017. Why post-cognitivism does not (necessarily) entail anti-computationalism. *Adaptive Behavior*, **25**(3), pp.117-128.

Von Kleist, H. 2010. *Die Hermannsschlacht*. Armin Petras. dir. Katrin Brack. designer. Munich Kammerspiele. First performance: 2010.

Ward, D. and Stapleton, M. 2012. Es are good. In: Paglieri, F. ed. *Consciousness in interaction: the role of the natural and social context in shaping consciousness*. Amsterdam: John Benjamins Publishing, pp.89-107.

White, G. 2013. *Audience participation in theatre: Aesthetics of the invitation*. Basingstoke: Palgrave Macmillan.

Whitehead, C. 2004. Everything I believe might be a delusion. Whoa! Tucson 2004: Ten years on, and are we any nearer to a science of consciousness?. *Journal of Consciousness Studies*, **11**(12), pp.68-88.

Windsor, M. 2011. Art of interaction: A theoretical examination of Carsten Höller's Test Site. *Tate Papers*, **15**.

Yasuda, K. 2009. Action research. In Riley, S. and Hunter, L. eds. *Mapping landscapes for performance as research: Scholarly acts and creative cartographies*. Basingstoke: Palgrave Macmillan, pp. 125-127.

Appendix A
Dissemination of Research

I have presented part of my research findings at major national (UK) and international conferences on the intersections of performance and cognition (please refer to A2 below).

I have also engaged in interdisciplinary discussions as I was invited on the 19th November 2015 to present at the School of Philosophy, Psychology and Language Sciences, University of Edinburgh my research as part of Embodied Mind-Embodied Design workshop alongside a number of prominent young researchers in the field of cognitive studies stretching from linguistics, to robotics, philosophy, and psychology. I will be presenting my work on *Designing Uncertainty for Generating Audiences' Participation* this coming November at the Worlding the Brain 2017 gathering at the University of Amsterdam, which is another opportunity for bringing together artists, creative researchers and other scholars interested in 4E cognition.

Specifically:

A.1 Publications

Penna, X. 2014. Uncovered: Performing everyday clothes (visual essay) *Scene*. **2** (1&2), pp. 9–14.

A.2 Presentations

– *Designing Uncertainty for Generating Audiences' Participation*. Worlding The Brain Conference 2017, University of Amsterdam, NL, November 2017

– *I Want You to Participate || pause for thought* (organiser of colloquium), PCI, UoL, May 2017 (web-site: https://thegrid.ai/participation/)

–*Scenographic Contraptions: a manifestation for a post-representational performance design method* (flash presentation). PSi#23*, performance+design group, June 2017

– '*Phishing Things Together': Using Cognitive Theory, and Practice Research to Further our Understanding of Designing in a Groundless Contemporary Performance Landscape* (paper). Cognitive Futures in the Arts and Humanities Conference 2017, New York, June 2017

– *Applications of Cognitive Science in Scenographic Reception and Processes: Scenographic Contraptions* (paper). Cognitive Futures in the Humanities Conference 2016, Helsinki, June 2016

– *Scenographic Contraptions: An Embodied Conversation* (presentation). 'Embodied Mind, Embodied Design' workshop at the School of Philosophy, Psychology and Language Science and School of Education, The University of Edinburgh, November 2015

– *Attempts on Staging Consciousness: Towards a Cognitive Scenography* (paper). IFTR2015, Theatre and Democracy Conference, Hyderabad, India, July 2015

–*Work Space I- a Scenographic Workshop on Consciousness: Scenographic artefact* (flash talk). Scenography as Shared Space Symposium (IFTR scenography working group), Prague Quadrennial 2015, June 2015

– *Attempts on Margarita (multiple drafts): A Cognitive Dramaturgy Generated by Voice and Space* (paper). Second Symposium on Embodied Cognition and Performance 2015, AISB Convention, University of Kent, April 2015

– *Costume Project(ion)-The Costume Rehearses* (Flash Talk). Critical Costume Conference, Aalto University of Design, Helsinki, Finland, March 2015

– *Making Up Two Minds DIFfERNET-Towards a Cognitive Scenography* (paper). Irish Society of Theatre Research (ISTR) 2014, Consciousness and Cognition: Theatre Practice and Performance Conference, Cork, May 2014

A.3 Presentations entry-points to the research

– *A Blink of an Eye': a Layered Scenography Depicting the Brain's Underlying Parallelism* (paper). 4th Global Conference, Performance: Visual Aspects of Performance Practice, Mansfield College, Oxford, September 2013

– *Making Up Two Minds-a Scenographic Experiment* (practice-led research) TESTing, staging performance design research @ World Stage Design

Exhibition, Cardiff, September 2013. https://www.youtube.com/watch?v=d6pt9I9A2yY&t=209s

– *Scenographic Contraptions-in Aid of the Body's Memory* (paper). Critical Costume conference, Edge Hill University, Ormskirk, UK, January 2013

A.4 Practice

– *Work Space I: a Scenographic Workshop on Consciousness*, a workshop (14th May 2014), stage@leeds, Alec Clegg.

– *Work Space II: Attempts on Margarita (multiple drafts)*, a sound installation (26th February 2015), stage@leeds, Stage One

– *Work Space III: Phishing Things Together (the predictive brain)*, a participatory installation (20th October 2015), Live Art Bistro.

A.5 Applications of the Research

As an extension of this practice I have applied some of the insights of orchestrating a social space using materials and affordances in the intersection of arts and politics working for the pan-European cross-border movement DiEM25 (August 2016 ongoing) and artist Danae Stratou. I have devised the blueprint of DiEM Voice a scenographic system network-in-action, which operates in two parts: it generates audiences' responses during the DiEM25 events-talks; and it commissions artists to generate original artwork in response to the audiences' questions and suggestions regarding the political future of Europe (for more information see Appendix D). This proposal could not have been materialised without the thinking-doing through this research.

Finally I have applied the 'scenographic contraption' as a teaching tool for undergraduate performance production students for creating participatory encounters between materials and audiences (University of Surrey, May 2016).

Appendix B

B.1 Questionnaires for voice recordings *WS II*: *Attempts on Margarita (multiple drafts)*

Work Space I I- Attempts on Margarita (multiple drafts)

Researcher: Xristina (Christina) Penna
Department: Performance and Cultural Industries, UoL
Supervisors: Joslin McKinney, Anna Fenemore
School of Performance and Cultural Industries
Univerity of Leeds

FEMALE PARTICIPANTS FORM [male participants please see questionnaire (m)]

Thank you for agreeing to take part in this practice-led research project!

Please record your voice answering/describing the following questions/situations.

Please send the audio files to Xristina (researcher) and Ben (sound designer):
pccp@leeds.ac.uk and ben.eyes@gmail.com) by the 12th of February.

(You don't need to answer all the questions and you can spend as much time on the questions as you want/feel necessary. You can withdraw from this study up to the 25th of Feb by contacting xristina at: pccp@leeds.ac.uk) Enjoy!

[Recording your voice: You can do this and send it via e-mail through your mobile phone or your laptop or use free software (i.e.Mac users→ applications→ garage band https://www.youtube.com/watch?v=AFgtLPWQC6U]

Questionnaire

In the beginning of your recording please read out the following paragraph:

I (your full name) am happy for my voice to be recorded for Christina Penna's research project. I am aware that my voice and what I say will be heard as part of the performance 'Attempts on Margarita (multiple drafts)' and will be used for further dissemination of the research in the form of edited video and audio footage.

First impression:
(describe yourself in third person i.e. 'She has dark hair…')
Can you describe her characteristics? Colour of hair? Colour of eyes? Is she tall, short? Does she smile? Does she look people in the eyes? What is she wearing at the moment (describe what you are wearing but in third person)? What else?

Shitty Jobs:
Have you ever done a job that you didn't like or that it made you feel uncomfortable? Bored? Unsettled? Can you explain to us what that job was? What annoyed you most? What did you have to do in that job? How did you feel?

Secret pleasures
No 1: Every Tuesday she buys several tabloids (like Grazia, Hello! Etc) and sits alone in her room with them. She turns to the horoscope page, reads it and if she likes what it predicts for the week she cuts out the page and staples it into her binder. Can you describe this scene?

No 2: She likes trying on older women's clothes. Can you tell us why? Where does she find the clothes?

No 3: can you think of something else she likes doing in secret?

1

Space:
Can you describe the room/place you are in?

Travels:
Could you read out the following text?
Margarita's taken a cruise ship once in her life, from Seattle to Alaska, and through Glacier Bay. Of course, Alaska was beautiful; it was the first time she had ever taken a vacation to somewhere cold. But Margarita told me that she loved it because of something else; something mechanical. She loved the fact that the ship was in near-perpetual motion. She was always on her way *somewhere!* So she never lost any time--when she was eating, when she was sleeping, when she was doing all of the routine things that 'eat away' time during the day, Margarita was still in motion, going somewhere, aimed toward something, like wearing rocket shoes through your everyday life.

Can you describe a time when you were travelling and things went wrong? Delayed flight? Food poisoning? How did this make you feel?
Can you describe an image that you have of a beautiful landscape that has remained in your memory? How did you feel experiencing this landscape?

Accident:
Have you or someone you know had an accident that has impacted your/their life? Can you describe it?

Cocktails:
How do you make a Margarita cocktail?

THANK YOU!

Come and see how Margarita develops!

ATTEMPTS ON MARGARITA MULTIPLE DRAFTS
xristina penna + aswespeakproject with ben eyes and jennifer carlberg
a durational sound installation powered by passers-by
Thursday 26th February
Free entry 12.15pm-3pm
STAGE ONE stage@leeds
www.aswespeakproject.org supported by CePRA

2

B.2 Information announcement form for *WS III*: Phishing Things Together (the predictive brain)

Please note that this is a participatory emergent environment

What you say or do may be viewed or heard by others in this space and may be recorded and used for research purposes

For more information on how the material will be used please ask at the entrance

B.3 Material handed out to the audience–participants *WS III*: *Phishing Things Together (the predictive brain)*

AUDIENCE BRIEF
Artist-Researcher: Christina (Xristina) Penna | Supervisors: Dr Joslin McKinney, Dr Anna Fenemore | School of Performance and Cultural Industries, University of Leeds | UK.

Work Space III- Phishing Things Together (the predictive mind)

**Xristina penna +
aswespeakproject
with ben eyes
and katherine graham**

Hello,

I am Margarita. I am an installation…
I have happened before on the 26th of February 2015 at stage@leeds and found my voice by collecting voice recordings of experiences from friends.
I am happening again here, tonight by collecting images and sounds from my Facebook friends' profiles and from you, the audience participants.

Feel free to wander around the space and explore.

I will borrow anything you say or do between 5pm to 8pm. Then I will end and will leave you to reflect during a Q&A from 8pm to 8.20pm. Enjoy!

xMargarita

For more information and footage after the show please visit
www.aswespeakproject.org

Appendix C

C.1   Tables of Terminology– Towards a Cognitive Scenography

Table 1.

CRITICAL AND CREATIVE FRAMEWORKS

Scenographic contraption	– A conceptual model of contemporary post-representational scenography. By replacing but also embracing 'perspective', 'the set', 'the centre', 'the stage/scene', 'cartesian dualism' it conceptualises contemporary scenography as the exposed theatrical apparatus in process – A methodological tool for tackling groundlessness in contemporary post-representational scenography – A critical practical tool-prop, or an environment which prioritises ingenuity, and inventive playfulness over effectiveness for the orchestration of a groundless scenography – An analytical tool for talking about the multimodal nature of scenographic processes, reception and operations. Understands

	participation 'as contraption'
Groundless Scenography	A conceptual framework for understanding the experience of scenography as a co-originating process of enfolding and unfolding between the audience, the design, and the co-audience.
Space performing-rehearsing	Following Bernard Tschumi and Dorita Hannah. A framework for understanding scenographic participation through patterns of shared attention by exposing the theatrical apparatus. As a term it helps with the understanding of the perpertual, discursive nature of scenography happening between scene (space) and graphi (event).

CRITICAL AND CREATIVE TOOLS

The clout effect	The manipulation of sociocultural affordances through the design in order to guide attention to a certain field of affordances.
Contagious scenography	A similar approach to the clout, but distributed over time, and generated spontaneously by the audience themselves.
Scenographic error	'Scenographic error' is designed deliberately by the Predictive Scenographer in the scenographic contraptions to generate possibilities of interaction, affect and thinking.

Table 2.

CRITICAL AND CREATIVE FRAMEWORKS

Scenographic languaging	Language as a doing developed within a groundless scenography as a mode of communication between: – the audience and the scenographer together with their art team – the audience between them
Scenographic systems networks-in-action	Another term for a groundless scenography to denote not only the co-originating understanding but also the simultaneous distributed correlation between audience, design, and co-audience.

CRITICAL AND CREATIVE TOOLS

Disciplined means	What the design of the undisciplined contraption environment has to offer (affordances). (Note: the disciplined means include also the orchestration of the audience as part of the design, and as generators of affordances).
Genuine means	The structural coupling of the audience–participants with the 'disciplined means'

	(agency).
The Processual Designer	The scenographer who designs 'the diciplined means' (affordances) in a way that the space performs-rehearses.
Audience–participants as happenings	The scenographer cannot access the autonomous experience of the audience. The way the scenographer can access and affect their audience is by altering their fileds of affordances. The audience in turn alter during the duration of the show the fields of affordances for their co-audience.
The Ignorant scenographer	The scenographer who does not know 'the story' and invites the audience to co-construct it.
The Janus-faced scenographer	– Operates between passive – active – Operates between material – immaterial – Operates between the space as 'performing-rehearsing' – Understands the audience as 'performing-rehearsing' – Understands the performer as 'on stage- back stage' [– Operates between two cultures (this applies to the specific Practice Research)]

The Predictive Scenographer	Orchestrates scenographic error by providing downward-flowing complex and non-linear material and sociocultural affordances to their audiences. Tries to predict their audiences, and is each time surprised by the audiences' response to the work. Develops their skill by attending their work, and therefore learning from their audience 'embodied feedback'.

Table 3.

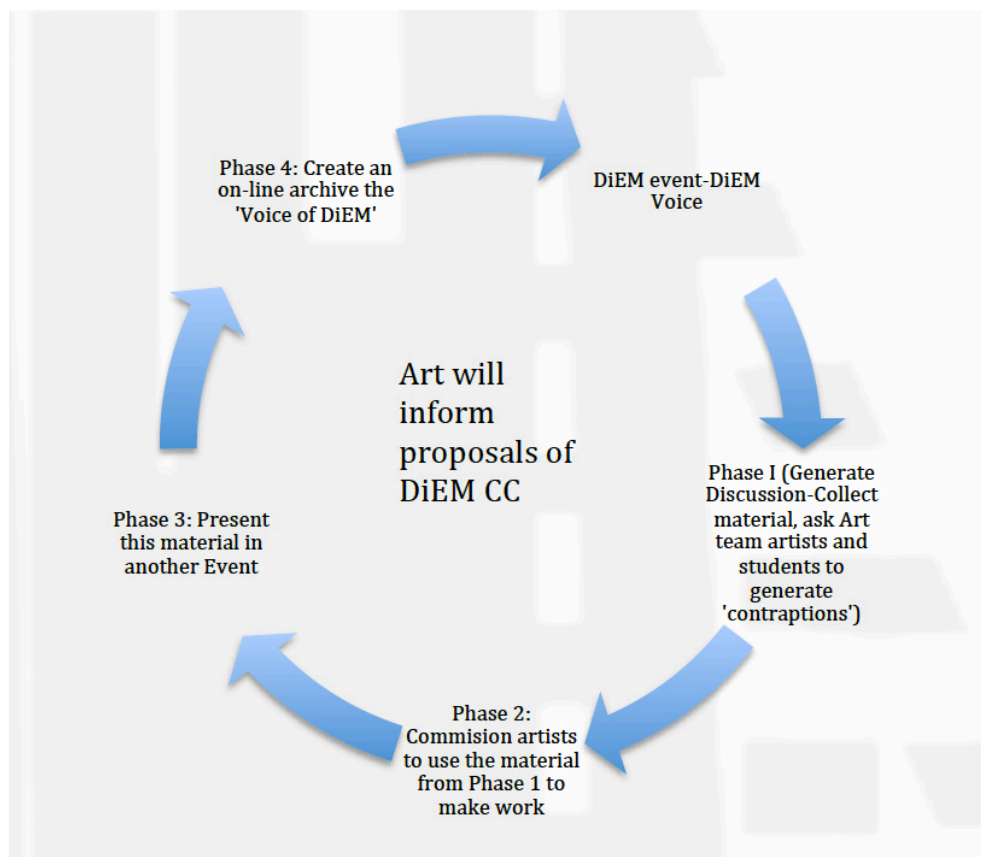| |
|---|
| <u>**CRITICAL AND CREATIVE NOTIONS**</u> |

Scenography in the flesh	An imaginative dialogue between scenography and cognitive science by 'en-spacing' contemporary cognitive metaphorical architectures of consciousness and perception for the creation of scenographic interaction.
The easy problem of scenography	The materials of scenography (paint, light, projections, haze, positioning of audience etc.). Is understood in a non-binary relation with the 'hard problem'.
The hard problem of scenography	The immaterial of scenography (experience, feelings, affect etc.). Is understood in a non-binary relation with the 'easy problem'.

The ethics of the space	The calm yet assertive way of a scenography establishing a way of being in the space for the audience–participants.
Accommodating scenography	The subtle yet rich landscapes of affordances offered by the design that do not impose themselves nor make demands on the audience–participants.

Appendix D

D.1   Applications of a Cognitive Scenography in activism DiEMVoice

A sample of my expanded scenography proposal *DiEM Voice*

Phase 4: Create an on-line archive the 'Voice of DiEM'

DiEM event-DiEM Voice

Art will inform proposals of DiEM CC

Phase I (Generate Discussion-Collect material, ask Art team artists and students to generate 'contraptions')

Phase 3: Present this material in another Event

Phase 2: Commision artists to use the material from Phase 1 to make work

D.2 Realisation of Phase 1

DiEM Voice at Teatro Italia, Rome (March 2017), Volksbühne, Berlin (May 2017), Bozar, Centre for Fine Arts, Brussels (September 2017)
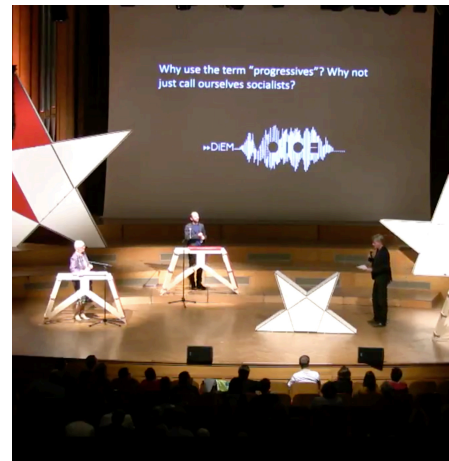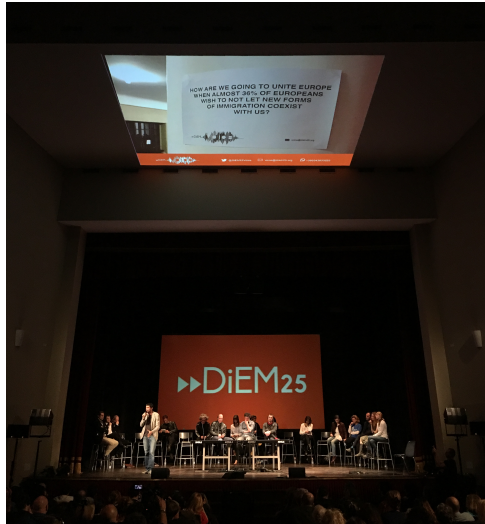

Figure above left and bottom right: The audience send in their questions and thoughts. These were printed out and stuck on the pillars of the foyer. Images of this process were projected inside the theatre space above the speakers.

Figure above right: DiEM Voice projection at Bozar, Centre for Fine Arts Brussels. Set design by Studio Jonas Staal.

Figure below left: An audience's suggestion from the DiEM25 event at Volksbühne in Berlin.