

between stage, brain and body

using cognitive science to flesh out the embodied act of looking



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Hugo,
My beautiful blond little prince,
This one is for you.

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preface

The text that you are about to read is my master thesis; the result of the very first time that I conducted research and produced a substantial academic text. As every 'first' it has been an adventure, and one that I have enjoyed greatly. And as every true adventure it has brought me pleasure but also pain, I have seen beautiful horizons but I have also experienced some tunnel vision, and it has brought me loneliness but also some very good company along the way.

Adventures have a way of taking you to the exact place where you least thought you would go. When I took off I was aiming to get closer to truth. I ended up going to the brain instead. In retrospect this makes sense, as I have been rethinking what meaning is and what my mind is made of for some time now. In my imagination, my mind used to be a kind of helicopter that hovers over my body; a central command post of some sort from which a group of men in military suits (let's not get into psychoanalytical or feminist issues raised by the curious fact that in my imagination they were male soldiers) would regulate, control and steer all the rest. This image was never entirely unproblematic, as it also occurred to me that if the little men in the helicopter would abandon their post, they would leave the rest of me helplessly unsupervised. Over the course of my life as a student in theatre studies I have come to accept that there is no such central command post to begin with, and that I do not need one. My brain is a living organ just like my stomach, my heart and my skin. It reacts to my body, to the world, to weather conditions, to stress and to pleasure. This thesis therefore is a reflection of the work I have done, but also of my body's reactions to the weather conditions of the past year, my personal history, the things I happened to see on television and read in newspapers, and most importantly: the people that I have spent my time with. I would like to thank some of them for their help and support.

First of all, my gratitude goes to the department of Theatre Studies at Utrecht University, where I have had the fortune to find a stimulating environment that exposes its students to new experiences and invites them to think new thoughts. I am thankful to the group of people who created that environment and welcomed me in it. I am especially grateful to my tutor, Liesbeth Groot Nibbelink, who has provided me with invaluable support during the process of writing this thesis. I want to thank her for teaching me, for forcing me to think harder and for her endless kindness. I also want to thank Professor Maaïke Bleeker, for teaching by example, showing us what can be accomplished with humble ingredients such as integrity and dedication.

During the past few years, I have had the fortune of meeting a few researchers who were just passing through, and who took time out of their busy schedules to ask a student what her current project was and to try and give her tips, broaden her perspective, and guide her in the right direction. Their generosity and their passion for their work and for that of others surprised and inspired me. I would especially like to thank Professors Joe Kelleher, Vicky Kirby, and Jane Taylor for their time and their insights.

Many times during the past years, people have asked me how I could do a master in Theatre Studies while I am also the mother of two small children. Firstly, I explain to them that there is no reason why a mother should not be able to work or to write a thesis. Then I tell them that I have a husband who is generous and resilient; the kind that loves you for who you are, even if it means you need to be buried in your laptop during breakfast. His name is Rens, and I am grateful to him for helping me become the geek I that I was always meant to be and cheering me on in the process. I also want to thank my parents, all three of them, each for contributing to my curiosity and my productivity in their own way. I want to thank my friends Lysanne Erlings and Ashley Cowles, the first for repeatedly threatening to kill me if I would fail to enjoy the writing process, and both of them for proofreading my text and helping me to improve it. And I want to express my gratitude to Alexandra Broeder, Theaterzaken Via Rudolphi, and to Nora Maartsen, for sharing their script, photographs, and press materials with me.

Finally I thank my children, whose contribution to this thesis should not be underestimated. The way they look at me has forced me to transform into someone else – as it happens into the person who among other things wrote the text that lies before you now.

introduction

Imagine a little girl a long time ago. She looks at the adults around her and she wonders why they behave the way they do. When she asks them they smile, pass a hand through her curls, and give her answers that are in no way related to her questions. After a while she draws the inevitable conclusion that they must think that she can't think. She would like to tell them, but they don't listen to her yet. She decides that it will be her mission in life to grow up and tell other adults that a child of three can think. She works very hard to remember that she can think at the age of three, which becomes especially difficult when she turns four, because she can't write it down yet.

When she grows a little older, she goes to the theatre and something magical happens. She sees a theatre performance for children. It is *The Summer of Aviya*: the story of a young girl who leaves an orphanage to live with her traumatized and violent mother for a summer.¹ It is a painful story, that, unlike the ones the girl is usually told, does not conceal the fact that both children and adults can be confused, violent and cruel, and that life can be very unsafe. Sitting in that theatre, in the dark, while two adult performers are telling her this story, she feels included because these two adults are acknowledging that she lives in the same world as they do. She falls in love with the theatre. Time and time again she goes back, she sits in the dark, and she looks. She feels safe because she is in the dark: nobody looks at her, and nobody points at her to say that because she is just a child this story does not concern her. Paradoxically, being invisible means she is safe from being excluded.

The Dutch theatre landscape has a rich tradition of performances for children that stretch the boundaries of which stories are considered to be suitable for children and which are not, made by theatre makers who aim to contribute to an emancipation of the child from the sometimes patronizing and belittling attitude expressed in much of what is being produced for children. In the past years, this tradition of boundaries being stretched by adult theatre makers who perform for children has gained the company of theatre for adult audiences, performed by children. Theatre director Alexandra Broeder has been a prominent producer of this kind of theatre, developing a notoriously unsettling oeuvre of performances in which she stages children for exclusively adult audiences.

In April 2010 Alexandra Broeder staged four children between the ages 11 and 13 for an exclusively adult audience in a performance that left me wide awake and slightly ambivalent. Theatre performance *NATURE or NURTURE* started with the young performers standing front stage, looking us straight in the eyes without a smile, dressed in children's pajamas. They kept looking at us while they slowly took off their pajamas and put on a suit with a tie, a fake mustache, a luxurious dress, a sexy jumpsuit, high heels, and lighted up

1 *Summer of Aviya* is originally a novel by Gila Almagor (1985). It was adapted as a theatre play by playwright Pauline Mol and staged for children by her theatre company *Theater Artemis* in Holland in 1991.

cigarettes, making sure we would see that they were doing all this for us. Once they were dressed up, they started to enact a small party with drinks, jazz and seductions that brought to mind Edward Albee's jaded and soaked adults in *Who's Afraid of Virginia Woolf*. Their imitation of adult behavior was exaggerated and the children performed with virtuosity and with visible fun, creating a world that might be located anywhere between psychological realism and a surreal horror show. After the show I heard people asking each other whether it was normal for children that age to be able to perform this well, whether it was right or wrong to stage children this way, if their parents were not upset, and if it was acceptable to let children perform something while they clearly could not know what it all meant.

So what did it all mean? It would be possible to see this performance as a mirror held up to typical adult behavior, exposing our dark sides in a coherent dramatic situation, if it would have been performed by adult actors. The fact that the performers were children and that they explicitly showed us their awareness of being seen by making eye contact with the audience shifted the attention from the otherwise coherent anecdote to the relation between us and them. I felt uncomfortable as I did not know how to respond to their looks. Were they provoking me? Were they accusing me? Were they asking me for help? The fact that they kept looking back at us directed the attention to the way we view children and exposed a discomfort in the way we as adults relate to children. This performance was not about adult misbehavior but about the fact that children were performing for adults, about the fact that they were performing adult behavior, and about the unsettling effect of their looks meeting ours.

NATURE or NURTURE 'did' something to me. It made me feel alert, sympathetic, uncomfortable and moved. In recent years I have been fascinated by performances that explicitly aim to unsettle spectators and to make them feel uncomfortable, making use of theatre's liveness to put pressure on the relation between the ones looking and what is on stage to be seen. As a spectator of these performances I often feel like they impact me physically, even though I am sitting safely in my seat in the auditorium. They make my heartbeat accelerate, my skin sweat, my feet itch and my muscles contract, they change the way I breathe, they produce butterflies in my stomach and put my intestines in a knot. What I would like to know is how exactly my body is involved in understanding such a performance. I have found possible answers to this question in analogies between Maaïke Bleeker's analysis of the way the act of looking is organized in the theatre (Bleeker 2008), and theories of embodied cognition which explore how perception and abstract thought are organized in the human brain. Joined together these two bodies of knowledge will allow me to form a better understanding of the embodiment of the act of looking.

visuality

In her book *Visuality in the Theatre* (2008), Maaïke Bleeker presents a relational approach to visuality and she provides analytical tools to analyze visuality as an event unfolding between the one seeing and what is seen. Bleeker argues that the viewer is always a body looking, and that this body, as the viewer's 'locus of looking', always sees from a subjective point of view, and is encultured to see in specific ways. She analyzes how that

which is staged for us in the theatre positions us in relation to what we see, and explains that it can cause a sense of displacement when we do not identify with the point of view or 'subject position' it invites us to take up.

While her book does not focus explicitly on the power relations between the subject looking and the object seen, Bleeker's analysis of the way they both impact one another does touch on the subject.² She points out that in the field of vision, power tends to be on the side of the one who is looking rather than on that of the one who is seen: invisibility equals power (Bleeker 2008, p. 99).³ By explicitly having the child performers of *NATURE or NURTURE* look at the spectators, rendering them visible too, director Alexandra Broeder turns the power relations around. As *NATURE or NURTURE* explicitly emphasizes the process of looking and the presence of the subjects looking, it appears to thematize the power struggle over who gets to position whom. In this thesis I will use Bleeker's dissection of visuality as a tool to analyze how the relationship between the adults looking and the children performing for them is organized in *NATURE or NURTURE*.

However, my aim in this thesis is ultimately not to identify the dramaturgical strategies that *NATURE or NURTURE* deploys, but instead to dissect the mechanisms of perceiving and meaning-making of the 'bodies looking'. I intend to contribute to a relational and embodied approach to visuality by focusing my attention on the embodiment of the act of looking and by 'fleshing out' the subject of perception.⁴ While Bleeker's study emphasizes that the spectator is a body looking, her study describes several dramaturgical strategies in the visual arts and on the stage and is mostly concerned with situating the modes of looking that those invite in the history of visuality as a culturally specific phenomenon. While my research shares Bleeker's focus on the body looking, my aim is to 'zoom in' more closely on this body as the site where matter and meaning meet, and to discuss in detail *how* this body is performing the act of looking. I will do so by including cognitive science into my research.

I hope to demonstrate that Bleeker's theory can be expanded and added to by using cognitive science. While Bleeker does emphasize that visuality takes place as a result of the address placed on the viewer by what is seen and the response of this viewer, and argues that this viewer is marked by culture to see in specific ways, her research does not include the question *how* exactly viewers are marked by culture or *how* they come to respond to what they see the way they do. What I will add to Bleeker's research is an account of the way that our bodies are biologically built to respond to the address that visuality places

2 In her article *Theatre of/or Truth* (2007) however, Bleeker does explicitly consider the matter of power relations and discusses the relationship between visuality and politics.

3 Bleeker refers to Peggy Phelan to remind us that visibility does not always serve the interests of the one who is visible. She explains that like perspectival painting, dramatic theatre "(...) orients the field of vision to the viewer's invisible body, as if the scene seen has emanated from the viewers own eyes, while at the same time, this eye is erased from implication within the visual field. The degree to which the seer is invisible, detached, is the degree to which he bears authority within the terms of perspective (...)" (Bleeker 2008, p. 106). If visibility equals power, she explains, then almost-naked young white women would rule Western society.

4 I adopt the phrasing 'fleshing out' from Maaïke Bleeker, who in her article *See Me, Feel Me, Think Me: The Body of Semiotics* (2005) proposes to 'flesh out' her model of visuality that presents the spectator as a body "(...) positioned to function as a perceiving 'I' through various 'perceptual systems' simultaneously (...)" (Bleeker 2005, p. 109). Bleeker introduces the term 'corporeal literacy' to indicate the body's ability to perceive, read and make sense (Bleeker 2005, p. 110), and she argues that theatre, addressing the audience through different senses simultaneously, can provide a 'kind of experimental set-up' through which to explore how the body is involved in perceiving and understanding the world. This thesis is in a sense my attempt to, as Bleeker puts it, 'flesh out the subject of semiosis' and contribute to an understanding of the spectator as a sensible body.

on our perceptual systems. *NATURE or NURTURE*, as my case study, will function as an 'experimental setup' (Bleeker 2005) that helps me analyze how inside the perceiving body of the spectator culture relates to biology, matter relates to meaning and corporeal experience relates to abstract thought.

embodied cognition

Cognitive science is about understanding how human beings perceive the world and construct their experience. In the 1980s the field of cognitive science saw the rise of a new paradigm: that of *embodied embedded cognition*, which is mostly referred to simply as *embodied cognition*. It holds that the mind is completely embodied and embedded in our environments. As philosopher Marc Johnson puts it: "(...) the proper locus of the mind is a complex, multilevel, continually interactive process that involves all of the following: a brain, operating in and for a living, purposive body, in continual engagement with complex environments that are not just physical but social and cultural as well" (Johnson 2007, p. 175).

As the research into embodied cognition has developed and expanded over the past few decades, it has caused a turn towards cognitive science in the humanities. Theatre scholars Bruce McConachie and Elizabeth Hart note that while theatre and performance studies come relatively late to this interdisciplinary conversation, there seems to be a 'cognitive turn' at hand in theatre and performance studies as well (Hart and McConachie 2008). The interdisciplinary work done by theatre and performance scholars who are using cognitive science falls under the umbrella of the *cognitive-cultural approach* (Zunshine 2010), and so does this thesis.

In this thesis I will combine Bleeker's analysis of visibility in the theatre with two theories within cognitive science: embodied simulation and conceptual metaphor theory. *Embodied simulation* mostly concerns unconscious bodily processes that we perform in response to what we perceive, and is part of what cognitive scientists refer to as social cognition. Embodied simulation is therefore relevant to the processes that occur unconsciously and involuntarily in the relation between spectators in the theatre and the performers that they are looking at. *Conceptual metaphor theory* (CMT) arose from the field of cognitive linguistics and concerns the embodiment of abstract conceptual thought. Contrary to what its name may suggest, CMT is not concerned with metaphors in the conventional literary sense, but with the embodiment of conceptual thought in the brain's architecture. The joint work done by neuroscientist Vittorio Gallese (who is famous for his work on embodied simulation in the mirror neuron system) and George Lakoff (who, together with Marc Johnson, developed CMT) will allow me to describe the relationship between processes of embodied simulation and the way that conceptual metaphors behave in the brain. Especially their hypothesis of the embodiment of concepts (Gallese and Lakoff 2005) has far reaching consequences for the way I understand what meaning is made of and how performance is meaningful to us in this thesis.

What follows from the paradigm of embodied cognition for theatre spectatorship is that we need to rethink the relation between corporeal experience – the experience that we have of the reality of our sensing and moving bodies - and meaning-making. In an embodied view on meaning, our abstract thought

processes on the conscious level are shaped and structured by underlying processes at the level of 'the cognitive unconscious' (Johnson and Lakoff, 1999). The experiences that we have of our sensing bodies and of the world form an emergent level of meaning at the cognitive unconscious level. This mostly unconscious level of meaning gives structure and form to abstract meaning at the conscious level: the level that can be expressed in language (Gallese and Lakoff 2005, and Johnson 2010). The two levels of meaning can be discerned, but not separated. They are in fact two inseparable aspects of an ongoing process of perceiving, moving and understanding; of an interconnected flow between brain, body, world and back. Joining research on embodied simulation with conceptual metaphor theory will allow me to explore the bodily continuity between corporeal experience and meaning-making in the specific context of the act of looking in the theatre. This should result in a method that validates the impact of perceptual stimuli such as movement, shape, color, rhythm, sound, texture and smell, as well as of language on the abstract thoughts, conceptualizations and opinions of spectators.

The turn to cognitive science in cultural studies has provoked much criticism, most of which is based on the assumption that cognitive science leads to a reductionist biological determinism and will limit us to fixed laws of the universal 'hardware' of our brains, or on complaints that the analyses of artworks through cognitive science use long detours of complicated neuroscientific technicalities, to then come to conclusions that could have been drawn without going through all the neurological mumbojumbo.⁵ I will combine theatre studies and cognitive science in a way that shows that embodied cognition, contrary to the first point of resistance, provides a way to do justice to the plasticity and cultural diversity of human minds. I argue that by equating the mind with matter, we can expand rather than reduce our understanding of the complexity, diversity and unpredictability of human minds. To counter the second point of criticism, I will demonstrate that while I may come to conclusions about the 'meaning' of *NATURE* or *NURTURE* that could be found in more conventional ways, the value of using cognitive science is that it allows me to move beyond the question *what* this performance might mean, and to flesh out *how* its meaning is generated in and through the body.

The backbone of this thesis consists of a dialogue between Maaïke Bleeker's *Visuality in the Theatre* (2008) and cognitive science, building on the work that has already been done with cognitive science by theatre and performance scholars Bruce McConachie, Elizabeth Hart, Rhonda Blair, Amy Cook and others. The purpose of joining together Bleeker's understanding of visuality on one hand and several studies and theories in the field of embodied cognition on the other is twofold. Besides aiming to add to Bleeker's understanding of the spectator as a body looking, I hope to provide a useful addition to the growing but still relatively new field of interdisciplinary research of theatre and performance scholars who are using cognitive science. I will do so by demonstrating that Bleeker's analysis of visuality as a culturally and historically specific phenomenon provides a valuable theoretical frame to the existing research on cognitive aspects of theatre spectatorship. The 'cognitive turn' in theatre and performance studies is still relatively new, and there

5 The first point of criticism comes to the fore in Rhonda Blair's description of responses to her work in her article (*Refuting Arguments for the End of Theatre: Possible Implications of Cognitive Neuroscience for Performance* (Blair 2007). The second point of resistance is explained and exemplified by Amy Cook in her *Shakespearean Neuroplay, Reinvigorating the Study of Dramatic Texts and Performance through Cognitive Science* (Cook 2010, p. 18).

is still much new ground to cover. While many of the performance scholars who have joined the cognitive turn, such as Amy Cook and Bruce McConachie, suggest that embodied cognition could be especially suited to analyze the multisensory experiences that postdramatic theatre provides, the potential value of cognitive science in this respect does not seem to have been fully explored yet. The majority of the publications using theories from the field of cognitive linguistics appears to focus on the analyses of the texts of dramatic theatre plays, while most of the publications that address the significance of mirror neurons and embodied simulation for spectatorship focus on dance rather than theatre. What is missing between the analyses of dramatic theatre texts on one hand and of dance spectatorship on the other, is research that explores how cognitive science can add to our understanding of what happens cognitively when a spectator of a theatre performance is processing vision, sound, smell, tactile information and language, and all at once. I argue that by combining a cognitive approach with Bleeker's model for analyzing performances, which already focuses on the body of the spectator as their 'locus of looking', embodied cognition can be made productive for a discussion of the cognitive impact on the spectator of the way a performance addresses him or her as a perceiving subject more adequately.

the encultured brain

Besides a combination of visuality and embodied cognition, there is a third element that plays a role in my thesis. Cognition is not only embodied, but also 'embedded'. One of the things embodied cognition has established is that the way we think is largely shaped by our social and cultural environments. Therefore if I want to explain how a spectator understands *NATURE or NURTURE* using embodied cognition, it follows that I cannot limit myself to neurological research and dramaturgical strategies: I have to address the social and cultural environment that informs the way we think.

As the environment in which our brain is embedded mostly consists of our social and cultural environment, I will refer to the mind and the brain as being 'encultured' rather than 'embedded', so as to avoid any confusion with regard to the prominent role that culture plays in our cognitive processes. In the chapters to come I will argue that theatre performance *NATURE or NURTURE* aims to address the cultural assumptions we have about what childhood and selfhood are and should be, and I will describe those assumptions as part of my research. Maaïke Bleeker already provides a detailed account of the way that the culturally and historically specific moment of Western modernity shapes our understanding of the self. I argue, however, that an analysis of cognitive processes demands a slightly different approach to this cultural aspect of perception. What matters is specifically how we have *physically* encountered certain conceptualizations during our lives, for it are the experiences we have with our bodies of our cultural and social environments that impact the architecture of our brains. I have therefore focused mainly on studies concerning media representations and consumer culture to analyze the way we culturally construct our conceptualizations of selfhood and childhood.

This element of my thesis is relevant not just for theatre and performance studies

specifically. It also has some social relevance, as childhood is a category that is easily overlooked or taken for granted, in academic research as well as in everyday life. In a masterclass on Deleuze, taught by Laura Cull in Utrecht in May of 2011, a student asked her how women can be considered to be a minority, as they are not really outnumbered by men. I was struck by her reply: to be a minority means to be measured against a standard that does not apply to you. In the field of vision the struggle for power seems to be about who gets to define by what standards we will be measured. When we are being represented by an image or when we are being positioned by what we see, the question to ask is: is it in my interest to be positioned here? Is this the standard I want to be measured against? One of the assumptions that underlies my interest in this particular theatre performance is that children are often measured to standards that do not apply to them and are in that sense a minority, an assumption that is confirmed by Young-Bruehl's assessment that "(...) prejudice is built into the very way children are imagined" (Young-Bruehl 2012, p. 5).⁶ The confusing gaze into the audience of seemingly self-conscious children in performance *NATURE or NURTURE* indicates that what is put under scrutiny in *NATURE or NURTURE* is the measuring gaze of us adults that reflects and creates what childhood should look like. As a minority children are a special category, because unlike other groups who are confronted with prejudice children cannot be political actors themselves. So ironically, it seems like they are represented by adults by definition, rendering them dependent on the way we adults shape our relationship with them.

With this third element to my research I hope to show that using cognitive science has another advantage for theatre and performance scholars. It provides a way to inscribe the performance at hand specifically in that social and cultural context that shapes its observer's perception, while also shedding light on *how* that context shapes perception. While most performance scholars using cognitive science acknowledge that cognition is largely shaped in response to an environment, their analyses mostly address this social and cultural environment only in general terms. Cognitive science can provide a way to inscribe performances in the social and cultural context that is relevant to them, because the body of the spectator is the locus where a particular viewing experience and its more general social context are joined. The use of cognitive science allows me to combine the different disciplines that I use in my research, as all these aspects – visuality in the theatre, the embodiment of the act of looking, and the social and cultural practices that construct and reflect our conceptualization of childhood – come together in the brain and body of the spectator looking at the performance that forms the center of my research.

6 Young-Bruehl argues that there is a pervasive societal prejudice against children that legitimates and rationalizes hostile, violent and abusive behaviors towards children. In contrast with racism, sexism and homophobia however, according to Young-Bruehl the prejudice against children is hardly ever acknowledged. She proposes the term 'childism' as a starting point of thinking about "the huge range of anti-child social policies and individual behaviors directed against all children daily" (Young-Bruehl 2012, p. 4), the suffix 'ism' referring to "(...) the idea of treating a group of people as a possession and *legitimizing* their servitude with an idea, an 'ism'" (Young-Bruehl 2012, p. 5, italics in the original). She argues that childism differs from other forms of prejudice in that it has not been studied thoroughly and systematically as a prejudice, not in political discourse, not in the field of Childhood Studies (which as a field emerged only in the 1990's), and not as a subfield within Prejudice Studies.

procedure

So the project I am embarking on with this thesis is to analyze how *NATURE or NURTURE* impacts the spectator, using a cognitive-cultural approach. The goal of this thesis is to develop a method to analyze the way that a theatre performance impacts the spectator as a perceiving body, and to connect that impact to the processes of 'meaning-making' that happen in the embodied act of looking. I want to know how meaning emerges in human bodies out of the corporeal experience of seeing theatre performances.

The main research question that this thesis aims to answer is what the paradigm of embodied cognition within cognitive science can add to an understanding of the embodied act of looking in theatre studies, and I will approach it by answering the more specific question how the corporeal experience of the spectator relates to meaning-making in the embodied act of looking at performance *NATURE or NURTURE*. I will answer this question by fleshing out how the body of the spectator is biologically built to respond to the address that visuality places on the body of the spectator in the specific case of this performance, while keeping in mind that this biological body is deeply encultured.

In the first chapter, I will explore how Maaïke Bleeker's theory of visuality relates to theories of embodied cognition, and how they can be combined for an analysis of the embodied act of looking. By establishing a dialogue between these two bodies of knowledge I will build the theoretical framework that will constitute my understanding of theatre spectatorship. The second chapter answers the question how viewers create meaning out of sensory stimuli in general, and consists of a more detailed discussion of perception and of meaning-making from the perspective of embodied cognition. Part 2.1 describes how embodied simulation works in general, and more specifically how the self as a dynamic construction of the body and brain is impacted by processes of embodied simulation in the experience of seeing a theatre performance. In part 2.2 I discuss how concepts are embodied in the brain in the form of conceptual metaphors. In the third chapter I will analyze how childhood and selfhood are being conceptualized in our culture. And finally, in the fourth chapter, the two cognitive processes explored in chapter two will join their forces with analytical tools from Maaïke Bleeker's *Visuality in the Theatre*, and together I will use them to analyze the processes of embodied simulation and embodied conceptual meaning-making that are likely to be activated in the bodies of spectators in response to the way theatre performance *NATURE or NURTURE* addresses them, while taking into account the way their brains are encultured. So essentially, rather than attempting to pinpoint what 'meanings' this performance generates for individual members of the audience, I will disentangle some of the processes of perceiving and meaning-making that the act of looking at this specific performance provokes.

On a final note – in the interest of full disclosure of my personal agenda – the underlying question that brought me to the line of research you are about to dive into was the following: 'How does theatre act upon the self of the spectator?' As a research question it struck me as naively big and unanswerable, bringing about more problems than I could solve. It was when I attended a masterclass with theatre scholar Jane

Taylor, and when she asked the intimidatingly big question 'How is the self being produced?', that it dawned upon me that these are real questions that one can really seek answers to.

From the perspective of embodied cognition, the borders between what we experience as a self and the world are porous and dynamic. Ironically, at the same time the embodiment of concepts suggests that the notion of the self as a stable entity is also embodied in the architecture of our brains. One of the assumptions underlying my research is that *NATURE or NURTURE* addresses preconceptions, desires and fears concerning childhood and selfhood that are typical of contemporary society, and grounded in the same visual paradigm that Maaïke Bleeker discusses in her study. The idea is that these concepts (childhood and selfhood) are both embodied in the brain in ways specific of our culture, and that by placing the audience in a 'vision machine' (Bleeker) that produces how we see childhood, a performance like *NATURE or NURTURE* provides the kind of experimental set-up that can reveal how these concepts are related to the senses, to movement, to the experience of what it is like to live in a human body in our specific environment. This intimate relationship between sensing, moving and understanding is what this thesis is ultimately about, and dissecting how in the organic processes of this relationship our selves gain and lose their shape could be considered as the 'holy grail' of my research: I will not be able to give a final answer to the question what theatre 'does' to our 'selves' but I hope to get a small step closer to understanding how looking at theatre changes who we think we are.

Chapter 1.

the embodiment of the act of looking

In this first chapter I will build the theoretical framework that will constitute my understanding of theatre spectatorship and of the embodiment of looking in this thesis. I will do so by exploring the relation between Maaïke Bleeker's understanding of visuality in the theatre (Bleeker 2008) and the body of research and theories that fall under the umbrella of embodied cognition. That which Bleeker identifies as the 'scopic regime of modernity' provides the framework that will allow me to place embodied cognition (as well as the classic cognitivist theories opposing it) in the context relevant for theatre scholars: the context of culturally and historically specific modes of staging and looking. While in the interdisciplinary research of theatre and performance scholars that are using cognitive science, much work has been done to compare the insights from embodied cognition to more commonly used theories in our field, such as phenomenology, post-structuralism and psychoanalytical theory, I hope to show that with Maaïke Bleeker's relational approach to visuality theatre studies is already in possession of a theoretical framework that is perfectly compatible with a cognitive approach to spectatorship.

In the first part of this chapter I will explain what embodied cognition entails. I will start this section with a brief overview of the history of the conceptualization of the relation between body and mind, in order to place embodied cognition in the context of preceding and competing theories within cognitive science and neurophilosophy. In part 1.2 I will discuss what a 'cognitive-cultural approach' entails, and address some of the theoretical and methodological questions that a cognitive-cultural approach raises, to position my research in this relatively new field. In part 1.3 I will discuss Bleeker's relational approach to visuality in the theatre, focusing on the way the relation between body and mind and between subject and reality are to be understood in her theory, and I will explain how it relates to the paradigm of embodied cognition.

This will be a chapter of many 'isms'. The question what thinking is took me from Cartesian dualism to neurocomputationalism and from representationalism to embodied realism. I hope that from the forest of isms, neuronal clusters and hypotheses that I take you through in chapter one and two of this thesis, one simple idea will rise to the surface and stay there: the idea that our intellect is not disembodied but fundamentally sensual. We understand the world with our flesh.

1.1 body and mind

"[A]cknowledging the profound truth of our embodiment calls into question several key components of what people think it means to be a person. It is not surprising, therefore, that once people really come to understand what an embodied conception of mind entails, they are going to be upset about it" (Marc Johnson 2010, p.15).

In November 2009 I picked up a *Psychologie Magazine*: a popular Dutch magazine about psychology. It featured a short article about psychological research showing that test persons judge someone they meet for the first time more positively if they have been given a cup of warm tea or coffee to hold just before meeting them. The article ends with a piece of career advice: if you step into your boss's office to negotiate a raise, start by handing them a cup of coffee - they will like you better with warm hands. Since then I have come across small articles in the same genre throughout newspapers and popular magazines everywhere. For instance, tests show that we behave ethically 'cleaner' immediately after we wash our hands, that we lean slightly backwards when we talk about the past, that if you inject your forehead with Botox to prevent it from frowning you become less susceptible to depression, and that if a book is heavier we judge the content as more important. All these little bits of research are more than popular entertainment. They are part of developments in the sciences that require a change in the way we view the human mind.

moving from classic cognitivism to second-generation cognitive science

Most - if not all - of the research that combines theatre and performance studies with cognitive science ascribes to an embodied view on cognition. To place this view in the context of the lively debates within the field of cognitive science, the most commonly made distinction is that between two radically different models of the mind: classic cognitivism or first-generation cognitive science on one hand, and second-generation cognitive science on the other.⁷

Theatre scholar Amy Cook describes the difference between the two paradigms as a shift between seeing the brain as a computer that puts input through algorithmic processes (classic cognitivism), and seeing the brain as a part of an organism that shapes and is being shaped by its environment (second-generation cognitive science) (Cook 2006, p. 228). In second-generation cognitive science this environment can be defined more narrowly as the body, and can be extended to social environments, cultural practices and communication frameworks.⁸ According to Amy Cook, it is nowadays "(...) relatively uncontroversial in

⁷ While these names suggest succession it is important to note that they still exist in many forms next to each other, and can even be blended.

⁸ In their introduction to *Performance and Cognition*, Hart and McConachie more specifically state that while there are many

the cognitive sciences to say that thinking is an embodied and embedded process. We think *with* and *through* a very particularly environmentally situated body" (Cook 2010, p. 131, italics in the original).

First-generation cognitive science, or classic cognitivism, has its roots fixed tightly into the ground of Cartesian dualism, and is represented by early twentieth century philosophers and scientists such as Jerry Fodor and Noam Chomsky. It basically contains all forms of functionalism and neurocomputationalism. Second-generation cognitive science arose in the 1980s and contains the theories of connectionism and embodied cognition, among others. It is represented in the work of, for example, neuroscientists Antonio Damasio, Gerald Edelman, Vittorio Gallese and Vilayanur Ramachandran, psychologists Francisco Varela and Eleanor Rosch, linguists George Lakoff and Raymond Gibbs and philosopher Marc Johnson.

The paradigm I am operating under in this thesis is that of second-generation cognitive science, and within that field I more specifically use theories of embodied and embedded cognition, to create a toolkit for the analysis of the embodied act of looking. In the following section however I will also describe the theories in cognitive science that precede that of embodied embedded cognition, as these theories have influenced our common-sense understanding of what thinking is, and are therefore relevant to this thesis as a part of the cultural environment that has shaped both the traditional performance strategies of dramatic theatre and the embodied and embedded brains of those looking at theatre performance *NATURE or NURTURE*.

Cartesian dualism and classic cognitivism

Seventeenth century philosopher René Descartes asserted that body and mind are two separate substances: the 'res cogitans' and the 'res extensa' (Dooremalen et al. 2010, p. 10). While as a result of the success of contemporary science, the idea of physicalism (in which there is nothing outside the physical) has become more and more widely accepted, many contemporary theories about the human mind still support some form of body-mind dualism.

One of the problems that rise from Descartes' split between body and mind is the question how his two substances interact with one another. As Dooremalen, de Regt and Schouten describe in their overview of the philosophical implications of research concerning the brain and consciousness (2010), during the first half of the twentieth century psychology dealt with this problem in the theory of behaviorism: by ignoring the mind. Behaviorism, as represented for example by psychologist B.F. Skinner, argued that as events in the 'mind' are not observable, psychology should concern itself with observable behavior. Instead behaviorism studied the human as a being with complex neurological mechanisms in which certain stimuli lead to certain responses, but without a mind. Behaviorism is a radical form of physicalism, and it rejects the

disagreements concerning the architecture of the human mind/brain within second-generation cognitive science, they are all unified in their rejection of the classic cognitivist representationalism, and in their assertion that the root of human emotions, language and decision making lies in our sensorimotor experiences, which are processed through embodied structures (Hart and McConachie 2006, p. 228).

use of terms that refer to qualia or intentionality⁹.

In the 1950s – at the same moment that the first computers were being built – a shift occurred. Alan Turing's view on the human being as a machine that processes symbols like a computer inspired the rise of cognitive psychology, and later cognitive neuroscience. Cognitive terms such as 'mind', 'intentionality', 'perception', and 'memory' returned to the stage, which set off the beginning of a post-behaviorist era, and with it the return of the problem of body and mind (Dooremalen et al. 2010, and Kolk 2008).

From that moment on it becomes more difficult to identify a consensus on how body and mind relate to one another. Dooremalen et al. and Herman Kolk describe the rise of two competing theories in the 1950s: the identity theory of mind, and functionalism (Dooremalen et al. 2010, and Kolk 2008). Identity theory holds that mental states and brain states are identical: they are two different terms for the same phenomenon. As it equates the mind with the brain, identity theory can be qualified as a reductionist form of physicalism. As such it solves the problem of how body and mind relate to one another (because they are the same thing, there is no relation between them), without denying the existence of mental states in the way that behaviorism does.¹⁰ A competing and still successful theory can be classified as a non-reductive physicalism: the theory of functionalism.

Functionalism is intimately connected with Cartesian dualism as it holds that mental states cannot be reduced to the physical. The founder of functionalism, neuroscientist Hilary Putnam, argued that what matters about a mental state is what it does, not what it is made of. Mental states are understood to be constituted by their functional role - the place they occupy in a web of causes and effects; a web of sensory input, behavioral outputs, and other mental states.¹¹ Functionalism is still one of the dominant theories of the mind today. It has gained much strength as a result of the success of the computationalist model of the mind.

Philosopher and cognitive scientist Jerry Fodor is a functionalist, and an important advocate of neurocomputationalism. He is often regarded as one of the architects of what we now call classic cognitivism. His computational form of functionalism understands the mental as software that runs on the hardware that is the neural architecture of our brains. Dooremalen, de Regt and Schouten explain that according to Fodor thinking is basically an internal computation with symbols through formal syntactic

9 Qualia are about what things are like for you: what it is like to breathe, to be cold, to see the color red, or to read this text. Cognitive states are 'about' something (Dooremalen et al. 2010, p. 15). This 'aboutness' is usually called 'intentionality' (Johnson 2007, p 114). Cognitive intentional states are also referred to as 'propositional attitudes' because they are an attitude towards a proposition: 'it rains', for example, is a proposition, and a propositional attitude can be 'I hope it rains' or 'I believe it rains'.

10 Behaviorism is also a reductive form of physicalism, but whereas behaviorism rejects the mental entirely, identity theory argues that the mental exists but that it is nothing more than the neural.

11 Functionalism supports the hypothesis of multiple realizability: the idea that it doesn't matter if our neuronal connections would be built with braincells or with computerchips: our mental life would be the same. We would have the same minds if the very same connections that exist in our 'brainstuff' would be realized in other 'stuff'. This is where functionalism is radically different from identity theory: if the mind is realizable in multiple types of 'stuff' there can not be a psychoneural identity of the mental and the physical.

A prominent advocate of the multiple realizability hypothesis is neurophilosopher Dan Dennet. Dennet has become famous for arguing that as artificial intelligence progresses, we will be able to create a robot with consciousness, and that in that case we should grant this robot human rights (Kayzer 1990). Dennet developed a theory of homuncular functionalism, in which a cognitive system can be split into ever smaller subsystems characterized by their causal roles and not by the 'stuff' they are realized in: Dan Dennet's 'army of idiots' (Dooremalen et al. 2010 p.41).

rules (Dooremalen et al. 2010, p. 41-46). Fodor's neurocomputationalism equates mental states with computational states. According to philosopher Marc Johnson, computationalism (or as he calls it: the 'conceptual-propositional theory of meaning', in Johnson 2010, p. 10) defines concepts as symbolic representations in the mind. The idea is that we reason and grasp meaning by consciously organizing these symbolic representations into meaningful propositional structures via formal rules of syntax, and by then organizing those propositions into thoughts and arguments via formal rules of logic.

Both functionalism and neurocomputationalism are based on the concept of representationalism, as they hold that cognition and thought consist of symbolic representations inside an organism's brain that refer to an outside world. The view that cognition operates via internal mental 'representations' (ideas, concepts, images, propositions) that are capable of being 'about' the external world (Johnson 2010, p. 114), implies that thinking is not directly connected with the body, nor with the world.¹² Computationalism therefore meets the criticism that it pictures the mind as an inwardly directed system of representations, ignoring the world as well as the body.¹³ It also leads Dooremalen, de Regt and Schouten to argue that even if contemporary computationalism tries to stay within a physicalistic framework, it is a form of crypto-Cartesianism or a Cartesian materialism.

Currently, many cognitive scientists and psychologists still follow Fodor in defending a Cartesian psychology that ignores the body as well as the world. Theories of functionalism and neurocomputationalism together form the body of ideas that I will refer to as 'classic cognitivism', which I regard as a part of the culturally and historically specific context that through its representationalism supports a disembodied view of the mind: a mind that is detached from the body and from reality.

second-generation cognitive science

As a result of discoveries in the field of artificial intelligence, an alternative to neurocomputationalism arose in the 1980s. Artificial neural networks that before had been organized in a way that is consistent with the assumptions of classic cognitivism were very slow. In search of a solution, artificial neural architectures were built in which representations were not localized, but distributed across a network of connections, which were organized not in a serial manner but parallel and simultaneous to each other. These 'connectionist' models worked much faster, and approached the human mind more closely than the previous 'classic cognitivist' neural networks. This resulted in the theory of connectionism, which was a radical break with representationalist models of the mind, and the beginning of what we now call second-generation cognitive

12 Dooremalen et al. state that in Fodor's computational functionalism there is no need to look at reality to understand our mental states. It is sufficient to look at the characteristics of the representations in our inner computer and at the syntactic rules by which they are manipulated. In this view it is irrelevant if mental representations of the outside world are correct or not, or even if everything we experience is a hallucination (Dooremalen et al. 2010). In addition, Mark Johnson – an advocate of the embodied embedded view on the mind – explains that in the theory of neurocomputationalism "(...) neither the syntactic rules, nor the logical relations, nor even the propositions themselves have any intrinsic relation to human bodies" (Johnson 2007, p. 8).

13 Another point of critique is that this view does not account for the differences in thought processes and experiences that different people have - even though they supposedly all should be computing with the same functional organizational structures (Dooremalen et al. 2010).

science (Dooremalen et al. 2010, p. 61 – 77). Connectionism entails that knowledge is not located in fixed neural representations that we can compute, but invisibly distributed among neural knots and connections. This means that neural networks don't process information on a symbolic level but in subsymbolic processes.

While connectionism rejects the representationalism of classic cognitivism, this theory too meets the criticism that it leads to a view of the human being as locked in inside their inner neural structures; that it depicts us as lonely inwardly focused beings that are closed off from the outside world, locked in in the illusory theatres of our minds. So where are body and world in this picture? Embodied cognition is indebted to connectionism but in contrast allows for the view that, as George Lakoff and Marc Johnson famously stated, "*(W)e were never separate from reality to begin with*" (Lakoff and Johnson 1999, p. 93, italics in the original).

embodied cognition

Cartesian dualism and classic cognitivism define thinking as an 'offline' activity: the mind receives input, and we then build a representation of a world that we can think about inside our inner minds. Neither the world, nor the body, and arguably not even the brain is needed for the mind to think in these theories. In the mid-eighties (roughly at the same time that connectionism was born) a field of research arose that regards the body and the environment as essential to cognition: embodied embedded cognition. An argument supporting the theory of embodied embedded cognition is that it does not make sense that the brain would create and update a complete and detailed copy of the world to compute with in a kind of inner theatre in the mind. As the real world is continuously available for us to consult it makes more sense that we continuously do so, and that thinking is an 'online' activity: a process that happens in the dynamic interactions between system and reality; between brain, body and environment. Cognition is the result of direct contact between subject and reality, unobstructed by mental representations (Dooremalen et al. P 99 – 109).¹⁴ The basic idea of embodied cognition is that our thought processes are not executed from some kind of latent Cartesian central command post in our heads. Connectionism locates cognition in the knots and interactions in the brains architecture, and embodied embedded cognition (mostly referred to simply as 'embodied cognition') extends these interactions to the entire body and to the embeddedness of that body in an environment.

14 Crucial to the development of embodied cognition is a discovery in the field of robotics that led to the development a more embodied kind of robots: 'mobots'. A problem has long been that classic robots which are equipped with a detailed map representing the outside world (classic cognitivist robots so to speak) are very slow: every time anything in the environment changes they need to perform new computations to adjust their inner maps. A revolution was caused by the development of 'mobots'. Dooremalen, de Regt and Schouten describe that Robot builder Rodney Brooks struggled when trying to design a more effective version of the computer element that Rodney and his coworkers called the 'cognitive element'. There needed to be a point where the sensory input could be connected with a center of command that could send instructions to the body of the robot: their 'cognitive headquarters', so to speak (Dooremalen et al. p. 105). Rodney decided the best way to solve the problem was not to build this center of command at all: maybe cognition was not needed. Brooks discovered that for his robots indeed it was not; sensing and acting was enough. He started to build robots with a decentralized system that were driven by several local senso-motor feedbackloops. Their intelligence was not deliberative but reactive, and they were successful because instead of depending on an inner representation of reality they consulted reality itself. Rodney deduced – and many evolutionary biologists agreed – that intelligence is not an 'offline' activity.

While the debates between functionalism, computationalism, connectionism and many more 'isms' is ongoing, in this thesis it is the paradigm of embodied cognition that inspires me to ask what happens to us when we see a theatre performance. If just holding a drink that warms my hands will change the content of my thoughts, than what is the impact on my intellect of all other bodily sensations? How does it change the things that I think and the way I think them if I am wearing stilettos, if I have a sunburn, if I am overweight, if I am running a marathon, or if I sit in the confined space of the theatre and look at someone performing for me? If cognition is a matter of direct contact between subject and reality, then what happens when that subject is situated in the reality of a theatre performance?

1.2 the cognitive-cultural approach

"There is no such thing as a natural or original state of mind. From the very beginning, what emerges as 'mind' is the effect of interaction of human bodies with the outside. Subjectivity emerges from this interaction and a variety of technologies, from the very first stone axe to parallel computing, mediate in how this interaction takes shape" (Bleeker 2010, p. 41).

The term 'cognitive-cultural approach' is used among others by literary scholar Liza Zunshine. So what exactly does a cognitive-cultural approach entail? Zunshine argues that the job of cognitive cultural theory is to address relationships between the humanly universal and the culturally and individually specific, in which the cultural should be understood as being in part constituted by the cognitive. It is "(...) the goal of the cultural cognitive project to understand the evolving relationship between two immensely complex and historically situated systems - the human mind and cultural artifacts (...)" (Zunshine 2010, p. 3).

nature and culture

While the cognitive turn produces a lot of enthusiasm in the fields of theatre and performance studies, it also meets quite some resistance.¹⁵ Apparently, there is a prejudice against neuroscience in the humanities.¹⁶ The resistance to cognitive science seems to be based, mainly, on a presumed separation between nature and culture that second-generation cognitive science in fact does not support: on the dichotomous thinking about nature as a passive, inert, unchanging and ahistorical background upon which the cultural takes place, characterized by Lisa Zunshine as "(...) intellectually and politically crippling (...)" (Zunshine 2010, p. 14) .

What embodied cognition tells us about the relation between nature and culture is that human biology and the culturally and individually specific are intertwined at every level, continuously shaping and changing each other. It is, so to speak, of our nature to be cultural beings. Because the

15 Rhonda Blair noticed just how strong the resistance to science can be when, upon a paper she gave about cognitive science and theatre, several colleagues dismissed her research as the kind of 'biological determinism' that they had 'no use for'. In her article (*Refuting*) *Arguments for the End of Theatre: Possible Implications of Cognitive Neuroscience for Performance* (2007) she addresses the fears and anxieties that underlie the resistance towards science. Blair suggests that the fear is that cognitive science will force us to rethink identity and the self in a way that eliminates the part of us that has choice – and makes art. She counters these fears by pointing out that science increasingly confirms the complexity and contingency of the material processes that support consciousness: it is actually not taking away "the human" but rather, it is providing tools to engage "the human" more closely.

16 While a slightly hostile attitude towards cognitive science may be present within cultural studies, some neuroscientists in turn are possibly also biased with regard to our field. Amy Cook illustrates how sensitive the relation between science and the humanities can be with the example of a neuroscientist who attacks an essay that applies cognitive science to questions concerning poetry. The neuroscientist in question dismisses the essay by calling it 'neurospeculation' rather than 'neuroscience', and by argues that neuroaesthetics is a delusion, therewith "(...) recapitulating a positivist distinction between science and speculation, wherein if it is not science it is gobbledygook" (Cook 2010, p. 18).

encultured nature of cognition has not washed down to public knowledge yet, and is easily overlooked in the somewhat general indication that cognition is 'embedded', I prefer to replace this term and refer to cognition as being not only embodied but also encultured. While our social and cultural environments continuously shape and change the architecture of our neuronal connections, at the same time our biology restrains what cultural environments we can create, determining what thoughts we are and are not capable of. As Bruce McConachie puts it: "(P)eople, not texts, make history, though they never make it in ecologies and with brain of their own choosing" (McConachie 2007, p. 580).¹⁷

art as continuous with everyday life

Culture and biology are intertwined to the point where it is impossible to distinguish the two from each other. According to Zunshine this supports the view of art as a form of communication that is not separate but continuous with our social institutions and our everyday practices. She refers to Raymond Williams, who already criticizes the dichotomies that separates art from reality and the human being from the world he observes in 1961, and she explains that cognitive science provides new proof to destabilize this view on the arts. The social-cultural environments that people share influence the structure of their minds through repetitive experiences of these environments. Therefore individual cognitive development and social institutions (which according to Zunshine includes the arts) mutually impact each other (Zunshine 2010, p. 11).

This consequence of cognitive science for cultural studies supports my argument that cognitive science can be especially useful when it comes to connecting the dots between the experience of the adult viewers that look at the child performers in theatre performance *NATURE or NURTURE* on one hand, and the way these same adults view children in their everyday life on the other.

methodologies

As Lisa Zunshine explains, the relations between the evolved architecture in our brains and the cultural and historical context in which humans find themselves are only temporarily stable, because our social and cultural context continuously shapes our brain's structures. These relationships are coded and recorded in cultural artifacts. It is the job, she argues, of cognitive cultural studies to chart the manifestations of the

17 Theatre scholar Elizabeth Hart 's article *Performance, phenomenology, and the cognitive turn* (2006) compares the relation between culture and biology as defined by embodied cognition to the way that this relationship is to be understood within phenomenology and poststructuralism. As Elisabeth Hart explains it, there is a material continuum between two forms of embodiment: the primary cognitive materiality of mind and body, and the second materiality of language and discourse as the social manifestation of mind and body. This shared materiality of the phenomenal and the linguistic/discursive dimension of performance enables embodiment to manifest in its primary cognitive form when the body/mind influences culture (theorized by Gardner), but also in its secondary form when culture influences the individual body/subject (theorized by Butler). Hart argues that some degree of agency must finally reside in both: "Cast onto the common ground of cognitive embodiment, both the things and the signs (or more inclusively, language) that make up the full theatrical experience emerge jointly from the materiality of the human body (Hart 2006, p. 48).

relations between nature and culture as they manifest in art. However, "(...) because the relationships between the humanly universal and the culturally specific are only 'temporarily stable', the investigation of these relationships is itself open ended on several accounts" (Zunshine 2010, p. 2).

If the job of cognitive cultural studies is to chart the manifestations of a relationship that is inherently unstable, this will inevitably present the theatre scholar with a few problems. While, as Zunshine points out, there is some theoretical coherence in cognitive-cultural studies, the difficulties they present are maybe most clearly expressed in the methodological eclecticism in this field. Zunshine explains that we should not feel constrained in our choice of methodology by boundaries between different subfields. Instead the 'fuzziness of boundaries' that is characteristic of cognitive science should encourage us to consider ourselves 'bricoleurs' who reach for the best mix of insights without worrying about blurring lines between the various domains in cognitive science. Cognitive scientists cross disciplinary boundaries on a daily basis, and we should feel free to do so as well (Zunshine 2010, p. 2-3).

The question of methodology has caused some debates among theatre and performance scholars. An early and prominent advocate of the cognitive turn in performance studies is Bruce McConachie. He states that cognitive science is a more 'robust' paradigm: a paradigm that provides valid truth claims in theatre and performance studies and that challenges older assumptions and theories (McConachie 2008). While McConachie places emphasis on the robustness of cognitive science and empirical research and on the promise it holds of providing evidence for (or against) our own theories, theatre scholars Amy Cook, Rhonda Blair, and David Saltz, as well as literary scholar Lisa Zunshine, all express a more nuanced view on the 'scientific robustness' of cognitive neuroscience by pointing out that cognitive scientists disagree among themselves on various issues, use very diverse methods, and that their discourse is as lively and varied as our own (Blair 2007, Cook 2007, Saltz 2007 and Zunshine 2010). David Saltz warns us not to make cognitive science the new dogma, and while McConachie places cognitive science in opposition to the grand theories of performance studies, Cook, Zunshine, Blair and Saltz all argue for a more conciliatory attitude in which the truth claims of neuroscientific research do not necessarily overrule the truth claims of philosophical theories.¹⁸ As Amy Cook puts it: "Interdisciplinary work requires that scholars be bilingual – it does not require them to be converts" (Cook 2007, p. 580). In this thesis, I will move between cognitive science and theories from the fields of theatre and performance studies without making a hierarchical distinction between the two, and my research will in addition include knowledge from the fields of childhood studies, developmental psychology and sociology, blending various domains together.

18 An example of the eclecticism in approaches to interdisciplinary research is that according to Bruce McConachie cognitive science overthrows assumptions deriving from psychoanalysis. He states that the method of psychoanalysis is flawed and cognitive science the better paradigm (McConachie 2008). Theatre scholar Mark Pizzato however uses cognitive science and psychoanalysis combined, the two reinforcing each other (Pizzato 2006). The same oppositions in methodology appears in the way some performance scholars use cognitive science as an alternative to phenomenology or to semiotics, while other combine them.

1.3 **visuality**

“Growing awareness of the inevitable entanglement of vision with what is called *visuality* – the distinct historical manifestations of visual experience – draws attention to the necessity of locating vision within a specific historical and cultural situation. This is a situation in which what we think we see is the product of vision 'taking place' according to the tacit rules of a specific scopic regime and within a relationship between the one seeing and what is seen. What seems to be just 'there to be seen' is, in fact, rerouted through memory and fantasy, caught up in threads of the unconscious and entangled with the passions. Vision, far from being the 'noblest of the senses' (Descartes, 1977), appears to be irrational, inconsistent and undependable. More than that, seeing appears to alter the thing seen and to transform the one seeing, showing them to be profoundly intertwined in the event that is *visuality*” (Bleeker 2008, p. 1).

In this part I will discuss what Maaïke Bleeker’s view on *visuality* in the theatre entails, and explore how it relates to findings and theories within the paradigm of embodied cognition. I will explain why joined together these two elements shed a light onto the relation between the theatre as a ‘vision machine’ and the perceiving subject, and can allow me to address the way that - as Liza Zunshine would put it - the relation between the evolved architectures of our brains and the cultural context in which our everyday lives are situated, manifests itself in *NATURE or NURTURE*. I will argue that the modes of looking and staging that Bleeker describes as typical of Western modernity and of the postmodern fascination with the deconstruction of the modern Western worldview are analogous to the worldview expressed by classic cognitivism and what we could regard as its 'deconstruction' in the theory of embodied cognition. The classic cognitivist understanding of the mind, of meaning and of the self on one hand, and the modern visual paradigm as Bleeker describes it on the other, together form part of the social and cultural influences that shape the processes of perception and meaning-making of the spectators of *NATURE or NURTURE*. In the chapters to come I will argue that this performance explicitly aims to destabilize these conceptualizations of vision and of the self.

visuality

Visuality is the historical manifestation of visual experience, and the historically and culturally specific scopic regime of Western modernity is characterized by an object immanent understanding of *visuality*. This object immanent view implies an objective point of view from which things can be seen 'as they really are', and

understands the one looking as standing in opposition to an object that is given to be seen 'over there'. The key observation Maaïke Bleeker makes in her book *Visuality in the Theatre* (2008) is that this opposition denies the body seeing - the self - as the locus of looking.

What remains invisible in the object immanent understanding of visuality is the body of the one who is looking: a body that sees from a subjective point of view and that is encultured to see in specific ways. Maaïke Bleeker explores the relationship between this perceiving body and the tacit rules of visuality typical of our culture, and she argues that:

"(...) ways of showing something respond to viewers marked by particular presuppositions, experiences, fears, and desires; to viewers marked by ideas and presumptions characteristic of a particular world view. (...) This viewer is the product of Western Modernity and its various forms of subjection, while being also post-modern in his or her fascination with the destabilization of this world picture and the modes of perception constitutive of it" (Bleeker 2008, p.10).

Bleeker's book can be read as a critique of the strict division between vision, the body and the other senses that is typical of the modern understanding of vision, of the self, of the world, and of the theatre. She argues for a relational approach to visuality that acknowledges the subjective point of view of the seer as a body perceiving. According to Bleeker, seeing is "(..) an activity that takes place at the intersection of the physical possibilities of our bodies, and how they are shaped by cultural conditioning" (Bleeker 2008, p. 17). She dissects visuality as it takes place in the theatre as a result of the interaction between the address presented by the aesthetic logic of what is seen and the response of a seer, which allows her to situate the modes of looking that are taking place in the theatre within the history of visuality as a culturally specific phenomenon.

Bleeker traces the roots of the modern Western visual paradigm back to René Descartes, and to the early renaissance technique of perspectival painting. I follow Mark Johnson in arguing that classic cognitivism is a latent form of Cartesian representationalism (Johnson 2010), from which follows that it shares its roots with Bleeker's 'scopic regime of modernity'. Consequently I argue that the object immanent worldview that characterizes the scopic regime of modernity as described by Bleeker is analogous to the worldview expressed in the theories of classic cognitivism. At the same time the paradigm of embodied cognition is analogous with Maaïke Bleeker's relational view on visuality, as both views understand the relation between subject and reality as a continuous process; a dynamic relation in which both impact and change the other. Moreover both theories focus on the body as the locus of respectively thinking and looking. These analogies form the basis of my argument in this thesis, as they form the ground upon which I connect Bleeker's relational approach to visuality in the theatre and various theories of embodied and embedded cognition to each other.

perspective

Constitutive of the modern visual paradigm, Bleeker argues, is the early renaissance technique of perspectival painting; an invention in the early modern period that is "(...) fundamental to the development of the modern scientific world view and the constitution of the modern scopic regime" (Bleeker 2008, p. 12).

As Maaïke Bleeker explains, perspective is a paradox. The technique of perspectival painting involves constructing an entire image in relation to one point of view that is located outside the image. Perspective holds the promise of a 'view from nowhere': if we take up the position presented to us the picture's composition provides us with a totalizing view, a "(...) perfect view from where everything looks as it should" (Bleeker 2008, p. 46). The aesthetic logic of perspective invites the viewer to take up the specific point of view implied in the image so that he or she can then be absorbed in a view through a *finestra aperta* and see the world 'as it is'. At the same time however, all that is seen is staged for a particular viewer, who is invited to take up the specific viewing position that is implied in the logic of the image. The logic of perspective thus invites viewers to understand what is in fact a highly artificial construct as a natural depiction of how things 'really are' that exists independently of their point of view.

According to Bleeker the concept of perspective has pervaded our conception of the world. More than just a technique for making pictures, it is a "(...) constellation of ideas, beliefs and prejudices (...)" that informs our perception at the deepest level, organizing how we think, see and imagine (Bleeker 2008, p. 13). Perspective offers the subject looking a point of view marked by absence: a blind spot that obscures the world views that inform the act of looking. Taking a closer look at this blind spot, Bleeker argues, may contribute to "(...) understanding why particular viewers would be willing to take up this point of view and recognize the vision presented as 'how it is', but may also explain why other viewers feel disoriented, alienated, or displaced by particular ways of showing" (Bleeker 2008, p. 10).

theatricality and absorption

Two concepts Bleeker uses to draw an analogy between perspective and drama, and to analyze the way that the modern Western scopic regime is constructed and deconstructed in the theatre, are theatricality and absorption. In his *Postdramatic Theatre* (2006), Hans Ties Lehmann argues that dramatic theatre and perspectival painting are constructed according to the same logic, as they both aim at absorbing the seer into the seen so that what is staged appears as natural and true. Dramatic theatre presents itself to viewers as a coherent unitary world that exists autonomously from the audience, allowing viewers to understand what they see as a meaningful totality existing independently from them. Bleeker argues that for this to be effective, both the perspectival painting and the dramatic theatre performance have to treat the one looking as if he or she is not there. As long as the technique goes unnoticed to the viewer, drama can absorb the viewer in the story told by what is staged, but if they are noticed the effect is the opposite of the illusion of a

truthful representation of the real: theatricality. Perspective and drama both hold the promise of immediate access to what is seen, and in both techniques what has to be repressed in order for the illusion of immediacy to remain intact, Bleeker argues, is theatricality.

Drama and perspective both offer viewers the illusion of seeing the world 'as it is in itself', as if from a point of view that is stable and detached from the scene depicted: a view from nowhere. This point of view brings them closer to the world presented on the dramatic stage or in the perspectival painting, but it also distances them from their bodies as their 'locus of looking'. Maaïke Bleeker argues that theatricality can be seen as 'other' to the object immanent understanding of visuality: that which must be repressed for this world view to appear as truthful. The repression of theatricality in dramatic theatre can therefore be considered to be symptomatic of the modern Western scopic regime.

the subject-object dichotomy

Within the paradigm of embodied cognition, cognitive linguist George Lakoff and neurophilosopher Mark Johnson have created the theory of embodied realism.¹⁹ Their theory forms a big part of the theoretical ground I build this thesis upon (which I will explain in more detail in chapter two), and provides part of my cognitive 'tools' in chapter four. They define cognition as a dynamic process that happens between the perceiving subject and reality, thereby sharing a relational understanding of perception with Maaïke Bleeker. Embodied realism rejects a strict subject-object dichotomy, which as Johnson and Lakoff argue results either in disembodied objectivism or in intersubjective relativism:

"Disembodied scientific realism creates an unbridgeable ontological chasm between 'objects', which are 'out there', and subjectivity, which is 'in here'. Once the separation is made, there are only two possible, and equally erroneous, conceptions of objectivity: Objectivity is either given by the 'things themselves' (the objects) or by the intersubjective structures of consciousness shared by all the people (the subjects). (...)

The problem with classical disembodied scientific realism is that it takes two intertwined and inseparable dimensions of all experience – the awareness of the experiencing organism and the stable entities and structures it encounters – and erects them as separate and distinct entities called subjects and objects. What disembodied realism (...) misses is that, as embodied, imaginative creatures, *we were never separate or divorced from reality in the first place*" (Johnson and Lakoff 1999, p. 93, italics in the original).

This criticism of a 'disembodied' scientific realism that Johnson and Lakoff present here echoes Bleeker's

19 While most publications that combine theatre studies and cognitive science identify Johnson and Lakoff as the architects of embodied realism, theatre scholar Elizabeth Hart speaks of "(t)he embodied realism of George Lakoff, Mark Johnson, Raymond Gibbs, Mark Turner and Gilles Fauconnier" (Hart 2006, p. 37).

criticism of the objectivism of the Western modern paradigm, as well as her criticism of the postmodern relativism that exists at the other end of the spectrum.²⁰ Furthermore their description of the chasm between subjects and objects within a disembodied scientific realism concerns the same worldview that, as Bleeker argues, is reflected and perpetuated by the institute of perspective.

While both Maaïke Bleeker and Johnson and Lakoff thus reject the objectivism that follows from a disembodied view on the mind and on vision, they also share a rejection of a postmodernist relativism in which 'anything goes'. Both Bleeker and Johnson and Lakoff explain this intersubjective relativism as a result of a disembodied view on perception which fails to see how our bodies shape and limit our perception.

The view on the human mind and on the embodiment of (visual) perception that is shared by Bleeker and the paradigm of embodied cognition, represented here by the theory of embodied realism of George Lakoff and Mark Johnson, emphasizes the direct contact between subject and reality (Johnson and Lakoff) or between subject looking and object seen (Bleeker). Both theories share that they identify the body as the source of the subjectivity of perception, and as the organism that shapes and restrains the way we perceive and understand the world, as this body is being positioned by what it sees in specific ways (Bleeker) and is furthermore encultured to perceive in specific ways (Lakoff and Johnson as well as Bleeker). These analogies form the ground upon which I will explore these three elements of the embodiment of the act of looking: the biology of perception and meaning-making inside our bodies in chapter two, the social and cultural context that has encultured our bodies in chapter three, and the way in which the performance that acts as my case study addresses and positions the bodies of its viewer in chapter four.

20 While H.T. Lehmann argues that on the postdramatic stage the dramatic frame is undone and an emphasis is placed on the 'real' presence of the performer, Bleeker argues that this 'presence-effect' is still the result of aesthetic strategies that successfully match the preconceptions and world views of the audience. There is still a subjective point of view from which what is given to be seen on stage needs to be perceived for the effect of 'unmediated presence' to occur. According to Bleeker, the deconstruction of dramatic theatre aims at evoking immediacy just as drama and perspective do, and the subject of vision is still presented as a disembodied I/eye (Bleeker 2008, p. 23).

Chapter 2.

perception, movement and thought

Maaïke Bleeker argues that the ultimate implication of the Cartesian paradigm is our identification with a dead body. This is a body that disappears in the act of looking, and that is either marked by absence or, when it does come to our explicit awareness, is marked as 'other' to the self. She also proposes that to allow for an embodied understanding of subjectivity, we need to invert the primacy of a psychological interiority over a corporeal exteriority, and to understand this exteriority as the very 'stuff of subjectivity' (Bleeker 2008, p 6). I will take up her advice in this chapter and turn to cognitive science in search of answers to the question how we can identify that which we understand as our 'mind' and our 'self' with a body that is a living, breathing and moving organism. I will discuss how viewers create meaning out of sensory information in general, and I will address more specifically how the self as a dynamic construction in the body and brain is impacted by visual perception in the theatre.

The point of this chapter is to examine the bodily continuity that exists between corporeal experience and meaning-making: between the way we move and what we experience with our senses on one hand, and our abstract thoughts, conceptualizations and opinions on the other. For the theatre this continuity means that there is a direct connection between the corporeal experience of seeing a performance, and the 'meaning' it generates or the persuasive power it executes.

The first part of this chapter concerns embodied simulation, and will present a view on the self as a highly dynamic, unstable and expansive construction that takes place inside and among our brains, bodies and environments. I will explain how embodied simulation works, I will discuss neuroscientist Vittorio Gallese's concept of 'liberated embodied simulation' as a description of the way embodied simulation occurs in the specific circumstances of looking at art, and I will consider the consequences of embodied simulation for theatre spectatorship.

The second part of this chapter revolves mostly around conceptual metaphor theory. I will discuss how concepts are embodied in the brain, firstly by discussing the concept of 'neural exploitation' as it is theorized by Vittorio Gallese and George Lakoff, and secondly by discussing conceptual metaphor theory in more detail. This part builds on part 2.1, as it explains how the sensorimotor system is exploited for abstract reasoning, thus describing the relationship between the mechanism of embodied simulation and conceptual metaphor theory. The concept of neural exploitation may seem too specifically neuroscientific to be relevant within theatre studies at first sight, but I hope that you will bear with me. Neural exploitation is crucial to my argument, as it has far-reaching consequences for my understanding of what a concept is and

how it behaves in the body, and as it is the key to understanding how deeply intimate the relation between sensing, moving and thinking is.

2.1 embodied simulation

“(T)he fact that the brain exploits sensory-motor neurons to understand abstract concepts or poetic language suggests that language makes us feel, not by communicating a final feeling-state, but by activating our own experience of that state (...) suggests that language is less a system of *communicating* experience than actually *being* experience; we do not translate words into perceptions, we perceive in order to understand” (Cook 2007, p. 589).

Research on embodied simulation, mirror neurons and phantom limbs have led to the conclusion that the self is not a stable inner core of some sort that is separate from the world. Instead it is an ongoing negotiation in our brains and bodies of the borders that separate our bodies from the outer world and our thought processes from those of other humans - borders that second-generation cognitive science describes as being porous and dynamic. These findings have been used by various theatre and performance scholars to argue that the ongoing negotiations of the borders between ‘self’ and ‘other’ are especially strongly impacted by live performance: somehow in the way our brain understands moving bodies in the theatre our individuality seems to be on the line.

the mirror neuron system

In 1996 neuroscientists Vittorio Gallese and Giacomo Rizzolatti and their team in Parma discovered a class of motor neurons²¹ that did not seem to distinguish between the self and the other. A group of neurons in the macaque monkey brain fired when the monkey performed a goal-related hand movement, but discharged equally when it saw another monkey perform the same movement. The neurons concerned have become famous under the name mirror neurons. The mirror neuron system (MNS) helps us understand various types of perceived movement by performing a simulation of that movement in the sensorimotor system (the part of the brain that is concerned with processing perception and executing movement). They inspired a wave of research into the nature of perception and of social cognition, and have lovingly been nicknamed ‘monkey-see-monkey-do-neurons’, ‘empathy-neurons’ and ‘Dalai-Lama-neurons’²².

In his article *Mirror Neurons and Art: Art and the Senses* Vittorio Gallese explains that the MNS is not only involved in understanding visually presented action but also acoustically or visually presented action-related linguistic expression (Gallese 2010). A particular class of ‘audiovisual mirror neurons

21 A neuron is a cell that processes information by giving off electrical or chemical signals: by ‘firing’. Neurons that relate to each other to perform certain tasks form ‘neural networks’. There are diverse types of neurons, such as sensory neurons and motor neurons. Motor neurons are neurons concerned with movement.

22 Gallese himself warns us that scientists are worried that the implications of the MNS has filtered down to popular knowledge in inaccurate ways, and the nicknames ‘Dalai-Lama-Neurons’ are probably a good example of an incorrect interpretation that has inspired many popular publications (Gallese 2010).

' reacts to sound, and "(t)he multimodally driven simulation of action goals instantiated by 'audiovisual mirror neurons' situated in the ventral premotor cortex of the monkey, instantiates properties that are strikingly similar to the symbolic properties so characteristic of human thought" (Gallese 2010, p. 443). In plain English: mirror neurons are probably not only involved in the perception of bodily movement but also in the perception of auditive input, abstract art²³, and even language, from which follows that the MNS connects our perception and our neuromuscular activity to social interactions and even to language and culture.

embodied simulation

The discovery of mirror neurons called for a new view on the nature of the difference between ourselves and others, and between experience and imagination. The separation between moving and perceiving and between me and you that may have seemed self-evident before was suddenly destabilized, as the MNS suggests that the distinction between self and other is blurred at the level of neural mechanisms. Vittorio Gallese argues that the MNS provides a shared neural state realized in two different bodies: a 'we-centric space' that is prior to cognition and prior to our experience of a separation between self and world (Blair 2007, and Gallese 2010). According to Gallese this shared space gives us a seemingly effortless capacity to conceive of the acting bodies inhabiting our social world as 'goal oriented selves' like us: "By means of a shared functional state realized in two different bodies that nevertheless obey to the same functional rules, the 'objectual other' becomes 'another self'" (Gallese 2010). Perception and action seem to happen not only in the 'stuff' of our brains, but also among our brains collectively. This allows us to understand the minds of others without conceptual reasoning.²⁴

As the neuroscientific evidence supporting Gallese's theory of a neurally substantiated we-centric space has accumulated over the last decade, Gallese introduces his model of 'embodied simulation' in his article *Embodied Simulation and its role in Intersubjectivity* (2010). Gallese's model of embodied simulation is based on the idea that intercorporeity is the main source of knowledge we gather about others, and challenges the more traditional view that interpersonal understanding is a matter of attributing propositional attitudes to others that are mapped as symbolic representations. Gallese argues that

23 A striking fact relevant to the perception of art, is that in order for mirror neurons to fire it seems to matter more that the action is goal oriented than whether it is performed by a human or even by a biological actor. Gallese refers to research that describes how the MNS can be activated by looking at robotic hand actions to argue that the MNS could contribute to the understanding of a wider range of actions than was previously assumed. The MNS can, for example, also be activated by abstract art: "Several studies show that motor simulation can be induced in the observer's brain also when what is observed is not someone else's action, but the static graphic artifact produced by the action, such as a letter or a graphic stroke" (Gallese 2010, p. 446). This shows that our brain is able to reconstruct actions after the fact: we are able to use the embodied simulation mechanism to perform a reconstruction during the observation of the result of a goal-oriented action, such as an abstract painting.

24 Amy Cook points out that an important nuance must be made when it comes to the way the MNS connects our minds to those of others: Mirror neurons do not map the entire other to the entire self. The perceived other does not become the self, but rather maps part of the other onto part of the self. Mirror neurons therefore depict us as a system of parts (Cook 2010, p. 136): "Cells firing in me if I do something or you do something suggest that the difference between us is in parts, not wholes" (Cook 2010, p.153). Vittorio Gallese makes a similar point when he states that the shared we-centric space "(...) provides the self with the capacity to simultaneously entertain self-other identification and difference" (Gallese 2010, p. 88).

embodied simulation accounts for action as well as intention understanding abilities in both human and nonhuman primates: embodied simulation is one of the core mechanisms we deploy to make sense of the world.

liberated embodied simulation

Several theatre and performance scholars have argued that embodied simulation is likely to be activated especially strongly in the perception of live performance.²⁵ Vittorio Gallese confirms this suggestion in his article *Seeing art....beyond vision: Liberated embodied simulation in aesthetic experience* (2011).²⁶ He describes that in his previous research on the embodiment of the experience of looking at art, he has found that the empathic responses to works of art consist of the activation of embodied mechanisms that have a precise and definable basis in the brain/body system. He explains that aesthetic embodied experience entails the simulation of actions, emotions and corporeal sensation just as human interaction in everyday life does, which is possible because embodied simulation is not only triggered by perception:

“Indeed, embodied simulation can also occur when we imagine doing or perceiving something. The border between real and fictional worlds is more blurred than we would expect. (...) Typically human activities such as visual and motor mental imagery, far from being exclusively symbolic and propositional, rely on and depend upon the activation of sensory-motor brain regions. (...) Thus, motor and visual imagery do qualify as further forms of embodied simulation, since they imply re-using our motor or visual neural apparatus to imagine things and situations we are not actually doing or perceiving” (Gallese 2011).

Gallese then goes a step further and argues that because we are temporarily not burdened with the task to act in the world during aesthetic experience, our attention is fully focused on the artwork, and we are more free to fully deploy our simulative resources. Gallese therefore proposes to consider aesthetic experience as a form of 'liberated embodied simulation', in which our ability to embody what we perceive is free to be fully activated - more fully than in real-life situations.

mirror neurons and theatre: writing and re-writing the map of the body

One of the consequences of the MNS for theatre spectatorship is that we understand a live moving actor not

25 Bruce McConachie, for example, refers to social psychologist Paula Niedenthal, whose research has shown that in situations in which empathy is encouraged, the imitation and embodiment of other people's (emotional) behavior is heightened. McConachie argues that Niedenthal's research suggests that the resulting attunement of our bodies to the bodily states and emotions of other people would be activated even more strongly in the theatre than in everyday life.

26 I will provide a more detailed explanation of the multimodality hypothesis in part 2.2.

through conscious thought but through unconscious and highly automatic processes of embodied simulation that are prior to cognition. As Amy Cook explains it: "When we witness an actor picking up a telephone and moving it upward, it is the MNS that tells us whether she/he does so in order to answer the phone or swing it" (Cook 2007, p. 588). Cook argues that the MNS forces us to rethink the notion of mimesis, because "(s)ince watching is - at least for some mirror neurons - the same as doing, drama *inspires* the imitation of an action rather than *being* an imitation of an action" (Cook p. 591, italics in the original). In other words: we do not look at actors imitating behavior, but we look at real actors performing real actions, and we understand these actions by imitating them ourselves.

In her article *Interplay: the Method and Potential of a Cognitive Scientific Approach to Theatre*, Amy Cook combines Gallese's work on the MNS with research by neuroscientist Vilayanur Ramachandran on phantom limbs in order to consider the implications of their research for our understanding of how our theatre acts upon the brain's perception of bodily boundaries, and on the sense of self of actors as well as of spectators (Cook 2007). Vilayanur Ramachandran's research on patients with phantom limbs suggests that the brain constantly writes and rewrites its conception of the body, negotiating and altering our idea of where our bodies stop and start. As Cook puts it: "The brain relies on stories to organize information (...) and these stories can be retold" (Cook 2007, p. 593). Following Ramachandran we construct our bodily sense of self at the intersection of visual and tactile stimuli and genetic body maps. When, for example, visual and tactile stimuli do not match, the brain looks for a solution and changes its perception of its bodily boundaries.²⁷ The brain is able to rewrite its sense of self, and with some manipulation our sense of having an integrated body can easily fall apart. Similarly, Amy Cook argues, spectators in the theatre are affected by the bodies of actors.²⁸ Our brains rely on stories to organize information, such as the cause-and-effect story that connects what we see with our eyes to what we feel on our skin. These stories can be retold: "The sense of self can rebuild itself because it was a projection all along" (Cook 2007, p. 594).

27 This mechanism has for example been proven to be able to trick test subjects into believing a rubber hand is theirs, and make them effectively start to have feelings in that hand (Cook 2007).

28 Cook extends Ramachandran's findings to the way actors relate to props and costumes. An actress who rehearsed with a fatsuit for several weeks for example reported that after a few weeks she began to feel sensations in her large padded breasts. Amy Cook suggests that in the same way that experience of bodily boundaries of actors change through rehearsal, the experience of seeing a performance may act upon the way audience perceive their own bodies, effecting their conception of their bodily boundaries too (Cook 2007, p. 594).

2.2 conceptual metaphors

"Sometimes our meanings are conceptually and propositionally coded, but that is merely the more conscious, selective dimension of a vast, continuous process of immanent meanings that involve structures, patterns, qualities, feelings and emotions. (...) Meanings emerge 'from the bottom up' through increasingly complex levels of organic activity" (Johnson 2007, p. 10).

Understanding what we perceive of the world involves automatic and unconscious processes of embodied simulation. Embodied simulation in turn is one of the mechanisms in the sensorimotor system of the brain that give form and structure to our abstract thoughts at the conscious level. In this section I will explain how abstract concepts are embodied, relying mostly on conceptual metaphor theory. I will describe how concepts emerge out of and are characterized by our bodies' contact with the world, I will elaborate how they are structured in neural maps and schemas in the sensorimotor system of the brain, and I will argue that abstract concepts are embodied as metaphoric structures inside the brain.

As philosopher Marc Johnson observes, 'meaning' is "(a) big, messy, multidimensional concept" (Johnson 2007, p. ix). Concepts are the basic units with which we construct meaning. In his book *The Meaning of the Body: Aesthetics of human understanding* (2007) Johnson provides a detailed account of how meaning emerges from the encounter of the body with the world, and explores the bodily origins of meaning and of abstract thought. Johnson argues that meaning is not representational but relational: it emerges as a result of our corporeal interactions with the world, as structures of organism-environment couplings. The propositions and concepts we express in language form the conscious level of meaning, but this does not mean that at the level below concepts do not exist. In the words of Vittorio Gallese and George Lakoff: "Concepts are the elementary units of reason and linguistic meaning. They are conventional and relatively stable. As such, they must somehow be the result of neural activity in the brain. The questions are: Where? and How?" (Gallese and Lakoff 2005, p. 1). In an embodied view on cognition we still think with concepts, we just need to rethink what a concepts is made of and how it behaves.

conceptual metaphor theory

While conceptual metaphor theory was developed in the field of cognitive linguistics, it does not exclusively concern linguistic expression, and it does not pertain to metaphors in the more common literary sense. Instead this theory, developed by George Lakoff and Marc Johnson jointly, holds that all of our thought processes are characterized by our bodies' interactions with the world and uses the term 'metaphor' to describe the way that abstract concepts are embodied.

CMT is based on the assumption that our abstract concepts are defined by multiple, often inconsistent 'conceptual metaphors'. A conceptual metaphor consists of a systematic mapping in our neurological structures of entities and relations from a sensorimotor source domain to an abstract target domain (Johnson 2007, p. 165 and Cook 2010, p. 9). Their metaphorical character entails that concepts map the knowledge we have of an embodied experience onto an abstract domain, which means that we understand every single abstract concept we think with in terms of a specific experience of moving our body or sensing with it. So we think with concepts, and abstract concepts arise in the brain in neurological structures that CMT characterizes as metaphorical. Following CMT all thinking relies on metaphor as conceptual metaphors provide content as well as form to human thinking (McConachie 2001, p. 577).

Conceptual metaphors arise in our brains from infancy onwards, and through repetitive experiences of a correlation between a corporeal experience (such as 'grasping') and an abstract domain (such as 'understanding'), they become relatively stable neurological structures. Our experience of our bodies in childhood imprints basic image schemas in our brains. Those develop into basic (or 'primary') metaphors (such as *grasping is understanding*) that in turn can develop into complex metaphors (such as 'I get what you mean', or 'It slipped from my mind'). Metaphors evolve in reaction to bodily experience *and* exist in our embodied brains, which has consequences for a spectator of the theatre as we can argue that these already twice-embodied metaphors are re-embodied in the materiality of theatrical performances, creating complex feedbackloops between the bodily experience of seeing a performance and the embodied concepts that we process the experience with.²⁹ Before I explain in more detail how conceptual metaphors work on a linguistics level, I first will discuss how they are structured in our brains to begin with.

neural maps and image schemas

We begin life by moving, and based on what we encounter through movement we build the *neural maps* in our brains that allow us to survive and flourish with our specific bodies in our specific environments.³⁰ We build sets of visual, auditory, and somatosensory maps, and Johnson explains that while the more obvious neural maps map perceptual space in direct analogs-preserving topologies of pitch, color, the parts of the body and so on, subsequent maps preserve more abstract topological structures such as object shape, edges, and direction of motion.

Marc Johnson argues that the discovery of neural maps in the 1980s is one of the most profound findings in neuroscience, because from it follows that concepts and representations are not quasi-entities in our minds, and that thinking is not, as classic cognitivism would have it, a matter of manipulating

29 In his article Performance Strategies, image schemas, and communication frameworks, Tobin Nellhaus even argues that the embodied experience of seeing a theatre performance not only interacts with the image schemas in the brains of spectators, but that they may also influence the neurological structures and image schemas that we have already formed, acting upon us as a cultural/environmental imprint on the brain (Nellhaus 2006).

30 Neural maps are topological and topographic organizations in the brain in which adjacent neural cells fire sequentially when a stimulus moves across adjacent positions within a sensory field (Johnson 2007, p. 127). Marc Johnson provides a detailed explanation of the way neural maps function in humans and in other animals (Johnson 2007, p. 126 – 134).

those entities. Instead concepts are stable patterns of neuronal activation: "To say that we have concepts is to say (...) that within the continuous flow of our perceptual experience, we can attend to aspects of the flow for purposes of understanding our situation, planning what to do, and then acting" (Johnson 2007, p. 132).

Another important basic type of structure that forms our non-representational coupling with the world is the *image schema*. Image schemas are recurrent patterns of sensorimotor experience that are realized as activation patterns in topological neural maps (Johnson 2007, p. 145).³¹ They are important because they are the basic structures that link sensorimotor experiences to conceptualization and language, forming what Johnson calls the 'bottom-up' character of meaning. They operate below the level of conscious awareness, constituting the preverbal structures of meaning that Johnson and Lakoff call *the cognitive unconscious*.³² The internal structures of image schemas constrain the inferences they can be involved in. This matters because it basically means that we can only think what our schemas allow us to think. We have maps and schemas that have emerged out of the interactions with our specific bodies and our specific environments, and those structures of experience form the emergent level of meaning that inform our conscious reasoning.³³

To understand how neural maps and schemas give rise to concepts, I will discuss the work of Vittorio Gallese and George Lakoff, who joined their forces to create a hypothesis regarding the embodiment of abstract concepts that specifies how exactly the mechanisms used for abstract conceptualization work. What is interesting about their work for this thesis is that it joins the theory of embodied simulation and conceptual metaphor theory in a unified framework.

the embodiment of concepts

In their article *The Brain's Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge* (2005), Vittorio Gallese and George Lakoff propose a testable hypothesis regarding the embodiment of abstract concepts. Their goal is to provide an embodied theory of concepts that reconciles both concrete and abstract

31 Image schemas are 'image-like' in that they "(...) preserve the topological structure of the perceptual whole" (Johnson 2007, p. 144). Johnson specifies to what extent we can consider these correspondences representational, and warns us that "(h)owever, we must always be clear that an organism never actually experiences its neural maps as internal mental structures. We do not experience the maps, but rather through them we experience a structured world full of patterns and qualities" (Johnson 2007, p. 132). The term 'representation' is used by neuroscientists in reference to neural maps and schemas, but its important not to confuse this use of the term with its meaning in classic cognitivism. Neural maps are representations only insofar as "(...) a specific neural map is loosely isomorphic with some structure of an organisms environment-as-experienced" (Johnson 2007, p. 131).

32 In their book *Philosophy in the Flesh* (1999) Marc Johnson and George Lakoff introduce the term 'cognitive unconscious'. They use it to articulate the idea that meaning at the conscious level emerges out of the unconscious and pre-verbal ground of structures and patterns of engagement with our bodies and the world: "Conscious thought is the tip of an enormous iceberg. It is the rule of thumb among cognitive scientists that unconscious though is 95 percent of all thought - and that may be a serious underestimate. Moreover, the 95 percent below the surface of conscious awareness shapes and structures all conscious thought. (...) Our conscious conceptual system functions like a 'hidden hand' that shapes how we conceptualize all aspects of our experience. (...) It constitutes our unreflective common sense" (Lakoff and Johnson 1999, p. 13). Johnson and Lakoff claim that the fact that thought is mostly unconscious is now relatively stable knowledge within cognitive science.

33 Hart and McConachie arrive at the same conclusion when they discuss the 'qualified realism' of neuroscientists Gerald Edelman and Guilio Tononi, who claim that concepts precede language, and argue that humans can only know what their embodied concepts allow them to know. Their qualified realism is rooted in the same assumptions as Lakoff and Johnson's embodied realism (Hart and McConachie 2006).

concepts within a unified framework. From their hypothesis follows that abstract reasoning is a skill we perform in the sensorimotor system in the brain, using the same structures that are built to carry our perception and movement.³⁴ Opposing the view of first-generation cognitive science, which followed the analytic tradition of the philosophy of language in believing that concepts are arbitrary and amodal symbols, Gallese and Lakoff argue that conceptual knowledge is mapped within our sensorimotor system.

The theory that they propose entails that the same circuitry that moves the body and structures perceptions also structures abstract thought. Gallese and Lakoff argue that concepts of a wide variety make direct use of the sensorimotor circuitry of the brain. They use a concrete action concept (*to grasp*) to explain how it is grounded in the sensorimotor system, and they then extend the same argument to the embodiment of object concepts, and even to abstract concepts with conceptual content that is structured metaphorically.³⁵

At the neural level, the information structure needed to characterize the concept *to grasp* is available in the sensorimotor system. The action of *grasping* has multiple modalities, such as a perceptual and a motor component. Mirror neurons and other classes of premotor neurons are inherently 'multimodal': the firing of a single neuron may correlate with both seeing and performing grasping.³⁶ When Gallese and Lakoff state that *grasping* is multimodal, they mean that it is neurally enacted using neural substrates used for both action and perception. Sensory modalities like vision, touch and hearing are integrated with motor control and planning, and contrary to the logic of classic cognitivism there are no 'pure association areas' whose only task is to link separate sensory modalities together. Multimodality is realized in the brain within 'functional clusters': cortical networks that function as a unit with respect to relevant neural computations. The three functional clusters in the sensorimotor system this hypothesis revolves around are the parallel parietal-premotor cortical networks F4-VIP, F5c-PF and F5ab-AIP.

Cluster F4-VIP functions to transform the spatial position of objects in peri-personal space (the space directly around one's body) into motor programs for interacting with these objects physically. Research has shown that the 'action-location neurons' in this cluster are activated when subjects hear or see stimuli being moved in their peri-personal space. The perception of these stimuli activates a pre-motor area

34 They support their argument with research in the field of cognitive linguistics and of computational connectionist models. They are clear about the fact that if and to what extent their hypothesis holds still is to be researched in the future, but they do show that there is a growing body of evidence supporting their hypothesis.

35 Their central claim in embodied concepts is that "*The job done by what have been called 'concepts' can be accomplished by schemas characterized by parameters and their values*" (Gallese and Lakoff 2005, p. 12). Gallese and Lakoff propose to think of concepts as schemas. While traditionally concepts have been thought of as being direct reflections or representations of external reality, as "a set of necessary and sufficient conditions operating in a system of logic (...)" (Gallese and Lakoff 2005, p. 13), schemas however are completely different, and fit into a relational rather than representational view on meaning. They are constituted by networks of functional clusters, they are interactional, and they arise from the nature of our bodies and brains and from the nature of our physical and social interactions in the world. Schemas are therefore not purely internal, nor are they purely representations of external reality: "(...) schemas are not like logical conditions. They run bodies – as well as they can." (Gallese and Lakoff 2005, p. 13).

36 Multimodality is different from supramodality in that it entails that there are no separate modules for perception and action: they are integrated with each other *and* with motor control and planning. The multimodality hypothesis is an important theory underlying their hypothesis. If the sensorimotor system is multimodal rather than modular then it follows that language is also multimodal (it uses many modalities linked together such as sight, smell, hearing, touch and motor actions) and that it exploits the pre-existing multimodal character of the sensorimotor system. From the multimodality of the sensorimotor system and of language follows, that instead of using one single 'module' for language, we use mechanisms for language that are also present in nonhuman primates (Gallese and Lakoff 2005, p. 2).

that controls movements aimed at objects in peri-personal space. This implies that we understand the location of auditory and visual stimuli by performing an embodied simulation of acting on them in the space around our bodies. Premotor cluster F5c-PF is the location of the famous mirror neurons that discharge both when a subject performs goal-oriented hand actions or observes another subject perform them. Gallese and Lakoff argue that from the simulation of perceived action in cluster F5c-PF follows that imagination is mental simulation performed by the same functional clusters used in acting and perceiving.³⁷ Cluster F5ab-AIP contains canonical neurons: neurons that translate the intrinsic physical features of objects into the hand motor programs most suitable to act on them. The canonical neurons in pre-motor area F5 contain grasping-related neurons that fire not only when a grasping action is performed but also when we see an object that we could grasp, but don't. This means that when we look at a cup, we know how to grasp or throw it because we are already simulating performing those movements.

What follows from the processes of simulation in these clusters, is that for organisms like us objects are not just visual, tactile or auditory shapes, nor are they merely things that require various motor programs for interacting with them. They are instead all of these dimensions together: "Perception at this level is multimodal" (Johnson 2007, p. 161).³⁸ Another important fact is that cluster F5ab-AIP has a number of subclusters for any type of purposeful action. There is a subcluster to indicate the general goal of an action, a separate subcluster to register the various manners in which an action can be executed, and a subcluster concerned with the phases segmenting the action. Because it is possible for the general purpose cluster for grasping to fire during the mental simulation of an action while the subcluster specifying a manner does not, we can conceptualize a general *grasping*.

neural exploitation

So far Gallese and Lakoff establish that understanding requires simulation, from which follows that we understand concrete action concepts by means of exploiting the sensorimotor system. What is crucial to my argument is that they take a step further and argue that the sensorimotor system is also central to the understanding of *abstract concepts*. The key aspect that makes the abstract capacities of human cognition possible, they explain, is 'neural exploitation'. Mechanisms of the sensorimotor parts of the brain (the parts concerned with perceiving and moving) have adapted in human bodies to perform new tasks. Neural

37 An important finding in neuroscientific research underlying this theory is that imagining and doing use a shared neural substrate. We already know from the MNS that perceiving and acting are partially performed using the same part of the brain. Something similar happens in imagining action. When we imagine perceiving or doing something, the same part of the brain is activated as when we actually perceive or do these things. Gallese and Lakoff extend this fact to argue that "[t]he same neural substrate used in imagining is used in understanding" (Gallese and Lakoff 2005, p. 2, italics in the original). Imagination, like perceiving and doing, is embodied.

38 Also important in understanding how deeply action concepts are embedded in the sensorimotor system is the fact that all actions, perceptions, and simulations make use of neural parameters and their values. For example, the action of *reaching* for an object makes use of the neural parameter of *direction*; and the action of *grasping* an object makes use of the neural parameter of *force*. The importance of these parameters for an embodied theory of concepts is that the parameter values that characterize the structure of actions and simulations also characterize the structure of action concepts. While lower-level neural structures are not accessible to consciousness, parameters and the kind of values these have can be brought to consciousness and are expressed in language.

exploitation is the process whereby those parts of the brain that are still being used for perceiving and moving (namely the sensorimotor system) are being 'borrowed' for abstract reasoning and logic. It is important that these parts simultaneously retain their original functions, as this means that abstract thought and sensorimotor experience continuously impact one another in real time. Gallese and Lakoff argue that neural exploitation is the mechanism through which not only motor concepts are embodied in our brains, but also concepts in the more traditional philosophical understanding.³⁹

At this point in their argument, Gallese and Lakoff move from evidence in the field of neuroscience to research in the field of artificial neural modeling that has connected mirror neurons, canonical neurons and action-location neurons with CMT. Computer scientist Srinivas Narayan has built connectionist computational neural models of metaphorical mappings in the sensorimotor system. These modeled the structures of mirror neurons, canonical neurons and action-location neurons in 'executing schemas' or 'X-schemas'. His models show that these schemas are capable of carrying out the inferences needed to understand complex metaphors such as 'the economy is in a free fall', and get all the inferences right. This suggests that our abstract metaphorical reasoning arises out of and is processed within our bodies' mechanism for moving and sensing, and supports the hypothesis of neural exploitation. From neural exploitation follows that the maps, schemas, object concepts, abstract concepts and metaphors that structure our thought processes have been shaped by our bodily experiences, and are being processed through structures that are constantly impacted by the rest of our bodies and by our bodies' experience of the world.

So, we can say that abstract concepts are characterized by our bodily experiences of moving and perceiving. They arise from our bodies' experience of our environments, from which follows that meaning is not representational but relational. They are metaphorical in the sense that they rely on the neural exploitation of sensorimotor structures in the brain for abstract reasoning. Before we can use this knowledge in chapter four to analyze the relation between corporeal experience and meaning-making in the embodied act of looking at *NATURE* or *NURTURE*, I need to discuss how conceptual metaphors work in the more conscious level of cognition that can be expressed in language.

image schemas – primary metaphors – complex metaphors

As discussed before, *image schemas* are abstractions of embodied experience that we develop in infancy, and that later become neurologically stable constructions in the brain. Image schemas are the basic

39 While sensing and moving may indeed come 'first' while abstract reasoning comes 'second' from an evolutionary point of view, I have found no reason to assume that they also come first in the brains of human beings. I want to emphasize this because the choice of terms of among other Gallese, Lakoff and Johnson - the *preverbal* level of meaning, neural *exploitation*, the *borrowing* of structures for abstract thought - suggests that sensing and moving come 'before' thinking. Especially the term 'neural exploitation' seems to suggest that sensing and moving is in the nature of our brains, and that abstract thought is a kind of human intervention upon this nature. It therewith seems to echo a more traditional view on nature and culture as separate things, and on nature as the passive background upon which humans actively create culture and technology. In this light I want to point out that in the descriptions of neural exploitation, I have found no reason to assume that there is a hierarchical order between the different tasks that our sensorimotor system performs, nor that we learn one of them first and the other second.

structures of sensorimotor experience by which we encounter a world that we can understand and act within, and that are at the same time used for abstract conceptualization and reasoning. Stable image schemas are used to structure higher levels of cognition: via a process of metaphorical projection they form *primary metaphors* that can develop into *complex metaphors*. Image schemas are mostly spacial in content, and Lakoff and Johnson refer to those as *spatial relations concepts*. For example: the image schema SOURCE-PATH-GOAL is developed first from the experience of crawling towards something. This image schema can lead to primary metaphors like *states are locations* or *purposes are destinations*, and to complex metaphors such as 'A purposeful life is a journey'. We have spatial relation schemas such as the CONTAINER schema developed from the physical experience of having an exterior and an interior to our bodies, but also bodily action schemas such as BALANCE (Hart 2008, Johnson and Lakoff 1999, and Johnson 2007).

An example of how image schemas turn into complex metaphors is how the repeated experience of emotional intimacy being correlated with being physically close to someone can establish cross-domain neural connections that define the primary metaphor *psychological intimacy is physical closeness*. This neural co-activation thus maps the characteristics from the the sensorimotor domain of physical closeness onto the abstract domain of intimacy (Johnson 2007, p. 178). Primary metaphors arise organically from our bodily perceptions and actions, and they are most of the time "(...) activated automatically and unconsciously to structure our understanding of situations and events" (Johnson 2007, p. 178). Primary metaphors can lead us to unconsciously interpret what we experience on the basis of assumptions such as affection is warmth, important is big, happy is up, causes are forces, purposes are destinations, knowing is seeing, knowing is grasping, control is up and many many more. While the number of foundational schemas is limited, there are infinite primary and complex metaphors.⁴⁰

conceptual metaphor theory and culture

Hart and McConachie explain that within embodied realism, cultural relativity and the historicity of experience occur in two ways: certain basic schemas and metaphors may organize multiple cultural domains, and new complex metaphors and other conceptual blends can arise that facilitate shifts in thinking and historical change (Hart and McConachie 2006). According to Lakoff, Johnson and many others, schemas and their metaphorical extensions are nearly universal to human experience, but in different cultures some schemas may be dominant over others.⁴¹

40 Gallese and Lakoff explain that you can call the pre-motor cortex a secondary area: "an area not directly connected to sensors or effectors, but which provides structure to information going to effectors or coming from sensors" (Gallese and Lakoff 2005, p. 16). Abstract aspectual concepts are neurally simulated in a secondary area with no active connection to a primary area, and their inferences are processed via that simulation. If image schemas, such as SOURCE-PATH-GOAL, FORCE DYNAMICS, and CONTAINMENT, are indeed computed in secondary area's, then "(...) that would explain why there is a limited range of them (there is a relatively small number of such regions), why they are universal (we all have the same basic brain structure), and why they are general (they provide structure to primary regions with specific information)" (Gallese and Lakoff 2005, p. 17).

41 Bruce McConachie explains that social stereotypes, prototypical examples, and other modes of categorizing are based on basic-level concepts: "Regarding spatial-relations concepts, the SOURCE-PATH-GOAL schema (...) undergrids numerous metaphors that organize certain events in our lives as narratives with a beginning, a middle, and an end. BALANCE, a bodily action schema, provides many metaphors for mental health, ethical behavior, and social justice" (McConachie 2001, p. 578). He also argues that the complex

Complex metaphors ground the assumptions that we unconsciously think and perceive with, and that can appear as natural reflections of how things objectively are. They can be integrated into whole systems of cultural practice. As Amy Cook explains it, metaphors define what can be viewed as truth (Amy Cook 2010, p. 5). McConachie explains that following embodied realism the hegemony of a dominant culture is based upon "(...) mutually supportive 'constellations' of concepts and metaphors legitimating the power of certain social groups and classes" (McConachie 2001, p. 584), but he also states that this hegemonic containment is always structurally unstable given the biological reservoir of cognitive possibilities in the brain.

rethinking aesthetics and meaning

At the level of the cognitive unconscious, our abstract concepts are structured by our bodily experiences of shape, volume, weight, force, location, density, speed, sound, spacial relations, color, temperature and many more. When I say that the child performers in *NATURE or NURTURE* looked at me with piercing eyes, or that their performance was a bit cold and distant because they didn't really let us in, than understanding these remarks (or making them) involves our neuromuscular understanding of parameters such as hot-cold, near-far, and of boundaries between inside and outside that can be pierced or fenced-off. We don't understand them as representations outside our bodies that we think about, but inside our own own specific bodies. Abstract thoughts have 'meaning' for us because they involve qualities such as positions in peri-personal space, force dynamics, goal-oriented movements and many more. From the processes of neural exploitation follows that there is a continuity between abstract concepts expressed in language onstage and the movement, rhythm, shape and volume of a performance.

I argue that a consequence of this continuity is that we should understand the aesthetic dimension of theatre performances and the 'meaning' they produce as a unity as well: as different levels or aspects of the same process. In doing so I follow both Marc Johnson and Bruce McConachie, who argue that embodied cognition calls for an alternative to the conventional split between (as McConachie formulates it in McConachie 2001) 'aesthetics and rhetoric', or (as Johnson puts it in Johnson 2007) 'aesthetics and meaning'.⁴² Even if what we perceive of an artwork with our senses remains in a pre-verbal unconscious level,

metaphor time is money "(h)elped to structure the rise of capitalism in the West - a metaphor that is largely absent from cultures with less quantifiable conceptions of time" (McConachie 2001, p. 578).

42 According to Johnson the traditional view of meaning as conceptual and propositional in character leads philosophers to marginalize notions like quality, emotion, and feeling as merely aesthetic, subjective mental states: as mere matters of 'taste'. He argues that contemporary Anglo-American Philosophers rarely recognize the relevance of art and aesthetics to the subject of the nature of meaning (Johnson 2007, p. 207). Johnson argues that as the arts use the same structures in the sensorimotor system that operate in everyday meaning-making, the impressions on the brain of aesthetics such as visual images, patterns, qualities, rhythms and colors are the principle bearers of meaning; meaning that moves beneath concepts and propositions (Johnson 2007, p. 234). Aesthetic experience is in fact a grounding component of higher-level abstract cognition, and Johnson proposes to regard aesthetics as the center of human meaning making: "Via the aesthetics of our bodily senses, the environment enters into the very shape of our thoughts, sculpting our most abstract reasoning out of our embodied interactions with the world" (Johnson 2007, p. 154).

Long before Johnson's book on the aesthetics of human understanding, Bruce McConachie already points out that the theory of embodied realism challenges theatre studies to rethink the conventional split between aesthetics and rhetoric: "To

it still significantly structures what thoughts we are and are not capable of on a conscious level. From an embodied view on the mind follows that instead of regarding aesthetics as separate from meaning or rhetoric, we should see 'meaning' as something that has a dimension that is physical, sensual and aesthetic and that takes place in the cognitive unconscious, as well as a dimension that is conscious, expressed in language, propositional, and abstract.⁴³ Both depend upon the other, and both are embodied.

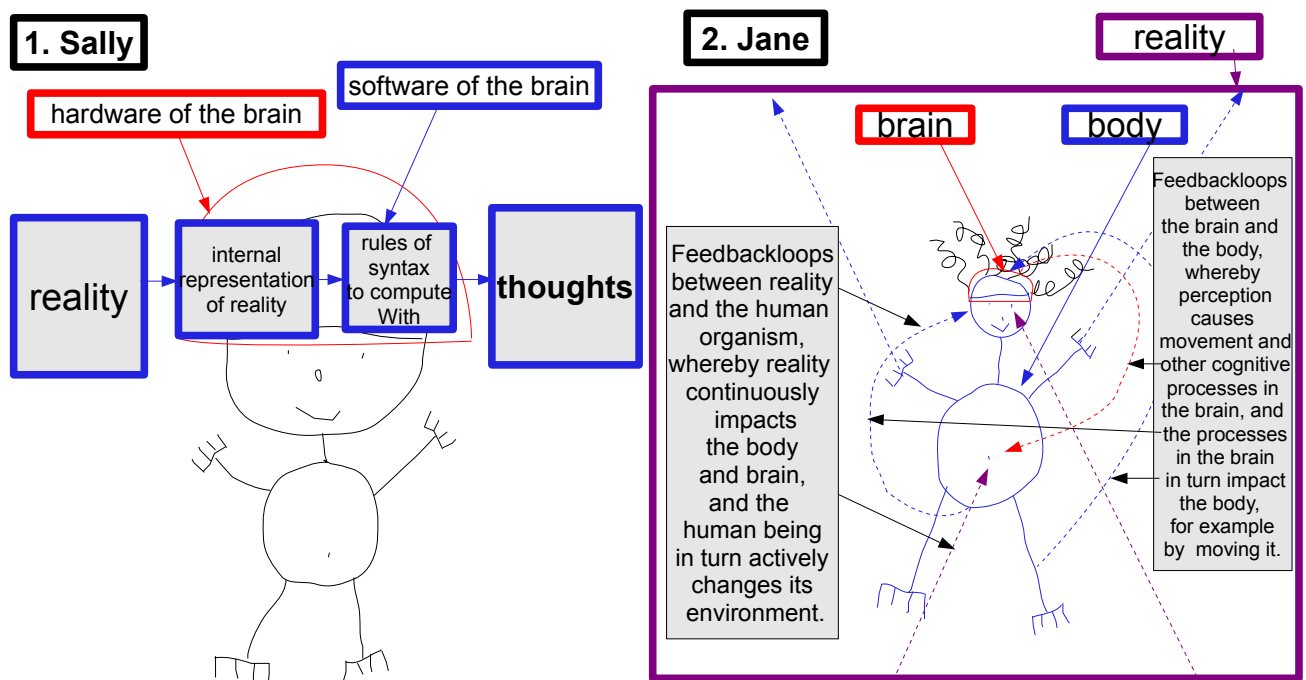
Art creates a specific kind of bodily encounter with reality. Johnson's proposition that we should to view the arts as being positioned at the very core of meaning-making rests on the same logic as Bleeker's assertion that the theatrical apparatus provides a kind of experimental set-up that can reveal how perception works (Bleeker 2005 and Johnson 2010). *NATURE or NURTURE*, as my case study, will work as such an experimental set-up and help me analyze how inside the perceiving body of the spectator, corporeal experience is related to abstract thought, and how in that body the dynamic process of negotiating the borders that separate the self from the world is impacted by seeing and being seen. But before we move to the actual performance at hand in chapter four, one other issue must be addressed.

understand how the cognitive level has constrained the historical experience of theatregoing, embodied realism requires that the performance historian rejoin theatrical rhetoric and aesthetic style" (McConachie 2001, p. 580).

43 Rejoining the experiential dimension of theatre with the verbal dimension in this case does not involve reducing all perceptual dimensions involved in the experience of seeing a theatre performance to language. To the contrary, the continuity between text, vision, sounds, tactile stimuli etc. lies in the fact that processing language is a skill that is grounded in the structures and patterns of all the other bodily experiences.

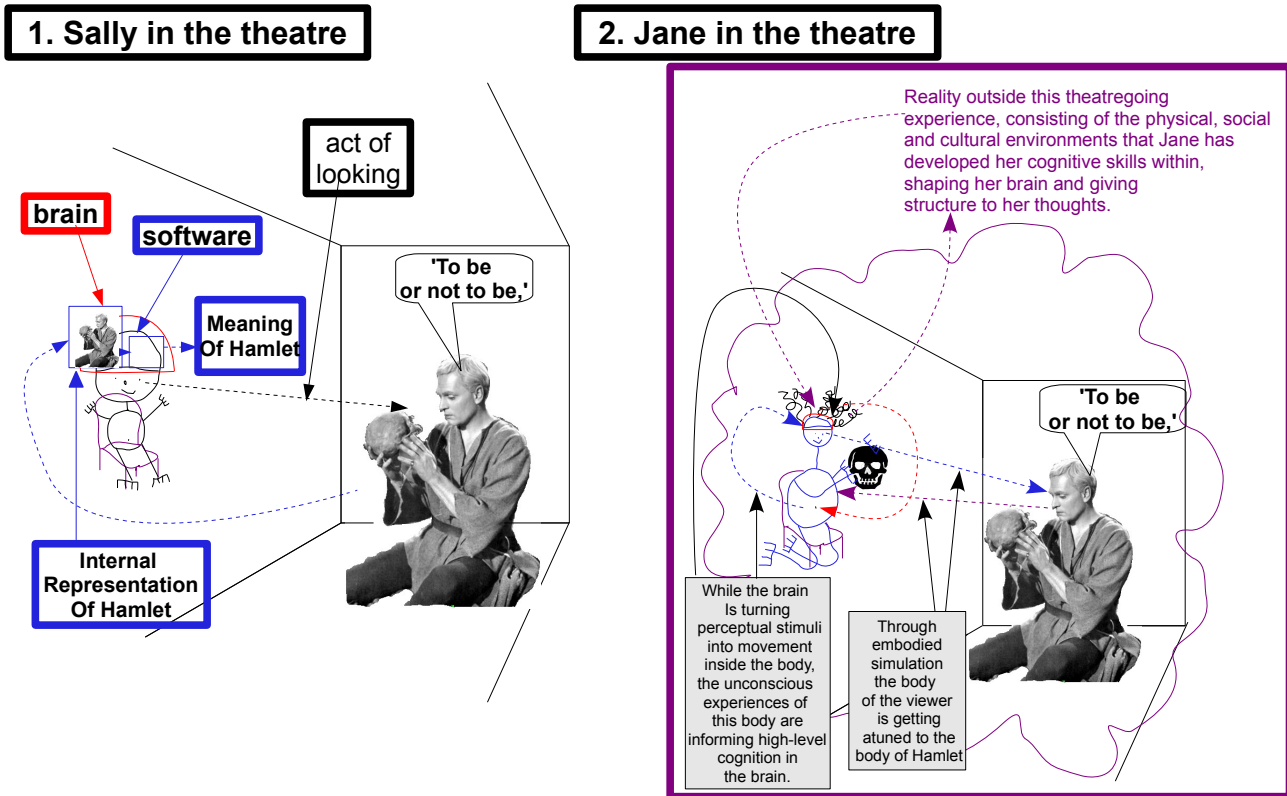
Chapter 3: social and cultural environments

To recapitulate the difference between the way we make sense of what we experience when we see a theatre performance in a classic cognitivist view and in an embodied view on cognition, I would like to introduce two spectators: Sally and Jane. Sally thinks according to the assumptions of neurocomputationalism which, as has been argued among other by Marc Johnson, still inform the common sense idea we have of our minds, and which as it happens are also consistent with what Maaïke Bleeker calls the 'object immanent' understanding of the world that is typical of the modern Western visual paradigm. Jane on the other hand has an embodied and encultured mind, and hers is therefore consistent with Bleeker's relational view on visibility.



As you can see when you look at Sally, her body and her surroundings do not necessarily play an important role in her thinking process, and if we would have all the information regarding the rules of syntax she is

computing with and the input that she is receiving through perception (regardless to what extent that input corresponds with reality), we should be able to compute what she is thinking. Jane's picture is much more messy and confusing. Let's place them both in the theatre:



Again you can see that while in Sally's picture the connections are quite clear and seem to suggest it must be possible to know how she understands what she sees if we know the input and the rules of syntax she is working with, Jane's thought process seems unruly and impossible to analyze. If we want to know what Jane thinks, we need to look at the experiences she has had of her body, of her surroundings, of her social environment and of the culture that she lives her daily life in. Jane has no fixed rules of syntax: instead all of her embodied experiences together have impacted how her mind has developed and still impact it today. If we want to take a well educated guess at what Jane makes of Hamlet, we may need to interview her and find out about her childhood, the books she has read, her medical history, her diet, what she sees on television, what she talks about with her friends and if she travels a lot. That is not what I will do in this thesis, and there are two aspects of the embodied act of looking in the theatre that will allow me to limit the amount of information needed to make an analysis of what is likely to happen cognitively when viewers look at *NATURE* or *NURTURE*.

Firstly, the theatre as a 'vision machine' (Bleeker) organizes our perception, focusing our attention to specific events on stage in specific ways. While the experience of seeing theatre performance

NATURE or NURTURE does involve an unpredictable variety of sensations, associations, concepts and imaginations for every individual viewer, in this thesis I will focus on two concepts that this performance addresses explicitly: the concept of childhood and the concept of selfhood. The question is how our brains and bodies have been encultured to understand these two specific concepts.

Secondly, while I cannot predict what experiences have shaped the brains of every individual viewer with regard to these two concepts, there are aspects of our social and cultural environment that are likely to have impacted all of our brains through our embodied experience of them, such as mass media and consumer products. In part 3.1 I will explore the Western conceptualization of the self, using Bleeker's analysis of the role that our concept of subjectivity plays within visual culture, and Susan Harter's discussion of the way that we construct our 'self' in contemporary Western culture from the perspective of developmental psychology (Harter 1999). While my exploration of our conceptualization of selfhood in this chapter is not based on direct analyses of representations in mass media and consumer goods and relies on the assumption that we have all been exposed to manifestations of a modern Western concept of the self through them, my discussion of the concept of childhood in part 3.2 is based directly on research concerning the construction of childhood through media representations and consumer products.⁴⁴

44 It is important to realize that I am not providing scientific proof as to how we would process the concepts of childhood and selfhood in this performance, nor am I providing a definite answer to how we build our commonsense understanding of them in daily life. That would be beyond the reach of this thesis. I aim to provide a general outline of the cultural and social environment that is likely to affect the conceptualization of those concepts for most of the spectators in the audience of *NATURE or NURTURE*.

3.1 selfhood

"It's important to be yourself. (...) Most people don't know how much wisdom and power resides in the self, which is not the everyday self that gets mixed up with all the business of life, but a deeper self, which I call, for simplicity's sake, the true self. (...) The qualities of the everyday self and the true self are actually very different:

1. The true self is certain and clear about things. The everyday self gets influenced by countless outside influences, leading to confusion.
2. The true self is stable. The everyday self shifts constantly.
3. The true self is driven by a deep sense of truth. The everyday self is driven by the ego, the unending demands of "I, me, mine."
4. The true self is at peace. The everyday self is easily agitated and disturbed.
5. The true self is love. The everyday self, lacking love, seeks it from outside sources."

Deepak Chopra, retrieved from www.oprah.com/oprahs-lifeclass in December 2012

Maaïke Bleeker draws an analogy between the institution of perspective, that invites the viewer to identify with a point of view marked by absence, the Lacanian model that implies that the subject is formed by identifying with an image of the body seen from a viewpoint outside their own body, and the Cartesian disembodied I/eye (Bleeker 2008). These analogies allow her to explain that the logic with which we construct the theatre is the same logic through which we create and conceptualize selfhood and identity. It is a logic that privileges vision over the other senses, marks the body as 'other' to the self, and imposes a split between a psychological interiority and a corporeal exteriority. Sigmund Freud and Jacques Lacan's account of the relation between body and subject have in common that "(...) the ego forms itself around a fantasy of a totalized and mastered body, which is precisely the Cartesian fantasy modern philosophy has inherited" (Elisabeth Grosz in Bleeker 2008, p. 6). According to Bleeker the psychoanalytical understanding of the subject with its specific relations between the body, vision, and subjectivity, is 'the modern story of the subject *par excellence*' (Bleeker 2008, p. 6, italics in the original). She argues that the culturally and historically specific Lacanian model of the mirror stage shows that the world seen as stable and objectively given is "(...) the product of a body conditioned to perceive in culturally specific ways" (Bleeker 2008, 161).⁴⁵

Bleeker describes the public dissection of corpses that took place in anatomical theatres in the renaissance, and argues that this public dissection was part and parcel of the development of the split

⁴⁵ As Bleeker explains, Jacques Lacan's concept of the mirror stage is a theory of the origin of subjectivity. According to Lacan, when a child first encounters a mirror, its fragmented experience of the body as felt from the inside clashes with a coherent and unified body image seen in the mirror. The child learns to identify with this unified body seen, thus stabilizing the fragmented experience of the body from the inside, and assuming an identity that separates it from its environment. The anatomical body too is a body seen from a point of view outside of it. Bleeker argues that the identification with a dead body is not the opposite of the Cartesian paradigm, but its ultimate implication, and she implies that the Lacanian mirror stage in which we identify with the image of a body seen is symptomatic of the de-corporealized Cartesian subject.

between a Cartesian subject and a corporeal object. These public dissections are an example of the way the body became objectified as a mechanical entity to be used and controlled; as a mute object "(...) that we look at rather than look from" (Bleeker 2008, p. 152). According to Bleeker the body as 'other' is central in our understanding of self and of subjectivity, and this understanding goes "(...) at the cost of the absence or disappearance of the body as sensing and thinking being" (Bleeker 2008, p. 156). Furthermore Bleeker argues that the psychoanalytical subject confirms "(...) the opposition of interiority versus exteriority characteristic of the modern subject, as well as the intimate connection between a private interior world as something first and foremost felt versus a public exterior world as something first and foremost seen" (Bleeker 2008, p. 162). Bleeker's analysis of the way this worldview imposes modes of perception demonstrates that the psychoanalytical understanding of the subject disciplines us to 'see' ourselves according to rules that are analogous to the rules of the institutions of drama and perspective. Thus, the logic behind our construction of selfhood is analogous to the logic of the modern Western tradition of dramatic theatre. Both constructions confirm each others status as a 'true' and 'natural' depiction of 'how things really are'.

a sociocultural perspective on the history of the self

In her book *The Construction of the Self: a Developmental Perspective*, psychologist Susan Harter - a leading expert on the development of the self - provides a sociocultural perspective on the history of the self. She explains that a majority of scholars whose research concerns the self still subscribe to William James' distinction between the I-self or self as subject, and the Me-self or self as object (James 1890). While the I-self includes components as self-awareness, self-agency, and a sense of self-coherence and self-continuity, the Me-self includes components such as the self-concept, self-esteem, the 'social me', the 'material me' and the 'spiritual me' (Harter 1999, p. 6). We could say that we experience the I-self, while we conceptualize the Me-self, which means that the characteristics of the self as I described them in chapter two - a self that is a constantly changing dynamic construction build upon body-maps that are fluid and expandable, and that furthermore had boundaries with the world and with the selves of others that are porous and permeable - are mostly relevant to the I-self, while our cultural conceptualization of the self mostly concerns the Me-Self.

According to Harter, the self is a theory that is both a cognitive and a social construction: "(O)ur species has been designed to actively create *theories* about one's world, to make *meaning* of one's experiences, including the construction of a theory of self. Thus, the self is, first and foremost, a *cognitive construction*" (Harter 1999, p. 8, italics in the original). This means that our self-concepts and their structures and organizations develop and change over time. She draws on the work of psychologist Kenneth Gergen, who discerns three major periods with regard to self-theories: Romanticism, Modernism, and Postmodernism.

autonomy vs. connectedness

During the late 18th and 19th centuries, the romantic vision of the self focused on the psychological interior. With the rise of Modernism the machine became the metaphor of the self, and rationality was highlighted as the essence of humanity. Harter explains that from a developmental perspective, the modernist theory of the self resulted in the idea that "(...) proper molding by one's family and wider societal forces would result in the well-designed person whose behavior would be self-directing, authentic, trustworthy, and consistent" (Harter 1999, p. 23). Modern man was to be genuine and stable.

In the first half of the 20th century, Gergen finds that there was a historical resistance to the view that we might consist of multiple selves, in the form of a 'consistency ethic' (Gergen in Harter 1999, p. 23). Harter supports Gergen's criticism of this consistency ethic, arguing that indeed most theories in the 20th century placed emphasis on the inward unity of the self, on self-consistency and on the integrity of the self. Psychologist Seymour Epstein for example formulated the 'unity principle' (1981), which holds that "(...) one of the most basic needs of the individual is to maintain the unity and coherence of the conceptual system that defines the self" (Harter 1999, p. 23). At the same time, Harter observes, there is a widespread theoretical interest in the authenticity of the self, and more specifically in the vulnerability of the authenticity of the self. Authenticity is often placed in relation to social connectedness, whereby connectedness is mostly placed in opposition to the protection of the authenticity of the self (Harter 1999, p. 228).

While the modernist view on the self emphasizes coherence, stability and integrity (and therewith brings about the anxiety that this integrity can be compromised), the postmodernist view on the self places emphasis on multiplicity.⁴⁶ As described by Harter, the postmodern 'saturated' or 'populated' self creates multiple roles for different social relationships, which allows the individual to respond adaptively to different relationships. However, this need to create multiple selves also leads to doubts with regard one's true identity, and according to Gergen "(t)he sense of an obdurate, core self is compromised in playing out one's role as 'social chameleon'" (Gergen in Harter 1999, p. 24).⁴⁷

the independent and the interdependent self

Harter makes a comparison of the way the self is perceived in different cultures. This comparison brings to the fore how strongly the Western conceptualization of the self builds on the notion that social connectedness threatens the integrity of the self. While Harter notes that the dichotomy between Western and non-Western societies is overly simplistic, generally speaking contemporary Western society privileges

46 According to Gergen, the current period of Postmodernism has in part risen under the influence of new technological developments. Air travel, email and cellphones, for example, have accelerated our social connectedness. Contemporary life has become a "(...) dizzying swirl of social relations" (Harter 1999, p. 23), which dictates the creation of multiple selves.

47 Harter points out that Gergen's emphasis on the erosion of the belief in one's essential self in contemporary society appears to be informed by the same anxiety that the authenticity of the self can be compromised that Gergen identifies as typical of the modernist view on the self.

autonomy over connectedness, creating a *independent* rather than an *interdependent* notion of the self (Harter 1999, p. 285).

“As many have observed (...) the Western view of self emphasizes separateness, autonomy, independence, individualism, and distinctness. From a developmental perspective, therefore, the role of socializing agents is to ensure that their child-rearing practices encourage these characteristics. Western conceptions of the ideal adult self have also been labeled ‘self-reliant’ (Spence, 1985) and ‘self-contained’, if not ‘egocentric’ (Shweder and Bourne, 1982). In contrast, non-Western societies have adopted a more socio-centric or collectivist ideal in which self-definition is deeply embedded in the matrix of social relationships and obligations” (Harter 1999, p. 283).

The Western self can be characterized as *independent*, and locates crucial self-representations within the individual. In this view on the self there are clear psychological boundaries between the self and the other. In contrast, an *interdependent* notion of self in, which for example is present in Japan, defines individuals not by their uniqueness but by their social connectedness to others. Harter argues that in developmental psychology, the Western view on selfhood leads to the view that children must be transformed from helpless and dependent infants into self-sufficient and independent adults, and she explains that for example much theoretical attention is being paid to processes of differentiation or separation (from others) and individuation (of the self). This idea is embedded in our culture to such an extent that it is difficult for us to imagine that “(...) in many non-Western cultures, the newborn is considered to be independent and in need of socialization towards dependency” (Harter 1999, p. 287, italics in the original).

Susan Harter's description of our sociocultural conceptualization of the self suggests that the modern Western view on the self as described by Bleeker still informs our commonsense understanding of the self today. While postmodernism has given rise to a more fragmented view on the self, these developments at the same time have caused increased anxieties with regard to the stability and authenticity of the self. The Western independent notion of the self as described by Harter still emphasizes coherence, authenticity and separateness, and still relies on a strict separation between a psychological interiority and a corporeal exteriority. It is therefore consistent with Bleeker's description of the psychoanalytical 'decorporealized' self.

Bleeker argues that the modern Western view on the self and the Western tradition of dramatic theatre are implicated in each other. The same appears to go for the postdramatic view on the self as described by Harter, and Bleeker's description of the emphasis on the presence of the performer on the postdramatic stage. While, following Bleeker, the emphasis on presence in postdramatic theatre still relies on a disembodied view on the act of looking on the part of the spectator, the postmodern view on the self as described by Harter too still relies on a disembodied view of the self: a self that is separate and autonomous and that is still defined in terms of a psychological interiority that is vulnerable to being compromised by

external forces.⁴⁸

In chapter two I have described an embodied understanding of the self, which is constituted by the continuously changing mappings in our brains of our bodies' boundaries with the world and by the porous boundaries between our minds and those of others - a self that is constantly being re-written. The theories that people create of their 'selves' today is clearly an entirely different matter. Paradoxically, the conceptions of the self that still define it as a stable and separate entity are embodied in metaphorical mappings in the architecture of our brains too, and they too have been and are being shaped by our bodily experiences.

48 According to Marc Johnson, there is a bodily basis for the latent Cartesianism in our commonsense understanding of the mind and for the persistence of a dualistic perspective in philosophy and science, which is also relevant the persistence of a disembodied view on the Self.

As he explains, our bodies are build to escape our awareness of them. The nature of our bodies, ironically, gives rise to the experience of a split self, because "(a)ll our perceptions are directed *to* or *at* what is experienced and *away from* the body doing the perceiving" (Johnson 2007, p. 4, italics in the original). Our bodies are build to hide our bodily processes in order to make a fluid automatic experience of the world possible: our perceptual activities and our organs 'disappear' to make perception possible (Johnson 2007, p. 5). Another major type of bodily disappearance Johnson refers to are the visceral and endocrine systems that provide the basic conditions for our experience, and that underlie some of our most powerful experiences while the experience of their operations is unavailable to our awareness. These effects of bodily disappearance are an inherent part of our biology, and necessary for us to survive and flourish. They also seem to evoke the experience of a mind that is separate form the body.

3.2 Childhood

“ 'Do you really think, Rupert,' she asked, as if Ursula were not present, 'do you really think it is worth while? Do you really think the children are better for being roused to consciousness?' (...)

'They are not roused to consciousness,' he said. 'Consciousness comes to them, willy-nilly.'

'But do you think they are better for having it quickened, stimulated? Isn't it better that they should remain unconscious of the hazel, isn't it better that they should see as a whole, without all this pulling to pieces, all this knowledge? (...) do you think the children are better, richer, happier for all this knowledge; do you really think they are? Or is it better to leave them untouched, spontaneous. Hadn't they better be animals, simple animals, crude, violent, *anything*, rather than this self-consciousness, this incapacity to be spontaneous'

They thought she had finished. But with a queer rumbling in her throat she resumed, 'Hadn't they better be anything than grow up crippled, crippled in their souls, crippled in their feelings – so thrown back – so turned back on themselves – “

D.H. Lawrence, *Women in Love*, 1920

As professor of childhood studies Daniel Thomas Cook argues, childhood is not a given natural category but a thoroughly social artifact, and portrayals of children and childhood are part of a politics of representation and of the exercise of power of adults over children (Cook 2002). In his introduction to *Symbolic Childhood* Cook lists the following connotations that are associated with the modern Western concept of childhood: dependency, innocence, nostalgia for a desired and imagined past, a promise of a future and the relationship between humans and the cosmos (Cook 2002, p. 3). Buckingham and Tingstad in addition observe that the Western conceptualization of childhood presents a model of the child “(...) as moving in a linear fashion from unknowing to knowing and from a simple to a complex being” (Buckingham and Tingstad 2010, p. 8).⁴⁹

49 While it would be beyond the scope of this thesis (not to mention in contradiction with its basic attitude towards the concept of objectivity) to identify what childhood is really like, I would like to mention that the research in the field of neuroscience and developmental psychology has provided evidence that clearly contradicts the notion that the child is 'simple' and gains complexity in adulthood. Philosopher and developmental psychologist Alison Gopnik finds that the brains of infants and children are in fact far more complex than those of adults.

The brains of children, Gopnik explains, show much more connectivity, while the brains of adults have reduced those neurological connections that are not used as frequently and have strengthened the more important ones. Gopnik explains the difference by comparing the adult's brain to a landscape with many big fast efficient highways, while the child's brain has a far greater and more complex network of small dirt roads to explore. And while the child's brain has greater plasticity, the adult's brain has a greater ability to inhibit certain neurological connections (Gopnik 2009, p. 19). Gopnik argues that our neurological plasticity is the key to human nature, and that it is constituted among other things by our ability to learn, to imagine alternative worlds or 'counterfactuals' and consequently build new environments (Gopnik 2009, p. 16). The ability to imagine counterfactuals is much stronger with children than with adults.

Culturally and historically specific conceptualizations of what childhood should look like produce children that confirm these models of childhood through for example the institutions of education, as is argued by professor of media and communication David Buckingham, as well as by developmental psychologists Erica Burman and Willem Koops and by professor of childhood studies Verbjørg Tingstad (Buckingham and Tingstad 2010, Burman 2008, and Koops 2008).⁵⁰ Yet at the same time, as Daniel Thomas Cook states, the presence of a real living breathing child will challenge the concept of childhood, because no singly real child can completely represent its contradictory and encompassing sets of signs. Meanwhile real living children are deeply affected by the conventions concerning what childhood should look like, because, as Erica Burman argues, children whose life circumstances and practices of daily living fail to confirm the idealized norms that define childhood as a period of irresponsibility, indulgence and play "(...) suffer further marginalization, or even pathologization" (Burman 2008, p. 11).

Developmental psychologist Willem Koops provides an overview of the construction of childhood in Western Europe (2008). He identifies two major influences that have grounded our conceptualization of childhood from the beginning of modernity up to the second half of the twentieth century. The first is Rousseau's view on childhood, which was especially influential in the period of Enlightenment. Rousseau presented the child as spontaneous and natural, and the adult world as the culture it needs to be sheltered from. The second is 18th and 19th century German romanticism, in which the child was seen as natural and (religiously) pure because of its lack of knowledge. Koops argues that Rousseau's view on the development of the child as moving from wild to civilized is equal to the hierarchy that saw non-Western societies as 'primitive' and not yet 'civilized'. This logic, Koops explains, presents the cultured Western adult as the highest level man can reach. I argue that the analogy between this hierarchy between Western and non-Western civilizations and the view on child development that was dominant during the period of Enlightenment suggests that the specific view on childhood as it arose in the period of Enlightenment is embedded in a specific view on Western man in general. This view on childhood functions as part of the glue, so to speak, that holds a specific ideal of the Western adult self together. Susan Harter's remarks concerning the consequences that a Western independent notion of the self has for our conceptualization of childhood suggests the same: that our concept of selfhood and of childhood mutually define each other.

the crisis of childhood in the 20th century.

Following Willem Koops, one of the major influences that caused the rise of the concept of 'childhood' in the first place was print culture. Because of print culture information could be controlled by adults and then gradually be made available to children, and Koops follows media theorist Neil Postman in arguing that print

⁵⁰ Willem Koops, for example, presents evidence that indicates that through educational institutions in Europe that were organized according to Rousseau's view on developmental psychology, childhood has been shaped and created according to Rousseau's ideas in Western Europe from the Enlightenment in the eighteenth century up to the second half of the twentieth century, and that these institutions in turn produced actual children that behaved consistently with Rousseau's theory. He uses this example to support his argument that the modern child and its development are cultural constructs (Koops 2008).

culture turned adulthood into a symbolic achievement rather than a natural given. The concept of childhood arose out of necessity when children needed to go to school to be able to enter the adult world.⁵¹

While between 1850 and 1950 the concept of the modern Western child had its finest hour, and children were for example increasingly being sent to school and provided with their own separate cultural environment, Koops argues that from the 1960s onward the concept of childhood began to lose its signification. This development was set off by the rise of new media. When new media provided children with alternative means of communication, a consequence was that illiteracy no longer excluded children from the adult world in the same way as it did before. Koops follows Neil Postman in his assertion that 'the child' is disappearing. A historical process of 'infantilization' has ended, and the tradition of separating the child from the adult world and gradually and carefully bringing it into it has come to an end as children have access to the adult world right from the start. According to Koops, 'the Modern Western Child' that has been produced by Enlightenment and romanticism in the 18th and 19th century has disappeared in the 20th century.

Notably, Koops, Cross and others find that 'the adult' is disappearing too. Gary Cross explains that children are for example participating in top-level sports more than before while adults are embracing the lifestyle of the 'teenage cool', that while children are playing less classical children's games it has become more acceptable for adults to play video games, and that while children increasingly dress like adults, adults increasingly dress like children (Cross 2010, p. 26).

childhood and consumer culture: the anxiety-fed legend of childhood innocence

Willem Koops' assertion that childhood is in crisis is confirmed by several articles on childhood and consumer culture (Vjebørg and Tingstadt 2008) and representations of childhood in popular culture (Cook 2002) that shed a light onto the way this 'crisis' impacts our daily lives.

Consumer culture has had a profound influence on the construction of childhood. When advertising started to target children directly rather than only through their parents this was a breach with the modern enlightened ideal that the child should be sheltered by their parents, and gave rise to the contrasting views of children as competent empowered and sophisticated critical consumers who are cooler, more creative and more fun than their boring parents (from the side of marketeers), and children as innocent, fragile and vulnerable to manipulation (mostly from the side of parents) (Cook 2002, p. 13).

According to historian of childhood Gary Cross, a consequence of children's consumer culture is that the

51 Although I will not explore this connection in this thesis, it is remarkable that the impact of alphabetic writing and print culture on the construction of childhood is theorized by Koops and Postman, while at the same time a connections between print culture and our conceptualization of the human mind and of the self appears in several texts as well. Maaïke Bleeker for example argues that "(a)lphabetic writing supports an understanding of the mind or self as disconnected from the body as well as of meaning as separate from embodied materiality" (Bleeker 2010, p. 42). Theatre scholar Tobin Nellhaus also explores the connection between the rise of print culture, our understanding of the mind and of the self and performance strategies in his article *Performance Strategies, image schemas, and communication frameworks* (Nellhaus 2008). He argues that the embodied experience that the rise of print culture provided in the eighteenth century gave rise to a new understanding of the mind. These correspondences seem to confirm that the constructions of childhood and selfhood are intertwined and suggest that they arise from the same embodied social and cultural experiences.

boundaries that once separated adulthood from childhood have become blurred, as children changed from 'cute' to 'cool': "(T)he culture of teenage 'cool' (marked both by a rejection of parental restrictions and an embrace of parents' indulgence) has become a lifestyle shared by adults and children instead of a lifestyle abandoned at maturity" (Cross 2010, p. 7). This blurring of lifestyles involves the shift from the 'cute' to the 'cool' child, but also has given rise to a new approach to maturity,⁵² which again seems to suggest that the concept of childhood and that of the adult self mutually define each other.

In their article *Fashioning Innocence and Anxiety: Clothing, Gender, and Symbolic Childhood*, Kaiser and Huun point out that in the past twenty years a number of studies have been published with regard to childhood with titles that express a clear sense of emergency, such as *Saving Childhood: Protecting Children from the National Assault on Innocence* (Medved and Medved, 1998), and *Stealing Innocence: Corporate Culture's War on Children* (Giroux 2000) (Kaiser and Huun 2002, p. 189). Kaiser and Huun analyze how changes in children's clothing reflect anxieties concerning innocence. They call the concept of childhood innocence an 'anxiety-fed legend', as it is framed as an object of desire that is in the past. The problem with the concept of modern childhood innocence is that it defines children negatively as that which adults are not: '(...) not sexual, not vicious, not ugly, not conscious, not damaged"' (Higgonet in Kaiser and Huun 2002, p. 202). They argue that the ideal of innocence entered a crisis when late twentieth century capitalism turned innocence into a commercial and sexual category and renegotiated what it means to be a child. As a result, the constructions of sexuality and of childhood became blended, and the ideal of the 'romantic child' shifted to that of the 'knowing child'.

Whether it is seen from the perspective of capitalism and consumer culture, or from that of media-saturated society, our construction of the child as unknowing, authentic, cute, simple, not-ugly and nostalgic is shifting and in crisis. Representations of children have moved from simple to sophisticated (Cook), from fragile to empowered (Vjebørg and Tingstad), from cute to cool (Cross), from innocent to knowing (Kaiser and Huun), and the boundaries that separate childhood from adulthood are becoming increasingly unclear. After the death of God, the Author and the Self it appears to be the case that the Child too is approaching its last breath.

the performance of perception

The aforementioned studies from the fields of developmental psychology and childhood studies indicate that the current changes that the concept of childhood is undergoing is especially problematic for adults. The changes are putting pressure on the way adults relate to real living children, and are at the same time

52 Cross argues that the rise of children's consumption "(...) produces a culture of the cool, a form of rebellion against adulthood (...) and against traditional paths to maturity" (Cross 2010, p. 19). Cross refers to the teddy-bear craze as an example of the desire of parents for of the cute and the nostalgic, and explains that parents are expressing a new tolerance for the naughty-but-nice-child. These changes result in a shift in the concept of adulthood. Traditional scripts for reaching maturity are being subverted, and the traditional markers of adulthood are no longer accepted, and 'the cool' has become a part of adult culture, marking the blurring of lines between adulthood and childhood. This 'cult of the cool' undermines the older image of the sheltered child who is trained to be an adult.

challenging our conceptualization of the adult self. Childhood is in crisis, and since childhood is a construction made by adults, the adults are the ones in a state of emergency.

The social and cultural constructions of selfhood and childhood depend upon each other. In Western modernity the child has been defined in relation to the (future) adult self as much as the self has been conceptualized in relation to a simpler but also purer, more authentic, and not yet compromised child, as a kind of 'self that is in the past'. In current times both concepts are changing and therefore under pressure: while the shift from a notion of self that emphasizes unity to one that allows for multiplicity causes anxieties with regard to our integrity and authenticity, the shift from a notion of the child from unknowing to knowing and from simple to sophisticated leads to similar anxieties. Bleeker's analysis of the relationship between the Western tradition of dramatic theatre and the modern Western visual paradigm with its analogies to the view on the self expressed in the Cartesian paradigm and in the Freudian and Lacanian model of the self suggest that our theatre traditions are intimately related to both our conceptualization of selfhood and of childhood, confirming and reinforcing them, producing specific ideals of the human adult and of the child on stage in a 'politics of performance' (Read 2008) that includes some representations of childhood as natural and true, while excluding others.⁵³

Maaik Bleeker argues, as explained in chapter one, that visuality as a culturally and historically specific manifestation of visual experience can tell us something about the scopic regime that is influencing and dictating what we think we see. So what we think we see when we look at a child onstage can reveal something about the tacit rules of the scopic regime that we are operating under. What we see when we look at the children performing *NATURE or NURTURE* for us in a black box theatre in 2010 can reveal something about the way we have been encultured to process what we see, and can help us understand something about the nature of those processes themselves. Bleeker writes that theatre, 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). *NATURE or NURTURE* forms my experimental set-up in this thesis. After three chapters of neuroscience, visuality and sociology, let's finally see how all the before can help us understand how our

⁵³ Alan Read discusses the staging of 'children, animals, things and other anomalies' (Read) on the post-dramatic stage in his *Theatre, Intimacy and Engagement: The Last Human Venue*. His discussion is interesting here because his analysis suggests that the construction of childhood is not so much about what childhood should look like, but ultimately concerns the way that we define what a human adult should look like, and especially because he addresses the way that these definitions are (re)produced and confirmed by modern Western theatre conventions. He argues that our theatre traditions work as Giorgio Agamben's 'anthropological machine', establishing the identity of the human 'as human' while excluding the inhuman. The theatre collective that he characterizes as 'deeply conservative' serves to produce the category of the human, while at the same time this politics of performance denies infants, animals and things access to the collective (Read 2008).

In *Performless: the operation of I' informe in postdramatic theatre* (Georgelou 2011), Konstantina Georgelou too argues that the category of the human is "strategically produced and secured by the anthropological machine of Western thought", and that this machine is "(...) driven by a dual process of inclusion and exclusion" (Georgelou 2011, p. 99). Georgelou analyzes theatre performances in which humans share the stage with non-human animals and infants, resisting Western anthropocentric theatre expectations in which humanness is privileged and placed at the center of attention (Georgelou 2011). Georgelou argues that the anthropocentricity of the Western model denies the multiplicity of nonhuman animals, and that Western thought is reductive and essentialist with regard to nonhuman animals. This denial of the multiplicity of nonhuman animals is comparable with the way that our conceptualization of childhood reduces children into one category. Thomas Cook for example argues that adults view themselves as more thoroughly specified and diverse (gendered, raced and classed), than children: "Childhood often stands in contrast to adulthood in ways which are not the simple inverse of adulthood's relation to childhood. Any particular child 'stands' for childhood in ways that any particular adult doesn't represent adulthood" (Cook 2002).

embodied and encultured minds perform the act of looking at this particular performance.

Chapter 4. looking back

In this chapter some of the analytical tools developed by Maaïke Bleeker will join forces with some theories from cognitive science, and together I will use them as a toolkit to account for the impact on the spectator of visuality as an event unfolding between the one seeing and the thing seen. I will analyze the relation between the corporeal experience of the act of looking at *NATURE or NURTURE* and the processes of meaning-making that result from them in the embodied mind of the spectator.

In part 4.1 I will join Bleeker's understanding of the concept of focalization with the theory of embodied simulation. I will use the concept of focalization to analyze how *NATURE or NURTURE* invites the spectator to get absorbed in the events onstage, and how it also disrupts the effect of absorption and the illusion of an immediate view through a 'finestra aperta'. By discussing the processes of perceptual and imaginative simulation performed by the spectator, I will form a better understanding of the way that this play between absorption and theatricality impacts the spectator physically.

In Part 4.2 I will use conceptual metaphor theory to discuss how this particular theatre performance 'works' on our embodied and encultured conceptualizations of childhood and selfhood. I will argue that, in part as a result of the processes of focalization and simulation described in part 4.1, the image schema *CONTAINMENT* is the dominating schema that grounds our understanding of selfhood and childhood in this particular viewing experience. I will discuss the relations between the properties of this schema as it is structured in our brains, the structures and qualities of what we see onstage, and the way this schema organizes other cultural domains in our everyday lives. The goal of this chapter is to dissect some of the processes of perceiving and meaning-making that our bodies perform when we look at *NATURE or NURTURE*, in order to get closer to answering the question how through the embodied act of looking, abstract meaning, thoughts, ideas and opinions emerge in the bodies of viewers.

4.1 stepping inside and being thrown out

“The whole point with the subjectivity of vision is exactly that we cannot simply choose how to see what we see but that instead how we see what we see is to a certain extent the effect of cultural and historical visual practices to which the individual seeing is subjected.” (Bleeker 2007)

By staging four children in the ages eleven to thirteen for an exclusively adult audience, *NATURE or NURTURE* plays into what Bleeker calls the ‘nostalgia for the present’ in our culture. The fact that they are not professional actors but real children highlights their live presence and emphasizes the fact that this is theatre. Throughout the performance I wonder if they will remember their lines, how this has been rehearsed, if they should be doing this on a schoolnight and if their performance will fail at some point. Paradoxically however their live presence also works to obscure the fact that they are not present ‘as they really are’ but that they are being staged for us. Instead of accepting this presence-effect as a quality of their young bodies onstage, Bleeker suggests that we need to ask what presuppositions, desires and fears lead us to accept their presence as real and natural at some moments, while we also reject their performance as unnatural and untrue at other points.

viewing positions

Theatre performance *NATURE or NURTURE* starts with what appears to be a coherent dramatic situation. We - the audience – are sitting in a conventional black box theatre, with a lit stage and a darkened auditorium, suggesting a world onstage that we look into from a position outside of it. We see a living room with what looks like the leftovers from a party. A few surreal details in this stage-setting stand out, like a colorful and slightly psychedelic carpet and four large pillars in red and white stripes that make me think of Alice in Wonderland. The stage setting organizes what we see in a way that is consistent with the logic of perspectival painting: we are looking into a world that we are not included in, as if through a ‘finestra aperta’. However, right from the start of the performance the performers look through this ‘finestra aperta’ back at us.

At the start of the performance, four innocent looking children slowly take off their pajamas and dress up as adults, and then they start to enact a party. One couple (played by actor Karsten and actress Zoë) has invited the other couple over (played by actress Dorothy and actress Moriah, who is dressed up as a man). The two couples spend an evening drinking, smoking, seducing each others' spouses and exchanging hostile comments while smiling politely. We are looking at adults who act civilized, while

they also accidentally reveal the cracks that expose their civilized behavior as a layer of varnish over a psychological inside filled with repressed lust, aggression, and with sadness over their lost childhood. In itself, this is a coherent dramatic situation that we are allowed to look into from a safe distance, and that doesn't draw attention to our viewing positions as specific subjective 'points of view'.

Before the party starts Zoë puts her child to bed: she picks up a plastic baby-doll and carries it upstairs, and she and the plastic baby (with Zoë's voice) have a little conversation.

Zoë (to Karsten) I don't really feel like it.
Karsten Then why did you invite them?
Zoë Because it's our turn ... We at their place, they at our place.
(she picks up the plastic baby) O o o o, silly daddy.
Can you pour me a drink in the meantime? For when I come back?
(she walks up the stairs with the baby)
Well, shall mummy tuck you into your bed? Nice and safe in your little bed.
Mummy would really love to go to you know. I'd love to go to bed.
Plastic Baby Then why don't you?
Karsten Yes, that's something daddy would like to know too.
Zoë Because it's not grown-up bedtime yet. So mummy can't go to bed.
Plastic Baby But why?
Zoë Yes, why. That's just how it is, and even mummy can't change that. Well, now off to bed little honeypie, your eyes are closing already.
(to Karsten) Honey can you put on some music? Some jazzzzzzzzzzzzzzzzzzzzzzz.
(to the baby) Do you want to try to walk the last bit yourself? No! You can't, can you!? Come, let mummy carry you.⁵⁴

Even though the child is represented by a baby-doll, the questions it asks suggest this is a somewhat older and very clever kid. Zoë's behavior however emphasizes that the child is small and helpless, and not able to understand the adult world. Zoë also implies that the child lives in a world that is safe, and that the adult envies this. So, seen from the point of view of the character of Zoë-as-an-adult, children are presented as innocent and unaware of what goes on in the real world.

The deliberate over-acting of the performers can be understood to present the adult party as 'just theatre', but they often remain in adult-character for such a long time that we are allowed to get absorbed in the anecdote of the two adult couples. The anecdote of four adults who are having a party, however, is not the only dramatic situation presented to the audience. It is also suggested that what we see is in fact a situation in which four children have come out of bed after their parents have gone, and are now re-enacting what they might have overheard earlier. This second dramatic situation works to discredit the

⁵⁴ *NATURE or NURTURE*, 2010, my translation. The script was provided by courtesy of Alexandra Broeder and Theaterzaken via Rudolphi.

first one, exposing the false assumptions at work in how the four adults define childhood: the real children that we have seen coming out of bed in the dark and that are now 'playing house' are clearly nothing like the helpless plastic babies, and they are clearly not unaware of what goes on in the lives of grown-ups. The second situation, or frame, presents the representation of the difference between adults and children in the first one as false or 'staged', and suggests that if we take up the point of view of the four children, we will be given a vision on childhood that is more real and true.

While they perform their dialogues, all four performers constantly look at the audience with big forced smiles. The fact that they deliberately make eye contact with us provides a third frame through which we can look at this performance, and that presents its own ideal viewing position or 'point of view' to the audience: the situation in which four children between the ages of 11 and 13 are performing for a room full of adults. The meaning of the eye contact made by the performers remains ambiguous though, as they never address us directly. They stare at us with aggressive smiles, they flirt with the audience, but all the words they say fit within the dramatic frames of the dialogues between the two adult couples and of the four children who are playing house. They don't explain what they want; it seems like they are just ostentatiously noticing us. This third dramatic situation of four young performers who make eye contact with us while they perform a play in a theatre this evening can be understood to discredit the second one: maybe the story of the children re-enacting their parents is also 'just theatre' and not the real thing. If the third situation is the real one, then it is not a pleasant one: the children smile at us, but certainly not in a friendly way.

It might seem counterintuitive to identify this third situation as a 'dramatic situation' with its own address to the audience. After all the situation in which these children are performing for us adults in a theatrebuilding this evening is in fact true. We might consider this situation to be 'the real one', giving us real access to the children who are after all really present (as are we). However, as Bleeker explains in her dissection of visuality, it is important to remember that this 'presence-effect' still relies on a point of view that the audience must take up in order to perceive it as natural and true. As discussed in chapter one, in order to create the effect of absorption in postdramatic theatre by suggesting that the dramatic frame has disappeared and thus suggesting that we can finally see performers 'as they really are', what needs to be suppressed is that there is still a subjective point of view that we need to be willing to take up in order to conflate actor and character and to perceive these moments as moments of true presence. So, paradoxically, we must get absorbed in this dramatic situation as well in order to perceive it as real and true. The question is what point of view we are accepting when we perceive this situation as natural and true or instead rejecting it when we feel 'displaced'.

NATURE or *NURTURE* does not provide the audience with one single universe that they can see as a meaningful totality that exists independently from them. Instead there are multiple universes offered to the viewer at once, all of which present a different address to the audience that places them in a specific subject position, or possibly displaces them. This process of positioning the viewer happens by means of focalization.

focalization

Bleeker uses the linguistic term 'deixis' and the narratological concept of 'focalization' to analyze the way that visuality takes place in the theatre. Deixis is a linguistic term for words like 'I', 'you', 'here' and 'there' that organize relationships with regard to the subject. The signs of deixis in the internal system of theatrical communication can reveal how relations are organized within the world onstage.⁵⁵ Bleeker however applies the notion of 'deixis' to the external system of theatrical communication: the communication between stage and auditorium. When the signs of deixis in the external system of theatrical communication are suppressed, this supports the illusion of a world that we are looking into rather than one that we are implicated in. In *NATURE or NURTURE*, the fact that the performers look the audience in the eyes functions as a sign of deixis in the external system of theatrical communication, thus highlighting the processes of focalization that mediate in what we think we see.

Bleeker explains that in the theatre, internal focalizers are those aspects that invite the viewer to 'step inside' and project themselves out of their seats, away from their auditorium-located bodies and into the stage world. By means of internal focalization viewers are invited to identify with a specific point of view by 'standing in' and seeing the work as if it were from there. In *NATURE or NURTURE*, some internal focalizers invite us to take up the subject position of the children (to 'step inside their shoes', so to speak), and others invite us to 'see' the events onstage as if it were from the point of view of the four adults. At the same time the way the performers look back at us spectators disrupts these two processes of internal focalization, by reminding us that we are in fact an audience sitting in theatre chairs. Therefore this works as an external focalizer: one that does not invite us to 'step inside' the onstage world, but that instead reminds us of the relation between us as viewers and this world that is being carefully staged for us. If we accept as real and true that the children are capable and strong individuals standing up to an audience of adults we can get absorbed in what I refer to as the 'third dramatic situation'. This situation includes that we as viewer take part in the 'role' of theatre spectators, and therefore accepting it forces us to become aware of our own involvement as subjects looking in the events onstage.⁵⁶ As a result of the processes of focalization we are constantly being moved between ourselves in the position of the partying adults and in the position of the children who are re-enacting them, while also being thrown back into our auditorium-located bodies.

Halfway through the play, when the party has started to get completely out of hand, Dorothy and Moriah step out of their adult character because they want to stop playing:

Dorothy I am not really having fun anymore.

Zoë 'I am not really having fun anymore.'

No. I am not really having that much fun anymore either.

But in for a penny, in for a pound. We haven't even really started yet. If you are not having

55 The internal system of theatrical communication is the communication between the characters in the fictive cosmos onstage.

56 One could even argue that the direct eye contact between the viewers and the performers too is an instance of internal focalization, depending on which imagined world we are focusing our attention on. On one hand it does invite us to *step outside* the worlds created onstage. On the other however, if we identify the situation in which we are in the theatre space together in its entirety as a world that has been created for us too, one can argue that we are still invited to *step inside* this world.

fun you should just drink more. You have to make your own fun you know.

Moriah Yes, but I have to go to school tomorrow.

Zoë Stop whining. One has to celebrate life.

Moriah Can't you act normal for a bit?

Zoë You're just scared.

Zoë and Karsten dare the other two to go on and they all decide to get another drink, 'something stronger this time'. In this dialogue, the story of four children who re-enact their parents party gets highlighted. During the scene the performers do not look at the audience, as a result of which the external focalization that had been caused by this sign of deixis between the onstage world and the viewers is temporarily abandoned. Instead this dialogue is full of signs of deixis in the *internal* system of theatrical communication that highlight internal focalization: the performers are suddenly addressing themselves and each other directly with words like 'me', 'I' and 'you'. We are invited to step inside and get absorbed completely in the vision of four children who are getting more and more confused and upset by their own re-enactment, thereby revealing how deeply they must have been hurt by their parents' behavior. The fact that the performers are real children works as an internal focalizer as well, giving extra persuasive power to the invitation to accept this point of view as real rather than staged: as we are in fact looking at real children, this must be a vision of how childhood really is.

embodied simulations

Over the course of the performance, *NATURE or NURTURE* moves the spectator from one subject position into another at high speed, pulling us onstage at one point to throw us back into our seats at the next. The next question is how the address of this performance on the spectators impacts their perceiving bodies cognitively. How does what this theatre performance 'does' in terms of focalization relate to what we know about the mechanism of embodied simulation? Our brains perform embodied simulations of what we perceive and of what we imagine all the time. Performing these simulations enables us to understand the world and act in it. In the theatre, processes of focalization create a specific kind of address to our perceptual systems. The theatre therefore creates a situation that activates our sensorimotor system to perform simulations in a way that is slightly different than in everyday life.

One of the things that cognitive science reveals is that when we look at *NATURE or NURTURE* we do not just 'mentally' take up all the subject positions offered to us as viewers. Instead we embody them. As we sit in the auditorium and look at the performers onstage, an intersubjective 'we-centric space' (Gallese) connects our 'minds' with theirs. We engage in the process brought about by the MNS whereby the 'objectual others' (in this case being the adult-characters at one moment and the characters of the children who re-enact adults at another) become 'other selves' like us. This process is highly automatic in nature and therefore involuntary. When we take up the subject position of for example the partying adults,

we automatically perform physical simulations of their facial expressions, we embody their emotions, their loss of self-control and their enlarged and intensified movements and tones of voice. When we get absorbed in the subject position of the children who re-enact partying adults, we perform embodied simulations of their enthusiasm, we get emotionally attuned to their insecurities, their fear of the game they are playing and the pressure they feel to continue playing even when the game is turning more aggressive than they can handle. As this performance offers multiple subject positions at once, we get emotionally and bodily attuned to the emotions of the hysterical adults as well as to those of the children who are playing house.

Furthermore the shared neural state between the body of the spectator and the body of the performer impacts the bodily parameters of that spectator. For example, if I am looking at the young performers and I am focusing my attention alternately on the different characters that they play, my heartbeat, breathing, and muscle tension will alternately adjust to the bodies that I am mirroring. As the adults' physical behavior is completely out of control, it is likely that spectators would begin to feel like their bodily coherence and inner consistency is compromised too. As the children start to express their discomfort and fear of their own games, spectators are likely to feel a similar sensation of being pressured to continue playing a game that is 'not fun anymore'.

destabilizing perception and destabilizing the self

When we get absorbed in one of the different dramatic situations presented to us, our bodies escape our awareness. For example when actress Moriah steps out of adult character and wants to stop the party because she is scared, I step inside the onstage world into her point of view, and I forget that I am a body sitting in a theatre chair. This disappearance of my awareness of my own bodily position clears the way for 'liberated embodied simulation' (Gallese 2011) and heightens the intensity with which I mirror Moriah's distress. Gallese's theory of liberated embodied simulation implies that when our bodies do appear to our explicit awareness, our embodied simulations of them will be weakened. I argue that as a result of external focalization, not only our absorption into the world onstage will fail, but our ability to perform embodied simulations will be compromised as well.⁵⁷

External focalization sweeps us back into our own bodies, confronting us with the difference between ourselves and the 'other selves'. For example when the young performers make eye contact with us and give us their forced, nearly aggressive smiles, our attention gets focused on the fact that they are performing especially for us, and what we see appears to us as 'theatrical'. Bleeker explains that "(t)hings or people appear as theatrical when our position as observer of a stable and independently existing world is undermined, making us aware of how we are implicated in what we see" (Bleeker 2007). In this thesis

57 Paulo Virno suggests something similar in his book *Multitude: Between innovation and negation* (Virno 2008). In a chapter on mirror neurons, linguistic negation and reciprocal recognition, he argues that while the MNS causes empathy and the experience of sameness, humans are capable of inhibiting this unmediated empathic understanding of others with propositional attitudes: according to Virno verbal language and propositional thought in fact do not empower the simulation that has been accomplished by mirror neurons, but instead disturb and limit the range of simulation: Virno believes that language counteracts upon Gallese's 'we-centered space'.

I follow Bleeker's understanding of theatricality in terms of a destabilization of a stable spectatorship.⁵⁸ External focalization creates the effect of theatricality, and as a result our bodies appear to our explicit awareness.

In everyday life the dynamic nature of our body-maps and the flexible and porous nature of the boundaries between self and other that I have discussed in chapter two usually go unnoticed. In the case of looking at *NATURE* or *NURTURE* however, our sense of having a coherent self with clear boundaries with the world is put under more pressure than usual, as we are embodying multiple subject positions at once that contradict one another. To make matters even more complicated for the brain of the spectator, while there are already multiple internal focalizers addressing the audience at once, external focalizers are disrupting the processes of internal focalization. This theatre performance thus problematizes the performance of embodied simulations on the part of the spectator. As explained in chapter two, we construct our bodily sense of self at the intersection of visual and tactile stimuli, and when the two do not match our sense of having an integrated self can easily fall apart. Because this performance invites us to switch between getting absorbed in the worlds onstage and between 'stepping outside' and being aware of ourselves as spectators at very high speed, the visual stimuli (the bodies we look at onstage) and tactile stimuli (our awareness of our own bodies) presented to us often do not match, putting pressure on our sense of having a unified and separate self.

The experience of being confronted with our own bodies as our locusses of looking is a break with our normal everyday cognitive processes. Our perceptual systems are normally directed towards the outside world and rarely towards our experience of our bodies. I argue that while external focalization destabilizes a steady spectatorship, it also causes a disturbance in the automatic nature of our processes of perceiving and understanding what we perceive through simulation. The explicit awareness of our bodies and of ourselves as spectators is what happens when the mechanisms of the theatrical apparatus as a 'vision machine' are brought to our awareness. The effect is theatricality, as a kind of malfunction in the illusion of

58 Bleeker defines theatricality not as a characteristic of the thing seen, but as something that emerges in the relation between the one seeing and what is seen. As Bleeker formulates it: "Theatricality as a communicative affect emerging from the interaction between spectators and what they see denotes the uncanny moment when the distinction between reality and fiction suddenly ceases to be self-evident. Not because what is real is unmasked as false, nor because anything goes and the distinction has become meaningless, but rather because we are confronted with the assumptions at work in how we make our distinctions between the two" (Bleeker 2007, italics in the original).

Interestingly, as soon as we reject that which appears to us as theatrical as 'mere theatre', the destabilization of a steady spectatorship that theatricality causes is neutralized because this rejection implies that it is still possible to see things as they really are elsewhere. Bleeker discusses how the opposition between theatricality and 'the real' that is embedded in the Western myth of objectivity works to sabotage the power that theatricality can have to reveal that what we think is real and true depends upon our subjective point of view: "According to Freedman, theatricality indicated a destabilization of the relationship between someone seeing and what is seen, because its emergence highlights the relationship between them. As a result, what is seen may appear to be false, inauthentic. However, this falseness is not the opposite of truth or authenticity. Rather, this falsity is the result of the failure to convince as true or authentic, because our conceptions of truth and authenticity and of what is real do not allow reality, truth and authenticity to depend upon a subjective point of view. This is what makes the attempt to define theatricality in opposition to another term such a complicated undertaking. When trying to grasp the implications and complications of theatricality, the issue is not what could or would be its other, but how theatricality emerges from the destabilization of the binary oppositions that structure and shape the 'dominant fiction' (Silverman) that is our reality. This can inspire critical thinking but it may also evoke reactionary responses. Actually, the attempt to oppose theatricality to what it is not, may itself be understood as an attempt to neutralize the threat posed by theatricality, by incorporating theatricality within this very system of binary oppositions that is questioned by its appearance" (Bleeker 2007).

looking objectively at passive objects. The fact that the children look at us creates such a malfunction, and furthermore the fact that they can see that we are all adults makes our position as bodies looking especially problematic. Notwithstanding the fact that our minds are all connected in an intersubjective we-central space by mirror neurons, we inevitably become aware that there is a very clear difference between us and them.

blending perceptions in the body of the spectator

Halfway through the play, we have witnessed how the party, that already had a slightly unfriendly undertone, has turned into a real nightmare. As the adults get increasingly drunk, the cracks that reveal an ugly inside covered by a thin layer of civilized smiling and nodding become more obvious. They assault, attack and mock each other. When the plastic baby wakes up and is taken downstairs because it is suddenly afraid of death, the adults wave its questions and worries away, it gets a very inappropriate long kiss from 'uncle Moriah' and is put back to bed. The actors still perform dialogues that fit inside the frame of the party, but they are now shouting many of their texts directly to the audience. Their conversation often concerns how they see themselves, and how they want to be seen by others: Karsten is an artlover, Moriah reveals that he never got over his parents' divorce despite many years of psychoanalysis, and Zoë explains in detail why Dorothy's life is too superficial and empty. We have seen the men touching themselves, grunting and looking into the audience while they lick their lips and while the women laugh hysterically and uncomfortably, and at one point Karsten appears to try to rape Zoë.

During all this, there are still three dramatic situations, each with their own subject position that we can choose to take up. We can take up the position where we 'see' the point of view of the adults and sympathize with their insecurity about their roles as parents and their struggle to keep up appearances. We can take up the point of view of the children who are re-living how their parents failed them, and sympathize with their psychological pain and with their attempt to relate to their parents' misbehavior by re-enacting it. We can also get absorbed in the dramatic situation of the four performers who are aware that they are on a stage and who enjoy playing for us, sympathizing with their joyful and courageous provocation of all that adults usually consider to be suitable behavior for children. In all of these possible subject positions for the viewer, 'stepping inside' involves accepting something which has been staged for us as real and true: whether that which we accept is 'yes, it is painful for these adults that they have lost their childhood innocence and authenticity and do not know how to relate to their own children', or 'yes, it is painful for these children that their parents have failed them', or 'yes: these child performers are strong and competent individuals who understand what they are performing tonight, and they enjoy provoking us.'

We are receiving complicated mixtures of points of view and conflicting and incoherent information through all our senses simultaneously. We have been asked to embody inauthentic adults as well as vulnerable children, and we are living this opposition in the moment rather than contemplating it with a disembodied mind. While we are looking at 'real children' onstage, we are at the same time embodying the

adult characters that in their conversations express their conflicted feelings towards their own children and discuss their inner feelings with each other. When Moriah confesses to Zoë that, despite many years of therapy, he never recovered from the damage done by his parents' bad marriage, we only receive this information through language. As I have explained earlier, we use simulation not only to understand visual perception, but also to understand language. And furthermore, when we imagine the situation Moriah describes, our imagination of him as a child of fighting parents is embodied through imaginative simulation: as explained in chapter two imagining and doing use a shared neural substrate, and from the point of view of embodied cognition "(t)he borders between real and fictional worlds is more blurred than we would expect" (Gallese 2011).

We are embodying the adults we see through perceptual simulation, and the way they feel about their children and their 'inner child' through imaginative simulation. At the same time we are embodying the bodily and emotional states of the children. And in addition we are embodying our own sensations as an audience that is positioned in opposition to children that look at us and that try to make us feel uncomfortable. What the experiences of all of these simulations that we are performing share, is that they all involve a situation wherein childhood innocence is under attack from adult fakeness and inauthenticity. Thus, the rhetoric of this performance has persuasive power because the misbehaving adults and the vulnerable children onstage are joined in the body of the spectator.

The different embodied simulations that come together in the body of the spectator allow us to conflate the children (both the children who are re-enacting their parents, and the 'real children' performing for us in the third dramatic situation) with the 'inner child' or the 'child in the past' of the adults in the second dramatic situation, and blend them into one mental space. The view that adults who are inauthentic have lost contact with their 'inner child' is being blended with the view that adults hurt their own actual children: the adults onstage are harming their own authentic 'inner child' *and* they are mistreating the plastic babies that represent their children. At the same time the children who are re-enacting their parents' behavior have been hurt by what they must have witnessed earlier, and they are also being hurt now by their own re-enactment. In addition, we viewers are being persuaded to think of ourselves as of the inauthentic adults onstage, because the power relation between the four adults onstage and their own (plastic) children is similar to the way we as an audience are positioned in relation to the child performers.

In the imaginative simulations in our brains, we can conflate the vulnerable children onstage with the children that we know in our own daily lives as adults (such as our own children), but we can also conflate them with our own 'inner child' or the child we were ourselves in the past. Meanwhile, when we embody being the misbehaving adults, we experience through simulation what it is like to be the agents who are attacking and hurting children - our own children at home, as well as the child we once were that is now our 'authentic inner core' so to say, and thirdly the real children that are performing for us and that stare back at us. We are likely to be experiencing a situation in which we harm all of those children, and wherein we ourselves are being harmed as well in the process. The coming together of the conflicting subject positions that we are embodying in this case appears to be designed to increase our sense of personal involvement and agency in what we see. Meanwhile over the course of the performance we are passively

observing how the children onstage are losing their own integrity and dangerously heading towards adult inauthenticity themselves. Mixed with sense of agency that the simulations we are performing are giving us, the situation seems to beg that we run to their rescue (or is it our own?) before it is too late.

4.2 childhood and containment

"There are hundreds of primary metaphors. Together these metaphors provide subjective experience with extremely rich inferential structure, imagery, and qualitative 'feel,' when the networks for subjective experience and the sensorimotor networks neurally connected to them are coactivated" (Gallese and Lakoff 1999, p. 59).

Twenty minutes into the performance we have gotten to know the four adults a bit better. We know that Dorothy is very concerned that her dress might make her look fat, and that she hardly eats, for which she compensates by consuming large amounts of alcohol. We know that her husband, played by actress Moriah with a fake mustache, has decided that he will from now on be completely honest about everything all the time, so that people immediately know who he is and what he is about. We have also learned that when husband Moriah is completely open this mostly involves openly expressing his sexual interest for Zoë as well as for several members of the audience. We know that Karsten is a proud fan of Jeff Koons, who he thinks is grossly underestimated. And we know that Zoë is concerned that her husband will work himself to death if he doesn't slow down, and that she constantly worries that the children might overhear their conversations.

Their party is interrupted when the jazz music suddenly stops and a photograph is projected on the back wall of the theatre. It is a picture of actress Zoë. We see her somewhere outdoors, and she does not look like the smoking and drinking adult we see onstage, nor like the innocent bambi-eyed child we have seen in a white pyjama, nor like the young actress that has been provocatively looking into the audience. This must be Zoë as she really is. The performers turn their heads to look at the picture and fall silent. After a long and uncomfortable silence Zoë says very slowly: "That must be me ... when I was ... about twelve years old. I think. I am not sure."

traces of the real

We can see *NATURE* or *NURTURE* as providing three dramatic frames that encapsule each other - the frame of the adults having their party, that fits inside the frame of children who re-enact their parents' party, that fits inside the frame of four children performing for an adult audience inside the theatre. Each frame has its own point of view; its own ideal viewing position that will give the viewer an illusion of immediacy and of a truthful representation of the real. The moment that this photograph of the 'real' Zoë is projected is discontinuous with the logic of all three points of view. Within the frame of the adult party, Zoë's response

("That must be me when I was twelve years old.") is consistent with her adult character, but the picture is a break with the realistic logic of this frame and a strong sign of an external focalizer: an external agent who reminds us that what we see is not 'just there to be seen' but has been deliberately staged for us. Within the situation of four children who are re-enacting their parents' behavior, it does not make sense that they would be shocked by a picture of themselves at their current age. This moment also is a break in the logic of the situation of four young performers that look at us and that are aware that they are performing *NATURE or NURTURE* for us this evening, as the performers are so completely absorbed in the picture that they forget the audience, implying that they are characters in a stageworld and not aware that they are performing in a theatre building this evening.

The picture is another external focalizer, but as such it is ambiguous. It functions as an anonymous agent that is telling us that everything that we have seen so far is theatre, but it is also showing us that outside of the theatre building, outside of all the frames that we have seen here inside this black-box theatre, there is a real world where we can see Zoë as she really is. Theatricality can be used to evoke reflection on the way that we construct the real, but in postdramatic theatre it is also used to create an illusion of real unmediated presence. The suggestion that we can now see Zoë 'as she really is' is confirming the illusion of a disembodied I/eye looking at passive objects as they really are. It is significant that a very different external focalizer - the eye contact with the performers - is absent from this scene, because this means that we are cognitively speaking presented with coherent stimuli that we can simulate, free from the obstacle to simulation that this eye contact forms. So while theatricality is being highlighted and the illusion of dramatic theatre is being attacked, the illusion of the real existing elsewhere is being safeguarded at the same time, and our perceptual and cognitive processes are left undisturbed.

In the picture we see the sky, and Zoë looks spontaneous and fun. The world outside the theatre looks appealing and idyllic, and much more wholesome than the worlds that we find ourselves in inside this theatre. The real world outside the theatre is out of our reach (this is just a picture of it), but it is clearly a better place than where we are now. Meanwhile the performers do not look at us in this scene. They look at each other, and then avoid each other by looking at the floor and fiddling with their jewelry. Their acting style is suddenly very realistic: they seem genuinely upset. The performers are not looking at us, which means we are free to perform liberated embodied simulations of their emotional states. Regardless of the dramatic frame that we choose, all four performers are being consistent in their emotions: they are clearly feeling ashamed, sad, hurt and insecure. Their bodily movements are not directed towards each other or to the audience but towards themselves, as if they are trying to protect and comfort themselves. Visually, the audience is presented with a coherent set of bodily movements and emotional states to mirror, and the viewer is offered a way to join the confusing mixture of points of view we have dealt with so far into one unifying interpretation.

The scene seems to reveal that the outward behavior of the characters onstage is inconsistent with their inner feelings. Inside the frame of the adult party we could say that this scene reveals that the outwardly directed social behavior of the four adults is fake (or 'theatrical'), and that their true inner selves are afraid

and desire to go back to their lost childhood. We get a glimpse of their past, and of the psychological pain that is hidden beneath the facade of being ostentatiously confident, art-loving, sexually liberated and successful. The outside behavior of the children that are re-enacting a party is fake too: they appeared to enjoy pretending to be adults (and mocking them), but this scene exposes that deep inside they fear their own adult future. The sudden change to a realistic acting style, and the fact that the performers do not look at us anymore, even allows us to understand the provocative looks we have been suffering in the third frame in a new light: this frame may have been giving us a view of children as surprisingly capable and confident actors who enjoy provoking and unsettling their audience, but deep inside they are hurt, confused, and a little helpless. The characters in all three dramatic situations now appear to be suffering from the very same wound: childhood innocence that is being compromised and violated by inauthentic and irresponsible adult behavior. While this performance has so far put the question what is real and what is fake before us, challenging us 'choose the right perspective' so to speak, this scene seems to promise that there is a real world out there after all. We just can't reach it because we are all trapped inside a theatre.

The logic of this scene entails that we are invited to sympathize with the children and to accept them as 'real' now that they are looking pure and innocent and very afraid of losing their authenticity, but to fail to sympathize with them and reject their performance as unnatural when they were enjoying demonstrating their knowledge of the dark sides of adult life to us. Therewith the scene reconfirms that the real and true childhood is innocent and unknowing while the knowing and capable child we had seen before is 'mere theatre'. The external focalizer in this scene is designed to persuade us to reject the view of capable, confident and knowing children as 'mere theatre' and to sympathize with children who are helpless, confused and fragile, therewith confirming a rather conservative view on childhood. This scene is also confirming the view on the self as consisting of a psychological interiority that stands in opposition to a corporeal exteriority, which as I have discussed in chapter one is a logic that shared its ground with the object immanent view on visibility that characterizes the scopic regime of Western modernity. It is thus providing an example of how the notion of a psychological interiority that stands in opposition to a bodily exteriority in how we understand the self, is linked to absorption and theatricality as opposing forces in the theatrical apparatus.

What is at stake in *NATURE or NURTURE* is what we are willing to recognize as how children 'really are' and what not; how we define by the standards by which they will be measured. While this performance from the very beginning appears to be intended to draw our attention to the way vision is instrumental in constructing both selfhood and childhood, this scene does quite the opposite: it suggests that we can take the theatre away to get a glimpse of a real that is outside of this theatre, beyond our reach but still out there. While *NATURE or NURTURE* uses strategies of deconstructing drama and therewith destabilizing perception, this scene paradoxically confirms drama's logic of opposing theatricality to the real. Therewith it confirms the visual essentialism typical of the modern Western scopic regime, placing childhood firmly inside this culturally and historically specific understanding of vision (as a matter of a disembodied eye/I looking at things 'as they really are') and of the self (as a coherent unity that stands in opposition to the body). By inviting us to sympathize with childhood innocence (which at the same time stands for the

psychological interiority of the adults) and to reject adulthood as a kind of corporeal exteriority (associated here with carefully trained falseness and superficial social conventions) as mere theatre, this scene appears to be subjected to the very logic that this performance as a whole appeared to criticize. While what happens in the theatre can be great fun, if we want something real we can find it elsewhere, it seems to say.

conceptual metaphors

If we understand the photograph of Zoë as a sign that while everything we have seen onstage has been fake, we are finally being offered a glimpse of the real, this understanding involves ascribing to very specific conceptualizations of childhood as well as of the adult self. As I have argued in chapter three, our understanding of the adult self and of childhood depend upon each other. Our conceptualization of selfhood involves the understanding that the self is, or should be, separate, unified, and coherent, and it places the body in opposition to the self and social connectedness in opposition to the integrity of the self. Our conceptualization of childhood involves concepts such as authenticity, innocence, simplicity, dependance, helplessness and nostalgia for the (imagined) past. All of these concepts are embodied in sensorimotor structures in the brain. The way these concepts are embodied is in metaphorical mappings.

As I have explained in chapter two, humans use basic image schemas and primary metaphors thousands of times a day to make sense of the world. Gallese and Lakoff explain in their neural theory of conceptual metaphor that "(e)ach conceptual metaphor is a mapping across conceptual domains, from a (typically) sensory-motor source domain to a (typically) non-sensory-motor target domain" (Gallese and Lakoff 2005, p. 15). We use the sensorimotor system for abstract reasoning even when this reasoning is not directly about a sensorimotor activity, and in the brain the activation patterns of the sensorimotor system that characterize conceptual meanings are projected to higher-level cortical areas (Gallese and Lakoff 2005, and Johnson and Lakoff 1999, p. 77). Bruce McConachie argues that the situation of seeing a theatre performance however is different from everyday life, as performances tend to be "(...) 'condensational events' in which certain primary metaphors, condensed from cultural historical interaction, emerge as significant" (McConachie 2001, p. 583). Those schemas and primary metaphors that recur with regularity can shape and constitute the experience that we have of seeing a performance. *NATURE or NURTURE* is such a condensational event, and the question is which basic schemas predominantly shape the experience of seeing it.

In the case of *NATURE or NURTURE*, I argue that while understanding this performance naturally involves many more image schemas, faced with the stimuli this particular performance provides the spectator is likely to predominantly use the image schema of *CONTAINMENT*, and that it is this schema that forms the 'cognitive scaffolding' of the embodied act of looking at this performance and making sense of it. While it is possible that for example the schemas of the 'force' group of *COMPLUSION* and *COUNTERFORCE* also shape an important part of the experience of this performance – the performers move their bodies with counterforce and compulsion, which should be embodied in the observer through

simulation, which in turn suggests that these schemas could be especially active as well – I will focus on the role that the schema of CONTAINMENT plays in the corporeal experience and the emergent meaning of *NATURE* or *NURTURE*.

containment

The image schema CONTAINMENT rises from the early childhood experience of having an inside and outside to one's body. CONTAINMENT has build-in spatial logics that arise out of its structure in the brain, and it consists of a container that has an inside, and outside and a boundary. The physical boundaries of containers can impose forceful and visual constraints: it can protect the content in the inside, restrict its motion, and render it inaccessible to vision (Gallese and Lakoff 1999, p. 32). As all schemas it is multimodal, which means that we can impose it conceptually on a visual scene, on something we hear, on our own movements, and more. Marc Johnson describes the properties that characterize the schema of CONTAINMENT in his book *The Body in Mind* (1987):

(i) The experience of containment typically involves protection from, or resistance to, external forces. When eyeglasses are in a case, they are protected against forceful impacts.

(ii) Containment also limits and restricts forces within the container. When I am in a room or in a jacket, I am restrained in my forceful movements.

(iii) Because of this restraint of forces, the contained object gets a relatively fixity of location. For example, the fish gets located in the fishbowl. The cup is held in the hand.

(iv) This relative fixity of location within the container means that the contained object becomes either accessible or inaccessible to the observer. It is either held so that it can be observed or else the container itself blocks or hides the object from view.

(v) Finally, we experience transitivity in containment. If B is in A, than whatever is in B is also in A. If I am in my bed and my bed is in my room, then I am also in my room"

(Johnson 1987, p. 22).

The bodily experiences that we have when we perform the embodied act of looking as I have described them in 4.1 are structured in a way that matches with the inside-outside logic that characterizes the image schema of CONTAINMENT. In terms of embodied experience, this performance consists of an array of containers. The world onstage is a container that the audience is clearly positioned *outside* of, but that we can *enter* when we get absorbed. As such the stageworld also locks the characters onstage *in*. We are drawn *into* the stage world when we get absorbed, but we are projected *out* of it when theatricality reminds us that it is all staged. The entire theatre space is a container that *separates* us all from the real world *outside* (the world that we are given a taste of when we see the photograph of the 'real Zoë'), making the real world *inaccessible*

to us viewers as well as to the performers onstage. During the play Moriah and Karsten enter the stage through a hole in a painting in the wall and through a crack in the couch: they *permeate the boundaries* of the 'container' that is the world onstage and *invade* it. The adult characters function as containers that *hide* (and *protect*) their true inner selves. The 'inner child' is *hidden inside* the adults, and can only be seen when the *surface* of the adults *cracks*. The *ugly outside* of the adults protects them: at those moments in the performance when we are allowed to see their *vulnerable insides*, they immediately get *attacked, murdered or raped*. The children who are re-enacting their parent's party are also containers themselves that are *vulnerable* to the *impact* of the adult world which will *compromise their integrity* and hurt them. And the young performers who insist on making eye contact with the audience *pierce the boundaries* that would normally allow us to be *safely outside* of the world onstage.

We do not understand all these containers as such because we think about them with our disembodied minds, we understand them as such because the structures we perceive and understand them with relate directly to our own experience of having an inside and an outside to our own bodies. So the idea is not that we as viewers choose to use the structure of the schema CONTAINMENT to understand most of this performance because after some propositional reasoning we decide that it fits what we see. The 'containers' present in *NATURE or NURTURE* do not behave like signs onstage that represent something. Instead, through the involuntary and automatic simulations that I have described in part 4.1, the spectator is already embodying several experiences of containing and being contained at the level of the cognitive unconscious, and in the emergent levels of meaning brought about by those processes CONTAINMENT becomes the schema that structures our understanding of what we see. As explained in chapter two, the neurological structures in the sensorimotor system of the brains that we 'borrow' for conceptual reasoning and that thus provide the source domains of conceptual metaphors simultaneously retain their original functions of processing senses and movements, which means that abstract thought and sensorimotor experience continuously impact one another in real time. I argue that while different spectators may be feeling different sensations during this performance, this performance is constantly pushing us to experience the sensorimotor qualities and characteristics that correspond to CONTAINMENT, and that it therefore forms the grounding aspect of our unconscious corporeal experience of looking at *NATURE or NURTURE*.

containment and our construction of theatre and of the real

As I have argued in chapter two, certain basis schemas may organize multiple domains in a culture. I argue that CONTAINMENT grounds a large amount of primary and complex metaphors that underlie our understanding of the self as a separate and coherent unity that holds a vulnerable essence, of the split between a corporeal outside and a psychological inside, of childhood as vulnerable, innocent and as constitutive of the adult self, and of the object-immanent understanding of visuality as a matter of looking objectively at things as they really are that is typical of the scopic regime of Western modernity.

Bruce McConachie argues that the Cartesian worldview that organizes a world in which

people believe they can gaze objectively at passive objects is founded on the concepts of CONTAINMENT, CENTER-PERIPHERY, and NEAR-FAR (McConachie 2001, p. 587). Following McConachie the West has developed a means of transforming the assumptions of Cartesian philosophy into the theatre viewing experience with the positioning of the audience developed from the perspectivism of renaissance painting. He identifies the image schema CONTAINMENT as a founding aspect of the spatial organization of the conventional theatre space, and of the inside-outside logic of the conventions of dramatic theatre.

According to Maaïke Bleeker, theatre and reality can be seen as two parallel constructions: theatre stages a mode of looking that is paradigmatic of how we construct the real.⁵⁹ The image schema CONTAINMENT gives our conceptual understanding of the construction of drama some of its specific properties, and in addition (whether or not we experience this on a conscious level) adds a qualitative feel to it. For example, the blackbox-theatre in which we look at *NATURE* or *NURTURE* is literally shaped like a container that holds an imagined world, and that gives this world a relative fixity of location so that we can look at it and so that it appears to exist independently from us.

This does not mean that every performance in the theatre predominantly rests on the logic of the containment-schema. *NATURE* or *NURTURE* however places emphasis on the logic behind the conventions of dramatic theatre by positioning us safely outside the world onstage at one moment and causing disturbances to our illusion of looking through a 'finestra aperta' at the next, highlighting the containers that shape the experience by pushing and piercing the boundaries between inside and outside.

containment and the self

As I have argued in chapter one and three, the logic with which we construct the theatre is the same logic through which we create and conceptualize selfhood and identity. This is a logic that privileges vision over the other senses, marks the body as 'other' to the self, and imposes a split between a psychological interiority and a corporeal exteriority. Furthermore, while Western culture holds an independent rather than an interdependent conceptualization of self, recent changes cause anxieties concerning the vulnerability and authenticity of the self. The self is thus conceptualized as having an essence that is being held by a boundary that is vulnerable to attacks from outside that can compromise the integrity of the essence.⁶⁰ This line of

59 Bleeker argues that "(...) the theatrical apparatus as 'vision machine' stages ways of looking that respond to a particular culturally and historically specific spectator consciousness" (Bleeker 2008, p. 9). Theatre and reality can be seen as two parallel constructions: theatre stages a mode of looking that is also constitutive of how we construct the real.

60 Johnson and Lakoff identify various image schemas that underlie endless primary metaphors concerning the self, so CONTAINMENT is certainly not the only source domain available to us. They identify the image schema of CONTAINMENT as the grounding schema underlying a series of conceptual metaphors that concern the ideas of a having a true self that is hidden inside a false self, a person losing contact with their true self or hiding it from others, a person not being able to be their real self and many more (Johnson and Lakoff 1999, pp. 267 - 289).

McConachie too identifies the image schema of CONTAINMENT as significantly shaping conceptions of the self in the America of the 1950s. He argues that "(...) CONTAINMENT was as ubiquitous in the dominant culture of cold war America as was the spacial relations schema of BALANCE in the culture of Enlightenment France" (McConachie 2001, p. 586). He supports his analysis by pointing out that in the America of the 1950s anxieties were expressed that advertising could pierce the boundaries of a vulnerable self to inject it with false values, and that in the practice of psychoanalysis dreams were analyzed in a search for that which is hidden inside the self (McConachie 2001, p. 586). In both examples the self is conceptualized as a container that can protect an inside from

thinking depends on the primary metaphor *the self is a container* and the complex metaphor *the subject is in the self* (Johnson and Lakoff 1999, p. 269). Selfhood and childhood mutually define each other, and childhood in all this is defined as contained within the (adult) self, while it is also conceptualized as a container itself: childhood too is vulnerable to invasion from the outer world, and if its boundaries are pierced its purity is compromised. What makes the experience of looking at this performance different from the experience of thinking about selfhood and childhood while sitting in a chair and reading about it, is that the embodied simulations that we are performing are already forcing the bodily experience of being contained in our bodies, of being contained in the theatre, and of the boundaries that separate our inside from an outside being pushed, shaken and pierced onto the viewer. This means that this source domain is not passively awaiting to be borrowed for higher level cognition but is already active, and that it is being activated in a very specific manner. What cognitive science reveals here, is that the meaning that the containment of the self and of childhood have in this performance is influenced by our corporeal experience of being destabilized and of boundaries being pushed and pierced. When we are conceptually understanding selfhood and childhood through CONTAINMENT, this does not necessarily have to lead us to think of it as fragile or as under threat. It is through our bodily experiences that emphasis is being placed on the vulnerability of the container and on the possibility of an attack from outside. Visually and aesthetically director Alexandra Broeder could have composed the performance in a way that presents a container as a stable and solid thing that gives us a feeling of fixity and protection. She chose not to.

If we look at the dramaturgical strategies of this performance through the lens of the image schema of CONTAINMENT, it becomes clearer why this performance would have the power to make the viewer feel unsettled, shaken and basically unsafe – as is reported for example in many reviews. We are performing the act of looking at this performance with brains that have been encultured to think of ourselves as containers that hold an essence that we can in some situations define as an 'inner child', and of childhood as a fragile essence inside a container that needs protection. We are conditioned to perceive ourselves as vulnerable to forceful impacts from outside, and to be worried that our integrity may be compromised. If we are defining our own inner essence as analogous to a more authentic and simple child we were once ourselves, than a crisis of childhood innocence in our culture does not only concern how we see children, but also how we see ourselves. *NATURE* or *NURTURE* manages to capture the fears that the change from the 'cute' to the 'cool' child (Cross) is causing and the discomfort that it is causing adult who no longer know how to deal with children, and to make the most of those fears. *NATURE* or *NURTURE* effectively moves us around, shakes up our body-maps, destabilizes perception and engages our bodies and our brains to simulate the physical experience of the containers that are our bodies being manipulated, pushed and attacked, and at the same time it attacks the boundaries of a set of ideas that we understand through their correlation with our experience of being a container. While the set of containers that make up the experience of looking at dramatic theatre protects the viewer from forceful impacts from outside – in exactly the same way that our skin protects our insides from the outside world – in this case the containers that are supposed safeguard the illusion of a view 'as if from nowhere' onto things 'as they really are in themselves' are being

the outside, that can obscure what is inside, and that has boundaries that can be pierced.

permeated and invaded while we are also confronted with a larger container – that of the theatrebuilding – that is now locking us inside. In short: we are under attack and there is nowhere to run.

The grown-ups are a little confused.

Near the end of the performance the performers are crawling on the floor as wolves, showing us their teeth and eating party food off the floor. Dorothy crawls over to her plastic baby and says: "This is no place for children. Come here sweetie. The grow-ups are a little confused." And then onstage the telephone rings. Zoë gets back on her feet, picks up the telephone and answers. She looks and sounds normal again, like a child taking a phone call for her parents, and she promises someone on the other line to pass through a message. Then she looks at the audience and says:

Zoë It's almost light. I would say that this party is over....

The party is over and I am taking off my pants!!!

the Others Yes! Pants off! Pants off! Pants off!

(Zoë starts to undo her jumpsuit but then stops and laughs at us.)

Zoë No, it was just a joke! I saw you all get frightened. You thought 'Oh no, she might actually do this! And then what should we do? Should we intervene? Yes or no, yes or no, yes or no???' I'm going to exit now! Bye!

(She exits and immediately comes running back onstage)

.... Ooooooh! I am back already!

In this last scene Zoë and the other three performers look and sounds differently. The manic smiles are gone, and instead they giggle, they laugh, they address us directly, and they seem to find us hilarious. Then another photograph is projected on the back wall: a picture of actress Moriah riding a horse. Instead of being startled by the picture like before, this time they all seem rather annoyed with it. Moriah yells out: "By the way, who is putting those fucking photo's up there? Do they want us to go nuts or something?" Karsten gets off the stage and climbs right through the audience to check out the control room. He yells down at the other three "Hé, there is nobody in here!". We are looking at the same external focalizer as in the scene described before - a photograph of actor Karsten outside the theatre. This time however the performers are not shocked, and no hidden inner feelings come to the surface. Instead the external focalizer that we may have accepted as a trace of the real the first time we saw a photograph is now exposed as being 'mere theatre' too. The illusion we may have been holding on to of the real existing somewhere else (maybe hidden deep inside ourselves, maybe somewhere outside the theatre), and with it our postdramatic fascination with an undoing of the dramatic frame, is now too being torn to pieces, as much as the illusion of drama had been deconstructed before. This final scene deconstructs the illusions associated with postdramatic theatre and with the postmodern fascination with a deconstruction of the modern Western

worldview, and we discover that all that we have been willing to be absorbed in was in fact theatre. But rather than - as Maaïke Bleeker would put it - saving us the Brechtian way by taking away the theatre to uncover the real (Bleeker 2007), this scene presents theatricality as something that cannot be deconstructed or left behind. The last scene confronts us with the possibility that we may never be able to leave our perceiving bodies behind and 'step inside'. And worse: for a moment it remains unclear if we will be able to leave the theatre.

The performers announce to us that they will exit and they do, but they immediately come back onstage. Zoë walks up to the audience, roaring with laughter, and asks us:

Zoë There is just one thing I would really like to know from you. Otherwise, I won't be able to sleep tonight.
Was I good?
Did I do alright this evening?
I mean, was I, like, 'worth your while'?

Then Moriah yells at the audience: "Hey, do you all remember this one?", and the actors start to repeat a scene that we have already seen before. It is the one in which the Dorothy fell out of adult-character because their re-enactment had gone too far and she and Moriah were afraid and wanted to 'stop playing'. Bear in mind that they originally played this scene in a realistic way, inviting us to sympathize with their distress. They repeat this entire scene in fast forward, and they all burst out in laughter when they look at us again. Moriah starts to break down the stage setting and waves the huge red and white pillars around. Suddenly they form a little group and sing a very fast version of *So long, Farewell* from the Sound of Music. They exit again, and when they come back they stand still before the audience and cry loudly. Karsten holds out his arms to the audience and begs: "Can anyone comfort us?" They burst out in laughter, they exit and immediately come back again. They keep announcing that they are going to stop, but they never do. They pour another drink, light another cigarette, they ignore our applause, and they keep observing us while we eventually decide to leave the theatre.

So far the theatrebuilding may have felt like a container that (mostly) places us outside of an onstage world. But the way the children run around, going in circles by crossing the stage, exiting, running around backstage and entering the stage again from the other side, and then running up the stairs in the auditorium next to us and even behind us changes the shape of the theatre-container. The children take over the entire building, which means that we are now definitely inside their world while they are tearing it down.

By playing into the way we are culturally conditioned to experience ourselves, the act of looking, and childhood, *NATURE* or *NUTURE* offers us an experience in which all of these constructs are threatened, our bodily boundaries are shaken up, and we are made to feel as fragile and compromised as the childhood that we have been lured into accepting as 'real' and 'true'. The performing children in the meantime are having great fun. We took what is a staged relationship between adulthood and childhood for

real and true, and they knew we would. This is – so it seems - the ultimate pleasure of the ‘cute but cool’ child (Cross): understanding how the carpet of adult securities on how things really are is woven, and then pulling that carpet out from under their feet. I went into this performance thinking I was a cultured adult, clever and postmodern enough to know to look for the ugly truth behind any unproblematic representation of childhood, and expecting to be ‘saved the Brechtian way’ (Bleeker). *NATURE or NURTURE* exposed my cultural sophistication as something rather predictable. As the children stood there pointing at me and laughing loudly at my confusion, I couldn’t help but wonder if maybe the horrible influences of nurture on their pristine and pure natures was a product of my imagination, and if it could be that these children do not have a problem with regard to their identity or authenticity at all. Apparently that was all me.

Conclusion

"We are never sure of what we do. That's why it's called research. Because we don't know the answer."

theoretical physicist Alvaro de Rújula⁶¹

The text you have just read was my attempt to create a dialogue between bits of knowledge from the humanities and bits of knowledge from science. One of the things I discovered during my search for ways to use cognitive science within theatre studies was that science and the humanities are thought of as two realms that oppose each other, and that combining them is not necessarily a widely accepted move. One of the things that appear to make communication between the two fields difficult is the perception that science deals with valid truth claims while the humanities deal with 'speculation', wherein as Amy Cook so eloquently puts it, "if its not science, its gobbledygook" (Cook 2010, p. 18).

While the theories I have used from the field of cognitive science are founded on relatively stable knowledge as they are supported by substantial amounts of evidence, they are all still to be tested further. They may be adapted, added to, or replaced completely in the future. This means that the elements that make the results of my research unsure come from the fields of science and the humanities alike. Looking back at the debates that surround the cognitive turn in theatre and performance studies, this seems to counter the position in those debates of Elizabeth Hart and Bruce McConachie's *Theatre and Performance: Theatre studies and the cognitive turn* (2008) - probably the most important volume with regard to the cognitive turn in performance studies at this moment. By arguing that cognitive science forces us to rethink our own theories, and demonstrating which theories should be adapted, completely abandoned or left intact after checking with cognitive science if they are correct or not, Hart and McConachie appear to present the interdisciplinary research as a one-way stream whereby information gets sent from science to us, and whereby 'they' know how things really are and 'we' adjust our work to match their findings. While I absolutely share Hart and McConachie's enthusiasm for the possibilities that the cognitive turn promises in the future, I have my reservations with regard to the way they position science and the humanities in opposition to each other.

Cognitive science has arrived at the conclusion that nature is not the passive background upon which the cultural takes place, but instead that it is in our nature to be cultural beings, and that culture to some extent shapes and changes our biology. If cognitive scientists have come to conclude that our social and cultural environments shape and change our brains and bodies, it seems likely that questions have risen in the field of cognitive science with regard to that culture that can be answered with the knowledge that is being produced in the humanities. An interesting question for the future is how we can produce knowledge

61 In *HIGGS - Into the Heart of Imagination*, a documentary by Hannie van den Bergh and Jan van den Berg, 2012.

that is relevant to those 'on the other side of the fence', and how we can communicate this knowledge in a way that makes interdisciplinary work possible. As it is apparently in our nature to create cultures that constantly impact upon our biology I would say that science and the humanities have quite some catching up to do. In this thesis, the paradigm of embodied cognition and Maaïke Bleeker's dissection of visuality complement each other, each filling in the spaces of knowledge that the other leaves open. Therefore I would say that theatre studies already has developed a body of knowledge with regard to perception and the way that we construct 'the real' that is interesting to cognitive scientists who are on the quest for the nature of human minding. However it is not my place to assess how the work done by theatre and performance scholars can be useful to cognitive scientists, as I am an amateur when it comes to cognitive science. In that sense the line of communication in my own thesis was also a one-way stream whereby I have tried as much as I can to implement embodied cognition in a theory on the embodied act of looking. An interesting next step would be to actually talk with cognitive scientists about the possibilities of using each other's expertise. While our colleagues in for example the field of literature have already started some conversations between the two fields, I am excited to see whether we can have some mutually fruitful dialogues with the folks on the other side of the fence as well. I would say that the possibility of more communication between theatre and performance studies and cognitive science holds the promise of many communicative difficulties but also of great fun.

My process of writing this thesis started with a very simple question. Looking at *NATURE or NURTURE* was somehow a strong physical experience for me, and I did not understand why. I wanted to understand how this performance became meaningful to me, and how my body was involved in creating that meaning. My aim was to answer the question what the paradigm of embodied cognition within cognitive science can add to an understanding of the embodied act of looking in theatre studies, and my approach was to answer the more practical research question how the corporeal experience of the spectator related to meaning-making in the embodied act of looking at performance *NATURE or NURTURE*. Inspired by Maaïke Bleeker's *Visuality in the Theatre* (2008) and by a sudden and unexpected love for cognitive science, I set out with the aim to show what Bleeker's theory can add to the research on cognitive aspects of theatre spectatorship, and at the same time to provide an addition to Bleeker's relational approach to visuality in the theatre by turning to cognitive science. In addition I aimed to demonstrate how cognitive science can be used to inscribe a particular theatre performance in the social and cultural context that is relevant to the embodied act of looking at it, positioning myself against the idea that a purely materialist view in any way involves reducing the mind to neurons and pushing culture out of the equation.

As I have demonstrated in the first chapter, Marc Johnson, George Lakoff and Maaïke Bleeker share the view that the response of a seer to what is seen depends on "(...) how the body has learned to perceive itself and the world around it according to culturally specific parameters, how the body has learned to behave, how it is marked by experience and the address of others" (Bleeker 2008, p. 175). The way that the two elements - Bleeker's relational view on visuality and embodied cognition as represented here in the work of Mark Johnson and George Lakoff - are both valuable to each other is in that Maaïke Bleeker

discusses the culturally specific parameters at hand and the understanding of vision, the world and the self that they impose, while embodied cognition sheds a light onto the specific abilities and mechanisms of learning of this body that is learning to perceive itself and the world according to those parameters. Joining both theories has allowed me to shed a light onto the relation between the theatre as a 'vision machine' and the perceiving subject, and analyze the continuity between the bodily experience of seeing this performance and way it provokes abstract thoughts and opinions. It has allowed me to address the way that the relation between the evolved architectures of our brains and the cultural context that we live our everyday in manifests in theatre performance *NATURE or NURTURE*, and to discuss the connections between the address of this performance to the viewer and the possible response of the viewer.

From the view that meaning is not representational but relational follows that there is a direct relation between the corporeal experience of looking at a performance, and the 'meaning' it generates or the persuasive power it executes. From the theory that abstract conceptual thoughts are characterized by our brain's relations with our body and our bodies' relations with the world follows that in the theatre, the thoughts of us spectators are characterized both by our experiences prior to entering the theatre building and by those that we have during the course of looking at the performance before us. Cognition is a matter of direct contact between system and reality, and when we are looking at a performance we as viewers are all dealing with the same reality, with systems that have to some extent been shaped in reaction to the same world. While individual spectators of *NATURE or NURTURE* will be having different thoughts, a common denominator is that they all create them by dealing with the (embodied) relations between the way this performance is 'pushing' the image schema of CONTAINMENT, the way this schema is structuring others domains in their social and cultural environments, and the properties of this image schema as build in the neuronal structures in our sensorimotor system. Surprisingly, by including the biology of visual perception and meaning-making into my research, what came to the fore was the extent to which our biology is encultured, while it in addition allowed me to understand more precisely *how* culture conditions us to perceive in specific ways. This 'how' has in my opinion been especially fruitful.

Analyzing the way that the conflicts that this performance creates between absorption and theatricality impacts our brains and bodies has made it possible to better understand the way that performing the act of looking in this case makes us feel and move, and this in turn has brought to the fore that this performance specifically and consistently pushes the buttons of our unconscious and automatic processes of perceiving to persuade us to think in terms of containment. On itself the simple assertion that our concept of having (or of something else having) an inside and an outside that are separated by a boundary is embodied in the image schema of CONTAINMENT would be an underwhelming result of going through the trouble of using cognitive science. The surplus value lies in understanding how exactly the image schema of CONTAINMENT is embodied and how it structures our understanding of related concepts, because this makes it possible to explain how the bodily experience we have of CONTAINMENT in this particular viewing experience dictates how we interpret what we see. CMT in this case makes it possible to understand how aesthetic aspects of the performance (the set-design, costumes, the moving bodies and the acting styles, the sounds, and the quality of the relationship between the performers and the audience as it

is being designed and organized by director Alexandra Broeder) play into that schema, strengthening its effects, making the friction between a psychological interior and a corporeal exterior (which is in this case presented as parallel to the friction between child and adult) at once a meaningful abstract question the viewers may be thinking about with what they may experience as their (disembodied) minds, and a corporeal experience of a pushing or permeating of the boundaries of their own self-concepts.

If we indeed build our thoughts and opinions of what we see on the source domain of the subjective experience of containment involuntarily and automatically, then this means that the properties of the schema of CONTAINMENT impose their logic on our conceptual thoughts.⁶² These properties characterize our presuppositions about the self and about childhood, and they also add a 'qualitative feel' to our thoughts. Thinking abstract thoughts that consist of multiple (and probably inconsistent) metaphors that arise from the CONTAINMENT schema engages our experience of having a skin, of the vulnerability of our insides, of our past experiences of this skin being pierced and of it protecting us when it takes the impact of something pushing or hitting us from outside, of the feelings we may have had of being trapped or locked inside ourselves when we find ourselves unable to express what we experience inside on the outside, and of the pain and fear we may have felt when the boundaries between the inside of our bodies and the world are permeated or damaged.

In this thesis using cognitive science has made it possible to disentangle a few of the feedbackloops between the different levels of materiality that give rise to the 'meaning' of this performance for individual spectators. These feedbackloops run between the materiality of our brains and bodies with its muscles contracting or relaxing, its changing heartbeat and temperature and its firing neurons, the materiality of our history of experiences of having an inside and outside to our bodies, the materiality of the social and cultural environments that inform our view on selfhood and childhood (which in turn are re-embodied in the architectures of our encultured brains) and the materiality of that which we see onstage. I would not be able to describe these relations if I would not have taken the time to get into technical neurological details that at first sight might seem a bit far off-topic to a theatre scholar. With regard to further research combining theatre and performance studies with cognitive science, one thing I would recommend is that while we should feel free to cross boundaries between disciplines and construct methods on the fly, we should not be afraid to dig deep into the dry technical details of the research done by cognitive scientists. The gold, so to speak, is not in the general conclusions that cognitive science provides but in the boring neurological mumbojumbo.

⁶² As I have argued, these parts simultaneously retain their original functions, and this means that abstract thought and sensorimotor experience continuously impact one another in real time. This conclusion is susceptible to a criticism that concerns the paradigm of embodied embedded cognition as a whole. The relations I describe here are relevant to what we can call 'thinking' as a purely 'online' activity: as an act that we perform in direct real-time and non-representational couplings with reality, as described in chapters one and two. While embodied cognition rests on the assumption that thinking is indeed an 'online' activity (one in which we continuously consult reality directly, rather than build a representation of reality in our brains to compute with, as classic cognitivism would have it), and has convincingly shown that thinking is indeed a matter of moving and sensing in direct contact with the world, there are also typically 'offline' thoughtprocesses. For example, a random spectator in the theatre may be trying to remember what ingredients he or she has got left in the fridge, and these thoughts may be separate from the real-time experiences she is having with her body of the act of looking at a performance.

language and the body

Alongside the dichotomies of nature and culture, mind and body, self and other, matter and meaning, (psychological) inside and (corporeal) outside that have all been rejoined, turned around, collapsed or blurred in the text you have just read, another opposition that must be questioned and redefined is that between language and the body. If we rejoin aesthetics and meaning (Johnson 2010) this has consequences for how we theorize the relation between language and embodied experience in postdramatic theatre. The idea that verbal language is 'meaningful' and as such stands in opposition to non-verbal sensory input (that can then be understood to defy the concept of meaning or not to be meaningful) makes sense only as long as we define 'meaning' in the traditional disembodied way. If we accept that meaning-making encompasses more than just the conscious level of cognition that can be expressed in language it must be redefined. I would like to emphasize that if we redefine language to fit inside a relational and embodied understanding of meaning, this redefinition is not a matter of reducing all aspects of our corporeal experience to language. While the theories I have used in this thesis to join abstract meaning and physical experience mostly come from the field of cognitive linguistics (and many aspects of CMT are specific to verbal language and therefore not very useful in this respect), I argue that the relation between image schemas, primary metaphors and the subsequent complex metaphors are useful for reconnecting verbal meaning with perceptual experience and aesthetic qualities - not by reducing all perceptual systems to language, but instead by expanding and re-embodiment the notion of language itself.

the embodied mind and 'intuition'

Another separation that I would like to address is that between the content and form of theatre performances as they are sometimes conceptualized in practices of theatre making. A consequence of the embodiment of the mind is that the corporeal experiences that we have of the aesthetic qualities of a theatre performance, such as the stage-setting, acting styles, spatial relations, the timing, rhythm, sounds and colors of what we see, are not located somewhere 'underneath' or 'before' our minds, and not somewhere 'outside' our thoughtprocesses. They are *of* our minds, as the processes that give structure and shape to what we think on a conscious level. In the same way, the processes of absorption and theatricality in the case of *NATURE* or *NURTURE* are more than just strategies of staging or different modes of storytelling. They are not just the 'form' that director Alexandra Broeder happened to give to a 'content' that she is communicating. When we redefine meaning as being relational and embodied rather than representational and disembodied, the form and the content of a theatre performance are never two separate things. The continuity in our bodies between sensing, moving and abstract meaning-making, and the redefinition of 'meaning' as a multi-level process that encompasses our abstract thoughts as well as our experience of our bodies in the world, might be of value when applied to research into processes of theatre-making, and into the skills developed by theatremakers and the way they make aesthetic choices.

When a theatre director is choosing between putting her performers in shiny latex costumes or in chunky woolen knits, the choice is not just a matter of taste. I would say that theatre makers usually know very well that these choices partly determine what it will all 'mean' to the viewer. They may not always put that knowledge into words. Instead they may try something, look at it, and then turn to each other to say 'this works', or 'this does not work.' We sometimes call this skill 'intuition'. And although we know it is developed through training and experience it is surrounded by an air of mystery, which makes sense once we understand that it largely relies on processes in our cognitive unconscious. I would say that the 'intuitive' skills used in this process of trying things in rehearsal and deciding if it 'works' or not are not outside the realm of intellectual comprehension, but instead sometimes difficult to describe and analyze because they are forms of embodied meaning-making that pertain to the pre-verbal, emergent level of meaning. I would suggest that cognitive science provides the right body of knowledge for a rethinking of the artistic work done in rehearsals in terms of cognitive skills. Embodied cognition provides a theoretical framework that can validate the role of the body, movement, creativity and imagination in understanding and reasoning: realms that can easily be dismissed into the somewhat vague category of 'intuition'.

negotiating the self in the field of vision

NATURE or NURTURE defines the adult self against the performing child by staging them in opposition to each other and creating a complex powerplay between stage and auditorium, using the theatre set-up and the way it corresponds to the modern Western worldview to question and destabilize the way we define identities on the social stage. If invisibility equals power in the field of vision, *NATURE or NURTURE* has handed us adults the power to identify what a real child should look like and then disarmed us again by turning the spotlights back on us. One could argue that *NATURE or NURTURE* is political in the sense that it is a form of counterhegemonic resistance against a tendency towards idealizing the child as innocent, cute and authentic and at the same time devaluing it as simple, fragile and unknowing. But this performance does not stop at an attempt to emancipate the child from a repressive representation by adults. Instead its goal is more ambitious: it calls into question the very possibility of determining what the 'real' child behind the representation is. Looking at this performance was for many an unsettling experience, not because it confronted us with violent content, but because it confronted us with an undoing of the very worldview that would have allowed us to console in the idea that even if we have failed to 'see' childhood 'correctly' before, we will be able to redeem ourselves and 'see as it is' once we try harder. While the children are literally tearing down the theatre, the last scene of the performance is tearing down the 'theatre' of our encultured and embodied mechanisms of perception, and destroying the illusion of a singular view on reality independent of our relation to it - a view that defines childhood as sharply separated from adulthood. By tearing down both concepts at once the performance demonstrates how the two concepts depend upon each other: we adults need childhood to be a beacon of purity and innocence if we do not want to be forced to redefine our vision of ourselves as an authentic psychological inside that is being held, protected and

shielded off from the world by a corporeal outside.

If we think of the field of vision as a political arena for a moment, then we could see the dynamic interaction between seer and seen in which both are positioned (and sometimes displaced) in relation to each other as a kind of politics of identity: a powerplay through the acts of staging and seeing in which some parties may win and others may lose. Rather than a free-for-all in which we are all at liberty to interpret what we see and take in a position that we feel suits us best, the field of vision is a place where power can be exercised; a dynamic process that decides who will be measured by what standard, and in which the success of one point of view may exclude another. In the political arena that is the field of vision, the negotiations over who gets to take in which subject position are not a democratic process, nor one in which we are all free individuals at liberty to choose where we stand without being effected by our social and cultural environments and by what we see. This idea of individual freedom and independence fails to acknowledge the role that our bodies play in the way we perceive and think (bodies that are at once bound to biology and to culture) and therefore appears to depend upon a disembodied view on the self and on vision. Our biology and the way we negotiate power relations and identities are not two separate things: our bodies play a central role in the political arena of the field of vision. Acknowledging our embodiment on every level involves accepting that 'we were never separate or divorced from reality to begin with' (Johnson and Lakoff), and acknowledging that we are subjected to powers that we are not separate from and that we are not be able to completely control.

One of the things that Bleeker's theory brings to the fore – with regard to visuality in general and more specifically when applied to visuality as it takes place in *NATURE or NURTURE* – are the negotiations and power struggles that take place over who will take up which subject positions. It seems that in the field of vision our identity, our individuality and our sense of selfhood are always on the line. Interestingly, the embodiment of cognition suggests the same, making clear that instead of taking Bleeker's remark that "(...) seeing appears to alter the thing seen and to transform the one seeing (...)" (Bleeker 2008, p. 1) as a kind of philosophical thought experiment, we need to take this statement as literally as we can. The impact of visuality goes under our skin, into our muscles and our brain tissue: it is a deeply organic, bloody, meaty and messy process that changes our bodies and therewith off course also our minds. In the theatre the processes of being placed and displaced and of taking up subject positions or refusing to do so can remain implicit, or their dynamics and the resulting power struggle over what is real and who will assume which identity can be brought to the fore (which is exactly what *NATURE or NURTURE* does). These processes are entirely embodied.

In the first chapter I observed that some publications suggest that in looking at theatre, our selfhood is on the line, because inside the perceiving body of the spectator the dynamic process of negotiating the borders that separate the self from the world would be impacted especially strongly by seeing live performance. In my introduction I mentioned that an assumption underlying my research is that seeing theatre impacts the self of the viewer. In retrospect I would say that this assumption on my part is a sign that my thoughtprocesses too are conditioned to think of the self as something that is originally stable and that needs a big effort such as a theatre performance to be destabilized to begin with. After the

research I have done I would say that the self is in fact *always* on the line, from the moment we wake up and start perceiving. From the embodiment of cognition follows that the self is not stable to begin with nor is it supposed to be. What *NATURE or NURTURE* does is that it impacts our sense of self in an explicit rather than an implicit way, thus possibly moving the continuous negotiation of the borders that separate our bodies from the world and our minds from those of others to our conscious awareness. The difference between the impact of seeing this performance and, for example, the impact that sitting in an armchair and reading an essay that discusses the contingency and plasticity of the self might have, is that *NATURE or NURTURE* manages to simultaneously engage my abstract thoughts and the sensations of my body, discussing the topic while making it happen to my body in real time. The fact that theatre can address the viewer as a body looking through all the senses as well as through language simultaneously makes it an especially powerful environment to impact our body-maps and our sense of a stable self, and it explains why the experience was powerful and 'somehow very physical' to me. It explains why this performance 'worked'.

What throughout the process of writing this thesis has excited me about the paradigm of embodied cognition is that it provides a way to explain how the experience of seeing a performance can be a confrontation with new ideas - not for our disembodied minds but inside our perceiving bodies, causing movements, displacements, and a re-arranging of neurological connections. As I have stated in my first chapter, our intellect is deeply sensual. It is not just rooted in the realities of our bodies and our worlds, it lives there at every level. Attending to its unruly and dynamic character by using cognitive science is how I propose to do justice to the unruly character of what it is like for us to sit in the theatre, look at a performance, and make sense of what we see.

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Performance Information

NATURE or NURTURE was created in 2010, by:

Director: Alexandra Broeder

Performers: Moriah Dekker, Karsten Duyvis, Dorothy Heady-Carroll, Zoë de Jonge, Rosa in 't Hout, Willemijn v.d. Pijl, Jorrit van Poelgeest and Marieke v.d. Steen

Stage Design: Sacha Zwiers

Dramaturgy: Simone Hogendijk

Assistant Director: Jorieke Abbing

Sound Design: Wessel Schrik

Light Design: Gé Wegman