

Facts and Fictions: Landscapes of Memory, Imagination and the Brain in Performance Making

Kate Hunter

Victoria University

As a performance-maker with a physical practice of devising, I have for some time been curious about the science of making performance. My practice is a constructive process where narratives, themes, ideas and physical elements are invented, remembered, composed and re-worked. I am constantly imagining material for theatrical performance. Memory, too, is a fundamental element that is incorporated into this process. My research into the neuroscience of recollection has led me to an enquiry into the landscape of memory as it intersects with the landscape of imagination. In this paper, I identify some of the key neuroscientific ideas with which my practice-led research is engaged, and I examine the way memory and imagination intersect, both in my devising practice, and in my brain. I draw on two recent performances I made in Melbourne to illustrate the evolution of my composition techniques and to explain my approach to image-based material and re-constructed narratives prompted by brain researchers Antonio Damasio and Jonah Lehrer. I describe the personal landscape of my performance practice, particularly in relation to subjective experience: the special things that make my knowledge 'mine'—my histories, my stories, my self in the world. Finally, I examine the ways such an approach might enliven perceptive abilities within a devising practice and provoke new possibilities for process.

Keywords: devising, memory, imagination, neuroscience, practice-led research

Kate Hunter is a performance-maker and researcher with a background in physical theatre based in Melbourne, Australia. She studied acting at the National Theatre Drama School and holds a Bachelor of Arts (Honours Performance Studies) and a Graduate Diploma of Movement and Dance from the University of Melbourne. Kate is the recipient of an Australian Postgraduate Award and Vice Chancellor's Postgraduate Research Award, enabling her to undertake a PhD in Performance Studies at Victoria University, where she is exploring the relationship between memory, neuroscience and performance-making. She has recently embarked on a dialogue with Dr Louise Corben, Post-Doctoral Research Fellow at Murdoch Children's Research Institute, about the intersections of art practice and neuroscience.

In his work *The Astonishing Hypothesis: The Scientific Search for the Soul*, the biophysicist and neuroscientist Francis Crick claims our fundamental human qualities are just the sum of our cellular parts. "You, your joys and sorrows, your memories and ambitions, your sense of personal identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules."¹ Crick makes the claim that science can explain all of our subjective experience. Whether or not neuroscience, which is a relatively recent scientific field that asks questions about mind, brain and body, can 'explain' our subjective experience of performance is not a question I will seek to address in this paper. I will, however, suggest that neuroscience offers a compelling lens through which to view and provoke new possibilities in performance practice.

As a performance-maker with a physical practice of devising, I have for some time been curious about the science of making performance. I am interested in my own experience as a creator of performance. I have often wondered what might be occurring in my brain and my body in the moments of generating theatrical material. My current research identifies several neuroscientific principles around memory and the body and examines my creative practice through an engagement with these principles. In this paper I draw on two performances created as part my practice-led research in order to illustrate the way key neuroscientific ideas have helped with the evolution of a devising or performance-making process.

The main purpose of this paper is to articulate some parallels between the landscape of memory and imagination in my performance-making process, and the landscape of the brain as it imagines and remembers. The paper describes my personal landscape of performance practice, particularly in relation to subjective experience: the special things that make my knowledge 'mine'—my histories, my stories, my self in the world. What does it mean to re-tell and re-collect in the process of performance-making? Where is the process taking place—in my brain, my body, my mind? Or somewhere else, somewhere unknowable?

Why neuroscience?

The field of neuroscience provides a research framework that is motivated by both personal and pragmatic reasons. My interest in the brain and body has been fuelled by twenty years of physical theatre practice. The strands of theatrical experimentation in my solo performance work as well as many years of training in movement methods and physical theatre techniques have fostered an attention to the relationship between memory and devising as a method of making performance. This confluence of interests has resulted in a desire to ground and articulate my experience of the actual moment of devising, which involves imagining, improvising and then remembering. Neuroscience offers me a potent construct for this artistic dialogue about memory and the body and the creative process. Neuroscience asks questions about the nature of empathy, the location of the mind, the notion of self and the qualities of consciousness. It describes the neural underpinnings of aesthetic process and articulates the biology of creativity in objective and scientific terms. It describes the complexity and profundity of recollective processes and the way we imagine the future. As an artist-researcher neuroscience presents me with many difficulties—it doesn't describe mind or memory or self in a very familiar or immediately useful way, for example. Nonetheless, the language and codifications employed in the field are strangely compelling for me, and I am curious about the intersections and exclusions that might be uncovered when an arts practice and a scientific discipline meet.

Another motivation for my interest in neuroscience is the profound experience I had caring for my mother who fell ill with, and who subsequently died from, dementia. As I observed at close hand the deterioration of her body and brain, I was deeply saddened by her loss of self—but I was also morbidly fascinated by the curious events that occurred as her cognitive ability declined. In between bouts of frustration about coping and a very real fear of impending death, my mother dwelled in a bizarre kind of fantasy-land in which the boundaries between the real and the imagined seemed to change without form or function. She remembered unexpected things, and forgot simple ones. She made up stories that were almost true, but not quite. All sorts of odd physical things occurred—holding a piece of chocolate to her ear because she was sure it was a telephone; using a spoon as a toothbrush; singing all the words and doing all the actions to *Oklahoma* whilst thinking I was her music therapist.

It seemed to me, as both her body and mind declined steeply, that there was a very clear connection between her physical experience and her cognitive processes. Memory is so much about who we are. Without it we are ghost-like, physically present but detached from the world. During the time of my mother's illness I was surrounded by all of these thoughts and feelings as well as being confronted with the visceral, peculiar and inexorable march of death. I craved an understanding of this experience, some sense of order or explanation or objective set of rules ... but ultimately dying and death and losing oneself is unexplainable. It happens, and it is unstoppable. In his book *The Infinity of Lists*, Umberto Eco claims we seek control by ordering things because we are all faced the ultimate chaos: that of death. He says "[t]hings in a given order help us to remember them by remembering the place they occupied in the image of the world."² I am drawn to neuroscience, then, because it provides some background to and understanding of the very confronting illness of my mother. But it also puts my enquiry into a 'given order'. It offers some sense of control over the uncontrollable alchemy that is making performance.

A context

For the purposes of further contextualising this research, and myself in it, I would situate my enquiry outside the formal theatrical conventions of 'script, actor, director' and make a claim for devised work. My devising practice is grounded in physical methods and material is generated from and by the self. My work is 'non-fictive' in that I don't create character and narrative, but draw on autobiography, personal story, dreams and memories, and then manipulate the performance text to suit. I am interested in challenging formal distinctions between the real and the fictive. I cannot remain objective about my work, and I do not wish to. What I have come to know is that the personal is inherently bound to the practical in this performance-making process.

My research is 'practice-led', as defined by Brad Haseman in Estelle Barrett and Barbara Bolt's book *Practice as Research: Approaches to Creative Arts Enquiry*. Haseman cites Carol Gray's description of practice-led research as:

Firstly, research which is initiated in practice, where questions, problems, challenges are identified and formed by the needs of practice and practitioners; and secondly, that the research strategy is carried out through practice, using predominantly methodologies and specific methods familiar to us as practitioners.³

Thus, primacy of practice is key to my research. Questions arise from needs driven by the practice. Insights and analyses are undertaken after showings or performances, which then feed into new ways of working, in a cyclical methodology. Public airings of work punctuate the process and challenge the enquiry most fruitfully. I identify this non-linear approach as a hermeneutic standpoint in my enquiry: a constant revising process which acknowledges, incorporates and synthesises knowledge. Sally Gardner describes such a process in her article "Hermeneutics and Dancing" thus:

The text becomes the ground for the testing of prejudices; and the task of the subject who seeks to understand a text is one of constant revision and reassessment. Conceived in this way the horizon of the present, constituted in the intersection of reader and text, is in constant formation.⁴

Positing a dialogue around neuroscientific principles in arts practice is challenging. The tensions between an ordered scientific methodology and a highly subjective artistic process can be discomfiting—nonetheless I embrace this discomfiture with curiosity, rigour and artistic determination. Employing the 'constant revision and reassessment' of a hermeneutic enquiry enables me to keep building on established practices as well as opening up to new and unexpected territory.

Neuroscience is a discipline with enormous breadth and depth, embracing fields such as cognition, neurological disease, evolution, linguistics and psychology. In order to refine and focus the study I have undertaken, I refer in this paper to two neuroscientific ideas which I hold up to my performance-making practice. The first is the definition of 'image' as related to the 'body-minded brain' described by neuroscientist Antonio Damasio in his book *Descartes' Error: Emotion, Reason and the Human Brain*.⁵ The second idea is that memory and imagination are interchangeable in neural terms, and coupled with that is the process of 'reconsolidation' that occurs when a memory is recalled. This process is described by a number of writers, such as Damasio and Nobel Laureate Eric Kandel in his book *In Search of Memory: The Emergence of a new Science*

of *Mind*.⁶ In this paper I draw specifically on science writer Jonah Lehrer's account of 'reconsolidation' as described in *Proust Was a Neuroscientist*.⁷

Throughout the paper I refer to two solo performances I made in Melbourne, Australia, as examples used to illustrate some of the practical approaches and new perspectives that such a study elicited. These performances are *list(n)* and *The Ballad of Randolph Van Dyke*.⁸

list(n) was performed at forty-five downstairs as part of Tashmadada's Searchlight Festival was a solo work of fifteen minutes in length and incorporated film and movement as well as a complex audio score that I constructed using recorded voice, breath, and clockwork sounds. At the time, I was reading linguist George Lakoff's book about taxonomies and categorisation, *Women, Fire and Dangerous Things: What Categories Reveal about the Mind* about abstract categories as interpretive and imaginative structures to help us make meaning of the world⁹, in conjunction with Damasio's writing about the body's 'internal preference system' which was fuelling my explorations about the neuroscience of memory. As I began to devise the work, I had trouble remembering what to say, where to stand and where to go next in the limited time I had for rehearsal. I decided to make this the provocation for the work. I wanted to help myself remember things, and proposed that I could and would tell myself what to do while doing it.

The Ballad of Randolph Van Dyke was performed at the Meat Market, Arts House, eighteen months later. This piece was created for the *180 Seconds* series in which artists presented three-minute performances. *The Ballad of Randolph Van Dyke* was a monologue of interweaved text where my recorded and live voices intersected, synchronised and diverged. I was curious as to whether I could manifest the characteristics of memory in theatrical form: the convergences and divergences of narrative that underpin the truths and fictions of stories we recall.

Devising with images

Artists working in performance-making contexts would be familiar with ideas of memory, image and attention in their process. I work with particular attention to Damasio's definition of brain images, rather than the conventional notion of 'image' as a visual picture at the forefront of consciousness. In Damasio's model of 'the body-minded brain,' there is a finely balanced synthesis between mind, brain, body and environment. The organism in its entirety generates responses from and to the environment and itself. The brain processes this reactive and generative information and connectivity by forming neuronal dispositions—what we know as thought. The brain forms images in response to immediate external stimuli but also recalls images from the past. An 'image' can be a feeling, a sound, a bodily experience, a recollection, a thought, a fragment of past experience, a touch. Images are perceptual (informed by senses or experiences in the present moment) or recalled (informed by previous recollections). Images are not located in or formed by the brain alone—the brain, the body and the environment are fully involved in the generation of an image.¹⁰ In his book 'Descartes' Error: Emotion, Reason and The Human Brain', Damasio describes the process thus:

Sometimes the construction is paced from the world outside the brain, that is, from the world inside our body or around it, with a bit of help from past memory. ...Sometimes the construction is directed entirely from within our brain, by our sweet and silent thought process, from the top down, as it were. That is the case, for instance, when we recall a favourite melody, or recall visual scenes with our eyes closed and covered, whether the scenes are a replaying of a real event or an imagined one.¹¹

There are several ways in which Damasio's notion of images influenced the way I made both *list(n)* and *The Ballad of Randolph Van Dyke*. One of these ways was that my perceptive antenna gradually became more

galvanised as I devised the pieces. My practice as a deviser had always been outcome-focused and quite 'busy': with these two works I consciously applied an attention to the 'sweet and silent thought process' that Damasio describes above. In *list(n)*, for example, I simply spent a significant amount of time being still in rehearsal. Sometimes this meant I lay on the floor on a blanket; at other times I literally stood, silently, in the space. An outcome of this silent space was a reflection on resonant images, and a growing interest in peripheral rather than central elements. Tuning into the perceptive qualities of my senses, my body, my environment and my recollections seemed to encourage a rush of information. The lines, borders and edges of and around things gently gave way. I started to be interested in material I had left out—the duds, the leftovers, the excised items. In *list(n)*, this idea became a surreal post-modern meta-loop as I incorporated whole lists of extraneous material as text itself. It became a mega-list of topics, scenes and ideas that was read to the audience under the heading 'What I Didn't Include', a kind of unfinished story in which the left out pieces provided the space for an invisible, unspoken narrative.

Another outcome was in response to the idea that 'the body-minded brain' processes images from the past (through recollection) and the immediate present (through stimuli such as touch or the external environment), concurrently. This led to a making process in which I adopted a more cyclical, concurrent approach. In previous rehearsal methodologies I preferred to develop segments of work in chunks (movement sequences in one week, script in another) and piece them together towards the very end of the phase. With both *list(n)* and *The Ballad of Randolph Van Dyke* I commenced a process where much of the theatrical material was devised concurrently. In the studio I would have all the tools at my disposal, including my digital recorder, my laptop, my body, my childhood recollections, my notebook and a host of field recordings. The digital recorder became a valuable audio tool with which I could capture improvised material at the moment it was generated. I talked to myself and told myself stories, recording these monologues as I produced them. I then played the monologues as accompanying audio as I improvised gesture, monologue and kinesthetic response. I built choreographic explorations that informed the audio texts I had recorded, which changed and mutated the texts further. I transcribed every word of the texts, including all the incidental sounds and words: the 'ums', the 'ers', the breaths and the sighs, and used them as script alongside my spoken word in the performance. This meticulous but quite open crafting process resulted in a sonically engaging performance style with a series of intersecting recorded and live voices that undercut, over-rode or joined each other.

The neuroscience of memory

Memory is a hugely complex mental function that is notoriously unreliable and works in many different ways. It is beyond the scope of this paper to describe the neuroscientific underpinning of all memorial processes. However, recent research indicates that our conventional understanding of memory recall and storage as a kind of vast hard drive in the brain is not accurate.

Memory is a huge and vastly complicated assemblage of processes and experiences, and when we consider the way it is used in performance practice, the possibilities are endless. We incorporate spatial memory when we work architecturally in space or when inventing small movements across the body; we use personal story and autobiography; we embody explicit and then procedural memory as we learn a movement sequence and then perform it; we practise lines. Memory underpins our aesthetic choices and our tastes: we remember what we like and select material accordingly; we instinctively gravitate towards or away from sounds or words or gestures because of associations and connections. Damasio likens this massive assemblage of states, pathways and passages in our brains to an enormous international airport. Vehicles arrive and leave, passengers board aircraft jetting off to distant places while others arrive and disperse across many locations, messages and announcements direct airport traffic up and down levels, and passengers travel alone or in pairs or groups.²² Our brains accommodate this unwieldy undertaking because of the incredible properties of its

elements. Neurons and synapses snap to attention, rest in stasis, build molecular relationships through chemical and electrical triggers, seemingly without effort.

Most people assume that when a significant event occurs to us, we somehow place the record of such an event in some kind of neural filing system—a huge storage drive that acts as a repository for everything that has ever happened in our lives, everybody we have ever met, every flower we ever have smelled. At some later time, when we want to recall the memory, the brain accesses the drive, searches through the many files of events and stories, and selects the memory for us to peruse. It appears in our consciousness, seemingly unchanged, the facts clearly evident, exactly as it occurred, sometimes in incredibly specific detail. The brain files all our memorial information in this way, allowing us to relatively easily find what we need and bring it to consciousness. We believe this to be true because our experience tells us so—we remember things exactly as they happened. Or do we?

The way in which the brain creates memories is more complicated than this. Cognitive function occurs in the brain when neurons (nerve cells in the brain) emit explosive electrical pulses. Memories occur in exactly the same way, except that signals for memories remain in the brain, building up over time to create repeated neuronal patterns. A neuron, which can fire repeatedly, creates a connection with another neuron, which sets up a continued trajectory of firing. Pathways from neuron to neuron are created and repeated until patterns are established, as the memory becomes consolidated. Neurons set off other neurons a little like gunpowder, and the more a neuron fires, the more its neighbour will fire. The process is repeated, and neurons form clear encodings for an event, a sound, a smell, a face—a memory is created.¹³

At the moment of memory recall, something different happens. Neurons are re-activated by specific molecules that chemically switch on or off to prompt recall. Jonah Lehrer in his book *Proust Was a Neuroscientist* describes the phenomenon of 'reconsolidation'—the process whereby a neuron re-fires to stimulate the encoded pattern for a recollection, and its chemical structure is fundamentally altered. The composition of the neuron actually changes in the process of recalling a memory. Memory, says Lehrer, is a 'ceaseless process', one that is constantly re-making itself on a neuronal level. "A memory is only as real as the last time you remembered it. The more you remember something, the less accurate it becomes."¹⁴ Lehrer's chapter about Proust and the nature of recollection underlines the parallels between art practice and science "As long as we have memories to recall, the margins of those memories are being modified to fit what we know *now*."¹⁵ As memories are recalled, they are re-constructed. The process of remembering is a process of composition.

Furthermore, all sorts of personal landscapes inform the nature of recollections, particularly with regard to autobiographical memory. Your state of mind in the moment you remember, for example, can change the quality of a recollection, as can life experiences, how often you recall the memory, or whether you were on your own or in a group when the event occurred.¹⁶ Memory is fundamentally plastic, mutable, and ethereal.

Memory and imagination: the intermingling of facts and fictions

Not only does memory itself prove to be a complex amalgam of fact and fiction, but the line between it and imagination is blurred in neuroscientific terms. Damasio states that the neural processes that underpin our reflections of the past are not so different from the neurological process that occurs when we project into the future. "Images of something that has not yet happened and that may in fact never come to pass are no different in nature from the image you hold of something that already has happened. They constitute the memory of a possible future rather than of the past that was."¹⁷ Imagine, for example, you are thinking of your new puppy, or a recent article you read, or your cousin Kevin's announcement of his engagement. All of these

thoughts are made up of a myriad of images: the softness of the puppy's fur, the spelling mistake you noticed in the introduction of the article, the sound of Kevin's voice... and many more. Consider that your thoughts might wander to the prospect of Kevin's upcoming wedding: who might turn up, what you are going to wear, how to avoid the name-dropping sister-in-law. These images of possible future activities become consolidated in your brain as memories, despite the fact that you are, in fact, imagining a future. When creating a fiction of future events in this way, neurons behave in exactly the same way as they do when forming memories—connecting across synaptic spaces to form neuronal patterns that code for Kevin's upcoming wedding event. The brain constructs an imagined future like a memory.

In her book *A Director Prepares*, theatre director Anne Bogart champions memory as a crucial component of creative work.

Memory plays a huge role in the artistic process ...We create truths by describing, or re-describing, our beliefs and observations. Our task, and the task of every artist and scientist, is to re-describe our inherited assumptions and invented fictions in order to create new paradigms for the future.¹⁸

Just as subtle and sensitive shifts between synapses occur in the brain, subtle connections and patterns are being 're-described' when I gather imaginative and recalled material in my devising process. In both my rehearsal process and performance, Damasio's 'memory of a possible future' played out in particular ways. The multiple narrative voices I employed in *The Ballad of Randolph Van Dyke*, using the audio recording technique described earlier, aimed to present in theatrical form the curious and unreliable nature of memory itself. In addition, the process of recording my stories, my ramblings and my neuroses to myself in the studio became an integral part of my method, allowing me to remember and embellish with equal measure. The audio recorder, originally employed because I needed some practical way of giving myself orders and instructions while working, became a crucial part of this. In previous work I'd relied on writing and improvising to tell stories; now I began to manipulate, manufacture and re-construct my past and future narratives. Stories that I dredged from the murky past became embroiled with dreams and inventions and other peoples' recollections, so that there was a constant interplay between facts and fictions.

I constructed material using my memory *and* my imagination. I drew on recalled and perceptual images, and I interweaved material that was imagined, which then became part of the fabric of remembered material, in a constant interconnecting constellation of fragments, figments, feelings, senses, truths and lies. Nothing was sacred. I started to believe my own stories in the same visceral way one believes one's recalled memories from life: in the telling of the story, it becomes 'truth.'

Lehrer's description of the poignant, ghostly characteristic of a memory as 'only as real as the last time you remembered it' resonated strongly as an aesthetic quality in both performance works. The methods I'd started to employ and the territory I was entering engendered a particularly suspenseful and spacious energy in the work that was different to work I had made in the past. I continue to investigate this territory. I want to investigate the specificity of these particular qualities in the context of memory. I have become interested in the 'heldness' of a memory—that suspended moment of poignant remembrance—and its relationship to my body, my imagination and my active devising experience. These suspended moments seem somehow compressed yet at the same time enormous; not contrived or false or trying-too-hard but real, truthful and resonant. In these moments of intimacy and humanity, the very process of performing is a re-telling, and in the re-telling new truths are formed. Memory in this sense is not reality, but is like a photocopy of a photocopy of a photocopy—recollections are transformed through remembering and re-telling. When memory and making intersect in this serendipitous fashion, the experience flares brilliantly, viscerally, but briefly.

My process is and continues to be an instinctive investigation that is part of my artistic curiosity. Neuroscience is a useful framework, but my subjective experience is what navigates me through the content that I generate. Subjective experience—what I know—is what helps me select and refine the detail. Yet the question remains: can neuroscience move beyond the objective paradigm to explain our subjective experience; namely, the way in which Crick’s ‘vast assembly of nerve cells and ... molecules’ manifests knowledge of things and elements and stories that are our own? A scientific experiment can prove that I see the same hue of blue through my visual cortex as that of other human beings, but it cannot explain my subjective associations with that hue of blue and my mother’s blue cardigan, with all its connections, smells, feelings, and images that only I really know. This is where art is crucial; as Lehrer says: “This is why we need art. By expressing our actual experience, the artist reminds us that our science is incomplete, that no map of matter will ever explain the immateriality of our consciousness.”¹⁹ Neuroscience informs, frames, and challenges my practice, but I haven’t come to my particular method of composition by studying neuroscience. I don’t dance with electrode-studded caps fixed to my scalp while real-time motion-capture devices project stick figure images of my working body onto a screen. My work fundamentally remains on the floor, in the studio, grounded in devising practice. Nonetheless, my senses, my listening practices and my attentions continue to be enlivened by an engagement in neuroscience. Rather than a radical change in practice, such an approach prompts gentle emphases on subtle refinements, teases out nuanced narratives, and builds on perceptive practices.

For devisors working with their own material, employing such cross-disciplinary investigations can be immensely valuable. The advances in neuroscientific research and the themes that it addresses around memory, body, perception, and mind, are of categorical interest to contemporary performance-makers. Teachers and educators, particularly those working across physical theatre contexts, could employ such enquiries alongside devising units to build on perceptive practices and enhance the quality and depth of material.

Performance provides a universal landscape: a re-telling of our stories, an ongoing metaphoric ‘reconsolidation’ where our narratives in myriad ways are being re-collected and re-told. Performance enables stories to be re-constructed by the audiences that experience them, and those audiences in turn invest the stories with their own individual cultures, experiences, perspectives and imaginations, distilling and refining the stories to create something new. That embodied collection of my evolutionary history is an expression of my story so far—my memories, my thoughts, my culture, my personal experiences and my place in the world.

NOTES

¹ Francis Crick, *The Astonishing Hypothesis: The Scientific Search for the Soul* (New York: Touchstone, 1994) 3.

² Umberto Eco, *The Infinity of Lists* (New York: Rizzoli International Publications, 2009) 155.

³ Brad Haseman, ‘Rupture and Recognition: Identifying the Performative Research Paradigm’, in Estelle Barrett and Barbara Bolt, ed., *Practice as Research: Approaches to Creative Arts Enquiry* (New York: IB Tauris & Co Ltd, 2007) 147.

⁴ Sally Gardner, ‘Hermeneutics and Dancing’, *Writings on Dance* 10 (1994) 38.

⁵ Antonio Damasio, *Descartes’ Error: Emotion, Reason, and the Human Brain* (New York: Penguin, 1994).

⁶ Eric Kandel, *In Search of Memory: The Emergence of a New Science of Mind* (New York: WW Norton & Co, 2006).

⁷ Jonah Lehrer, *Proust Was a Neuroscientist* (New York: First Mariner Books, 2008) 85.

⁸ Kate Hunter, list(n) dir. Glynis Angell, forty-five downstairs, Melbourne, February 15 2010.

... The Ballad of Randolph Van Dyke, Meat Market, Arts House, Melbourne, August 8 2011.

⁹ George Lakoff, *Women, Fire and Dangerous Things: What Categories Reveal about the Mind* (Chicago: The University of Chicago Press, 1987).

¹⁰ Damasio 96–97.

¹¹ Damasio 97.

¹² Damasio 87.

¹³ Rita Carter, *Mapping The Mind* (London: Phoenix, 1998).

¹⁴ Lehrer 85.

¹⁵ Lehrer 87.

¹⁶ Susan Engel, *Context is Everything: The Nature of Memory* (New York: WH Freeman and Company, 1999), Lehrer 88, Daniel Schacter, *Searching for Memory* (New York: Basic Books, 1996) 21–22.

¹⁷ Damasio 97.

¹⁸ Anne Bogart, *A Director Prepares* (New York: Routledge, 2001) 10.

¹⁹ Lehrer x.