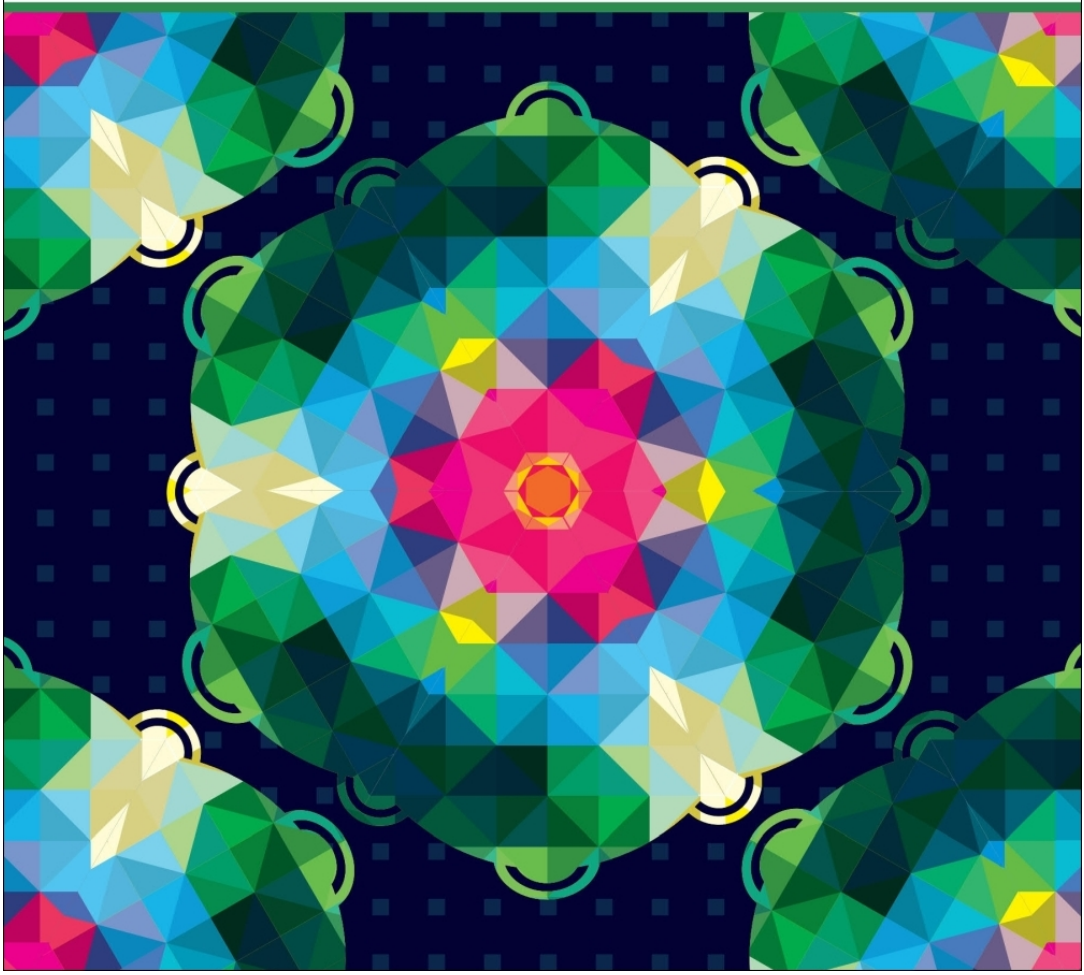
Taking Heart and Making Sense

A new view of nature, feeling and the body

Karin Lindgaard



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A NEW VIEW OF NATURE, FEELING AND THE BODY

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Introduction

Taking heart and making sense is something we must do many times in life. We all face challenges or reach junctures where we need to dig a little deeper, find a little optimism—to take heart—while we also settle on a way of understanding that seems useful and that we can live with—we make sense. But people do this in very different ways. Each person's perspective on their own life is different and it is often difficult to know how things really are for someone else, what their experience is like. Such separateness is a part of being human. That is a theme of this book and seems important to acknowledge early on; we are separate and individualised beings. But an even bigger theme of this book is that we are interconnected beings, with each other and with the natural world. The first point we already know, but the second needs explaining. Western culture currently does not seem to understand it. This book offers one way of explaining our interconnectedness along with our separateness. Feeling is central to both.

In our own lives, feeling is important to understand because it is always present, even if sometimes it is very quiet. It is not some part of our consciousness that we can add or take away. It is the foundational level of our experience—of the physical body but somehow more than the body because the present, feeling body is also formed of its history. Often this history will be outside our awareness, even as it continues in our functioning, in our reactions to situations and in our habits. Yet even when we are unaware, feeling interprets this history; it relates our present and past as we recognise situations, whether by a subtle sense or a tumultuous change.

In a broader social sense, the relevance and importance of understanding feeling cannot be overstated. Secular Western culture seems to be adrift, without a strong sense of the value of

life or the best way for human beings to live and engage with one another. One key reason for this lack of moorings is that human experience—and its relation to the broader nature—is not adequately accounted for by the narratives that underpin and influence Western culture. Feeling is rendered essentially meaningless by both science and postmodernism and genuine alternatives have yet to come to fruition, although they are certainly in the making. We need theory that can explain human feeling—and subjective, individual experience—while still affirming the importance of science and empirical research. Such theory should support rigorous knowledge and understanding of the world, while at the same time anchoring us in a stronger sense of meaning and value, of our individual and collective lives, and of our participation in the very process of life itself. It should help us to develop care and concern for others as well as to deal with the undeniable difficulties of life, the fear and insecurity inherent in being alive.

It is not easy to chart a path that explains the depth of our interconnectedness while acknowledging the uniqueness of individual experience. Yet, if we can do this, we can begin to understand how working with our own experience effects change beyond ourselves—reverberating through interactions, groups and societies. Accepting my feeling helps me to accept yours. Understanding my history helps me to understand yours. This occurs at a much deeper level than we currently appreciate. Even so, we must take care not to romanticise feeling. Experience can be painful and alienating, particularly if we don't understand how it arises. Our feelings can be confusing and contradictory, and can push us to act in ways we don't understand or later regret. Human beings are complex, perhaps unfathomably so. We are capable of inflicting immense suffering on one another. Yet we manage to live relatively peacefully together in many places, sustained and buoyed by mutual care and cooperation, despite our flaws and differences. Our capacity

to care for and connect with each other exists deeply in the natural way of things.

Explaining human experience in a useful way requires that we move beyond the concept of the isolated individual that permeates so many aspects of contemporary life. People are largely understood as entirely separate from one another and from nature—unconstrained, self-reliant and in competition. When we see ourselves this way, we tend to instrumentalise the natural world as an entity entirely disconnected from us, which we can only exploit and attempt to control, rather than in which we participate. Indeed, many of the metaphors we use to describe life itself are based on a fantasy of control—brains control people, genes control cells, chemistry controls physiology, natural selection controls evolution. None of these are accurate. They are based in the underlying view that the world is made of physical things and that other outside forces move them.

This book puts forward a different view, that we need to understand the intricacy of interactions that form nature—including individual human beings—from the ground up. Here I am referring to metaphysics—our foundational concepts. Even if we think they are irrelevant, they are everywhere. In recent years, we have helplessly witnessed the unprecedented destruction of animal and plant life, some of it centuries old, in megafires on more than one continent. We have discovered an enormous garbage island floating in the Pacific Ocean and microscopic plastic particles in every level of the food chain. Even so, we continue to live in more or less the same way and to plunder ancient natural resources, all while having our lives turned upside down by the worldwide spread of a new disease. I cannot help but think that the view of the world as composed of lifeless matter creates death because this view does not engender the right kind of care and concern. But perhaps this is poetic license. What I am certain of is that ideas

collectively shape us as much as actions, and that when we change our worldview we can observe new phenomena. One of the most important phenomena that comes into focus when we understand nature differently is that meaning is immanent in nature, in living processes. This helps us to both value life itself and to experience and reflect on our humanness. Meaning is immanent in the living body, in the natural world. We experience this first as feeling.

Human beings are in and of the natural world. We can develop perspectives on the world, but we cannot stand outside it and view it objectively. A different underlying worldview can help us to come to terms with this without leading us into the idea that truth is relative—and the nihilism this idea leads to. This book in no way disagrees with the value of science and empirical research. Rather, it provides a broader view that highly values scientific inquiry while acknowledging the limits of the ideal of impartial observation. Many of the theories discussed in this book, which form its overall argument, are interpretations of empirical research. The purpose of presenting an alternative metaphysics as part of this argument is to develop a foundation that is already strongly implied in some branches of science, particularly biology and cognitive science. We are possibly on the verge of a paradigm shift.

This book deals with complex ideas from a variety of disciplines. Interdisciplinary work involves a different set of constraints than specialised academic work. I have tried to provide enough detail that the key points of theories are covered but not so much detail as to overwhelm the reader. Academic disciplines have become more and more specialised in recent decades—at the same time as pressures on academics have increased manifold because universities are now run as businesses rather than institutions for the public good. The result is a proliferation of highly specialised publications that no one can keep abreast of along with the general decline of funding

to the pure humanities and sciences—areas of research that do not directly generate financial revenue for institutions. In this way, and to our detriment, the entire system we live under replicates itself.

With the intention of resisting this fragmentation of knowledge, I have based most of this book on discussions of books that are already syntheses of research. They are all written by scholars and scientists. Some are meant for a more general readership while some are more specialised, but they all offer thorough arguments and many draw on empirical research. This means that interested readers can easily follow up discussions. It also means that I can treat these books as texts in themselves. I assume that all the research they report is sound, so I can work with the specific ideas and themes they each put forward as well as make connections between them to further my own argument. This is the way I have learnt to do interdisciplinary research and it is not perfect because it cannot properly acknowledge all the scholars dedicated to specialised research. It also cannot fully explain the intricacies of theories and debates within particular fields. Still, I believe it is a valid endeavour and can help to overcome fragmentation while demonstrating an important role for philosophy in this endeavour, and in public life much more generally.

One of the areas in which scientific understanding has progressed rapidly in the past two decades is the field of neuroscience. Recent themes that are relevant to theories of feeling are the brain's role in homeostasis (life regulation) and interoception (sensing or representing the inner state of the body). These themes are obviously related to each other and are important for how we understand the arising of experience—or feeling. While much has been discovered about these key processes, extrapolations about whole body functioning, behaviour and experience are often either partly or completely described through those metaphors of separation and control,

with the brain as an ultimate regulator. This can lead to far-reaching conclusions about human life that I see as unhelpful and inaccurate, conclusions which cannot help us to consider how best to live or how best to deal with collective problems beyond optimising our own separate experience. They do not help us to understand meaning and value in and with the world.

Questions about life functioning, inner sensing and experience should instead be seen in terms of the whole body as a particular kind of system in particular kinds of relationships. Thus, rather than asking how the brain controls the body or how the brain constructs meaning, we need to ask how whole systems regulate themselves and how whole systems look at themselves. Then, even more importantly, we need to consider how systems understand themselves in relation to other systems and other phenomena. These questions uncover the need to reconsider our most basic assumptions about reality and reconstruct a worldview based on different assumptions. While such a project is in some respects very abstract and is conceptually demanding, a new perspective gradually emerges that encourages and makes space for a much deeper appreciation of the intricacy, the inherent value, the symphonic interwovenness of the natural world and the profoundly creative process of evolution. This beautiful, shimmering, changing wholeness includes our humanness in relation—our tender vulnerability and our unique potential. These are big, ambitious themes but we need such themes to help carry us through to a genuinely new way of being with each other and within the natural world. My hope is that this book will become part of the chorus that can do this.

Rather than simply announcing the need for a new metaphysics, Part One of this book demonstrates this need by discussing some key theories of emotion and feeling in psychology, cognitive science, philosophy and neuroscience. The intention here is twofold—to offer concepts and details that are important and useful for a theory of feeling as well as to

highlight limitations in each perspective that point to the need for change at a more fundamental level. Chapters one to three therefore provide background theory as well as setting the scene for the theory that follows. Most works referred to in detail are recent publications but trajectories of development, particularly within cognitive science, over the past twenty-five years are also referenced.

Part Two—chapters four to seven—offers a theory of nature based on a new set of fundamental assumptions. I first clarify why this is necessary—in chapter four—by discussing the dualistic thinking that underlies the history of Western thought and continues to pervade Western culture. Chapter five outlines and justifies new categories to base our worldview on. I suggest that *change* is the fundamental characteristic that we can identify in any phenomenon and discuss a way of building *perspective* into the way we think about things. We may not have absolute knowledge of anything but we can develop stable and meaningful perspectives. We can do this by understanding the world as formed of processes, always existing in relation to other processes. The basic orientation here—of process/relation—is inside/outside. Current ideas in theoretical biology are explained in chapters six and seven so that we can better understand how living systems function both within themselves and in relation to other systems and phenomena. Understanding life in this way means that we can more easily see creativity and interconnectedness as fundamental to the natural world. Meaning is immanent in nature, including in human life.

The best way to bring such theories of nature into a new way of understanding feeling is by first understanding behaviour. This helps to keep our theorising stable, in the manner of science, because we observe living systems from the outside. This is especially important for observing animals. We can see what they do without assuming anything about how they feel. Part three—chapters eight to ten—makes the transition from

understanding behaviour to suggesting a different way of looking at feeling. In chapter eight I develop an idea of behaviour as complex attunements to create harmony amongst levels inside and outside of a system; and chapter nine further supports this by discussing the neuroscience of implicit learning and memory. Finally, in chapter ten, I can speak about feeling as a holistic, inner sensing—a *sense of fit*. This concept is a way of understanding how animals move through their lives with feeling. They recognise situations and on some level recognise themselves, even if they may not experience the same emotions as human beings. As the *sense of fit* helps us to understand animal lives as meaningful for them, it also allows us to be clearer about just how much of our human behaviour is habitual and automatic, and in that sense nonconscious.

Part Four then deals with human experience. Chapter eleven looks at human behaviour from the perspective of interactions among people and in groups before chapter twelve connects this perspective to a theory of infant development. Finally, in chapter thirteen, I describe a new way of understanding feeling—as *unique, individual metaphors*. This explains how our human feeling is built up in our histories but also emerges creatively in present-time situations. It means that our personal experience is stable and meaningful, created in concert with others, but that it is not fixed or essential; it can change. Chapter fourteen explores how feeling and language interact in the ongoing gestalt of conscious experience. Language is more precise but feeling is more honest. Neither should be prioritised—they are simply different forms of understanding that function in relation to one another. I suggest that attending to feeling along with thoughtful, even rational deliberation brings out the creative potential of consciousness as a process. We can become more present with ourselves and with each other.

In conclusion, I mention some of the ramifications of the overall view of feeling developed, particularly in relation to the

underlying speculative metaphysics. While tentative, they can lead to a very different perspective on our human relations. We are quite literally in this together. Thus, even though this book does not directly deal with the current global environmental issues, I believe that a better understanding of human feeling—along with the fundamental nature of the evolutionary processes through which human experience has arisen—could offer a much needed, but complementary counterpart to the increasingly desperate voices of so many esteemed scientists. We must not only change the way we live *materially* but we must care for and cooperate with one another to do so. We must value life in a new way.

PART 1

CONTEMPORARY PERSPECTIVES

1

From emotion concepts to embodied cognition

Feeling and emotion

How can we distinguish between feeling and emotion—and indeed, should we? We often refer to our emotions as feelings, and at times we might identify that we feel emotional. Even so, the two are certainly not the same. When I say that "I *am* sad" I convey something subtly, but significantly different than if I say "I *feel* sad". The first could be a bigger statement, perhaps about how I generally am or how I see myself in relation to a particular state of affairs in my life, but the second usually refers more clearly to my present, bodily state. I might even identify a present feeling of sadness without knowing why I currently have it. At the same time, if we are talking about feeling states, emotions seem more specific. Feeling can cover all sorts of experiences: hungry, restless, warm, alert. Understanding these differences is important for discussing how we inhabit, identify, and refer to our experience. While we tend to use the terms emotion and feeling somewhat interchangeably in everyday life, a theory of feeling should make a clear distinction. Such a theory must also explain and find a place for emotion.

One reason for beginning this book with theories about emotion is that they seem to be more common than theories about feeling. Emotion has figured more strongly in the history of philosophy—notably because of its identification with the passions, and thereby its difference from reason or rationality. Many philosophers from the Ancient Greeks onwards have seen emotion and the passions as central to the consideration of

ethics—although not always in opposition to reason; the Stoics initiated a tradition that views emotions as evaluative judgments and therefore kinds of cognition.[1] Even so, the theme of emotions as distinct from reason has been strongly present in psychology, with emotion seen as separate from—even in opposition to—cognition. However, developments in cognitive science, psychology and neuroscience, over the past twenty years, have been breaking down this distinction.[2] Emotion has also received much more attention in philosophy recently, even in the Anglo-American tradition, which has traditionally been disparaging of emotion.[3] Such work is necessary and important but the relationship between emotion and feeling is often unclear, if feeling is mentioned at all.

When scientists, and some philosophers, do mention feeling they often refer to it as *affect*. Affect describes the ever-present and bodily aspect of feeling, in terms of two parameters. One parameter—*valence*—refers to the pleasantness or unpleasantness of bodily sensations, while the other—*arousal*—describes the degree of calmness or agitation you feel.[4] Some researchers attempt to disentangle a third parameter that relates to control, such as *potency* or *dominance*.[5] Affect often seems to be treated quite distinctly from emotion without clarifying the relation between the two—although a default relation might be that emotion is a broader event with affect the subjective phase or experience of that event.[6] But *feeling* seems to me to be much more than affect. Feeling seems more holistic and meaningful than these two (or perhaps, three) parameters, even though feeling must *also* include the every-present bodily aspect of affect. These points are not just splitting hairs. They relate to the complexity of our experience, to how we think and talk about experience and how this in turn further influences our experience. Thus, while I ultimately intend to create a theory about feeling, I will start by examining a theory of emotion.

Emotion is ambiguous because at times it refers to strong

behavioural responses, at other times to strong feeling experiences, or even sometimes to both. One reason for this is that—according to our everyday understanding of emotion—we often behave emotionally without paying attention to the feeling of the emotion. This is particularly true for very strong emotions. When they overtake us we feel more *in* them, more *doing* them than experiencing them. We have all witnessed others behaving emotionally who seem unaware of it: "I'm not angry!!"—erupting from a tense face, eyes blazing—"*You're* just being…" That we might display emotions without feeling them, or while feeling something else that we are not necessarily identifying with emotion comes through in the historical background of the terms themselves.

The word *emotion* originates in part from the Latin ēmōtiōn—em, meaning "of action", or ē-movrē, from (ē) "out" and (move-re) "to move"—therefore meaning "to move out". The earlier uses were literally about moving or migrating from one place to another, physical stirrings or agitation, or social and political disturbance. A relation between agitation and conscious experience followed: emotion could refer to "Any disturbance of mind, feeling, passion." Later, emotion came to refer to a distinct *kind* of conscious experience separate from other forms of cognition and intention.[7]

The term *feeling*, on the other hand, developed from associations with inner experience and the sense of touch. It appears to have been associated literally with the sense of touch that relies on physical contact: "To examine or explore by touch", but also more generally with conscious experience; feeling the inner or mental effects of something. Feeling is an older term, present in Old English, whereas emotion is dated to the mid-1500s.[8]

While feeling and emotion have become somewhat mutually defining—with one definition of feeling being "the condition of being emotionally affected"—we should keep the separate

origins of the terms in mind. Emotion is historically related to action and agitation, and feeling to sensing and understanding. The *moving out* aspect of emotion denotes that either we are trying to effect some kind of change in the world around us or that we release an inner pressure in some other way—crying when sad for instance. This is not to say that people do not *feel* emotions—of course people often feel sad when they cry, although they may feel many other things—but rather that emotions are not clearly definable as either conscious or unconscious. Feeling on the other hand must be conscious; it is an awareness. These differences and why they matter will be explained with more detail and clarity through this book. For the moment the distinction is worth keeping in mind as we reflect on existing theories, and whether they emphasise one or the other of these definitions.

A new theory of emotion: Barrett's emotion concepts

Many readers will be familiar with the classical view of emotions put forward in psychology. Proponents of this view understand emotions as *essences*—the idea that common emotions exist objectively in human beings, identifiable by their distinct and traceable patterns in the brain, body and experience. These emotions are considered as having developed through evolution. They are therefore *wired in* and present from birth. While emotion has long been associated with animal behaviour and expression, the modern view of innate emotional responses began in the late nineteenth century, with Charles Darwin's *The Expression of the Emotions in Man and Animals*, and was further developed by William James, whose work on emotion remains widely cited in psychology. From the mid-twentieth century onwards, psychologists established a theory of basic emotions, building on Silvan Tomkins' concept that innate responses of emotion were driven by *affect programs* in the brain.[9] No

consensus currently exists as to which emotions are basic; contemporary psychologists put forward varying lists. However, well-known emotion theorist, Paul Ekman, and Daniel Cordaro state unambiguously: "There is evidence for universality in the following seven emotions": anger, fear, surprise, sadness, disgust, contempt and happiness.[10] Basic emotions are understood as automatically generated. They can happen quickly and be very brief. They are distinguished from other so-called affective states, such as mood—which do not possess universal distinguishing features—and from blended emotions and more complex adaptations developed through experience.

Despite its prominence, this theory has been strongly refuted. Many researchers in psychology have tried to find the patterns or *fingerprints* for these basic emotions. However, as Lisa Feldman Barrett reports in her book *How Emotions Are Made: The Secret Life of the Brain*, research over the past twenty years has failed to find strong evidence for the classical view. Barrett and her research team have carried out numerous studies as well as summarising extensive prior research in meta-reviews. Some more recent studies make use of brain imaging; for instance studies can involve inducing emotions in test participants with images, scenarios or cognitive tasks while data about brain functioning is collected. Rather than finding distinct patterns of activity and expression, they find a great deal of variation; for example a subjective experience labelled as fear might result from very different underlying physiological changes, brain patterns and facial expressions. Equally, the same patterns that produce an experience of fear might also produce a different experience—say, surprise—in a different context.

While Barrett's research finds no clear evidence for emotion fingerprints, it does report other important findings, particularly about the patterns of brain functioning that appear to underlie emotion. One of the most interesting of these findings is how much emotion appears to be related to both interoception and

homeostasis—sensing and regulating the internal state of the body. These two aspects of brain and body functioning are currently attracting much attention in the study of emotion and feeling. Barrett explains interoception as the brain's *representation* of sensations from the body. These sensations are the result of the inner movements and physiological changes occurring all the time in the body. Interoception is the source of experiences of both emotion and feeling:

> Usually, you experience interoception only in general terms: those simple feelings of pleasure, displeasure, arousal, or calmness… Sometimes, however, you experience moments of intense interoceptive sensations as emotions.[11]

She says that interoception is a whole brain process, but also details the way that several brain regions work together as an *interoceptive network* within this whole process. This network involves areas that represent sensations from the body (primary interoceptive cortex) as well as areas that survey the energy needs of the body (body-budgeting regions). The notion of body-budgeting is explained in terms of the brain's need to anticipate the energy needs of the body. For example, when the brain perceives the need for a burst of energy, the body-budgeting regions instruct the adrenal gland to release cortisol, which then floods the bloodstream with glucose, making energy available for cells.

The key point here is *anticipation*—the idea of energy needs that may be *about to* occur in relation to people or situations. Anticipation, in turn, needs to be understood in relation to simulation. Simulation, as used by Barrett, seems to refer to two kinds of activity, both arguably on the border of conscious awareness. It refers to the fact that activity in the brain—for example thoughts about particular actions or body movements or even watching images of others moving—results in actual

changes in the body, which results in interoceptive sensations, or feelings.

> We now have good evidence that your brain predicts your body's responses by drawing on prior experience with similar situations and objects, even when you're not physically active.[12]

This is understood as simply an aspect of *intrinsic brain activity*—the fact that the brain is constantly active, maintaining the internal functioning of the body but also continuously assessing and anticipating, including when we are not actively engaged.

Intrinsic brain activity is also the source of "dreams, daydreams, imagination, mind wandering and reveries".[13] Barrett reports that:

> As it turns out, people spend at least half their waking hours simulating rather than paying attention to the world around them, and this pure simulation strongly drives their feelings.[14]

These concepts lead to one of the central ideas offered by Barrett: prediction. The key theme is that the brain predicts what the energy needs of the body *will be* in a given situation and that prediction results in physiological and interoceptive changes, as the brain essentially tells the body what to do. Feelings and emotions are the result:

> Every brain region that's claimed to be a home of emotion in humans is a body-budgeting region within the interoceptive network. These regions, however, don't react in emotion. They don't react at all. They predict, intrinsically, to regulate your body budget.[15]

Thus, feeling and emotion, as emerging from interoception, are essentially explained as the result of predictions. As predictions they can only be based on past experience. While Barrett does mention feeling, she focuses much more on emotion. This is partly because her point of departure is to refute the classical view, with its naming of basic and generic emotions and its dynamic of rather mechanistically triggered emotion patterns. The interesting result of bringing together her position with the multitude of studies and evidence she presents—evidence which, as said, proposes that emotions are not reactions but predictions—is that emotions are recast as concepts. Once she has explained prediction in terms of simulation and interoception, she then presents this epiphany—that emotions are actually *concepts*. They become something we learn. Without the concept, or word, for a particular emotion, we simply do not experience it. Emotions are labels that we attach to certain patterns of sensation in particular situations. No label, no emotion.

Importantly, Barrett is not saying that emotions do not exist or that in the absence of concepts we do not experience anything; this is why feeling gets a mention. We might have feeling, explained as affect, yet no distinct emotion as such. Thus we have feeling in the ever-present and of-the-body sense mentioned earlier. Indeed, Barrett uses this claim to say that animals may have affect but not emotion. Emotions are a social reality. They are terms we agree upon that enable us to understand and speak about various experiences across situations. Emotions become a mental phenomenon, like other concepts. Feeling, or affect is essentially meaningless, seen as a kind of by-product of interoception, the purpose of which is to provide information for the brain to regulate the body-budget.

Confused? Me too. Barrett's research is meticulous and her ideas compelling but the dynamics of the processes she names—interoception, simulation, prediction—are difficult to grasp. Her

theory also reaches some strange conclusions. Barrett makes big claims for prediction. She says, "Everything you feel is based on prediction from your knowledge and past experience."[16] Not *some* or even *most* of what you feel, but *all* of it. However, she reports, "While predictive brain circuitry is important for affect, it is likely not necessary."[17] This suggests that interoception from the body, in the moment, generating affect is possible. She might mean here that we can experience *meaningless sensations* from the body, but these are not really feelings—presumably they are affect without valence. Feelings and emotions rely on prediction and are conceptual in their nature.

These ideas are outlined in relation to homeostasis, the ongoing regulation that maintains bodily processes within appropriate ranges for survival. Linking the continuous activity of the brain and body that keeps us alive to feeling and emotion opens up important areas for discussion. It highlights that our perceptions of and responses to what is going on around us are always in relation to maintaining life and stability. In our everyday understanding, feelings and emotions seem to come and go, but Barrett's work emphasises the continuous homeostatic background against which this takes place. This is evident in the body budget concept as well as the explanation of intrinsic brain activity, which is just that constant change and monitoring.

Unfortunately, though, her approach—which is a feature of traditional neuroscience more generally—characterises the brain as an *ultimate regulator*. For Barrett the ongoing regulation of bodily processes, anticipated by the brain, results in all our interoceptive sensations: "intrinsic brain activity… ultimately produces every sensation you experience, including your interoceptive sensations".[18] So by anticipating the needs of the body, the brain directs changes in the body while also representing sensations. These sensations may be organised by emotion concepts for full-blown emotional experiences. All of this is directed in and by the brain, which becomes the centre

of agency: "And so, trapped within the skull, with only past experiences as a guide, your brain makes *predictions*".[19] This means that the brain is "wired for delusion".[20] It leads to the stunning claim that "you are an architect of your experience"[21] although given that we have no awareness of the predictive processes—in that we believe we are perceiving and responding to what is actually happening—the notion of *you* becomes fairly meaningless.

An important feature of Barrett's work is that it describes top-down causation. The classical view of emotion does the opposite; it is an example of bottom-up causation. In this view an experience of emotion is caused by various underlying physiological and neurological changes as reactions to various sensory perceptions coming directly from outside. A top-down understanding of emotions as concepts means that they have organising power over experience. The concept itself activates physiological changes, either fed back or represented as interoceptive sensation. However, this top-down model still seems to describe a linear causal sequence, whereas top-down causation suggests more complex causal interactions. Granted, we do often think about causes as operating in a linear fashion. Our everyday thinking about causation tends to be mechanistic and reliant on one-to-one relations. But our habit of linear thinking can become confusing and contradictory—particularly when positioning the brain as ultimate regulator. The role of the body and particularly the relation of interoception to an *actual* body becomes very unclear. The suggestion that we are architects of our own experience also downplays the role of the *actual* circumstances in which we find ourselves to the point of almost disregarding them.

Barrett does leave room for adjusting to actual situations, described as resolving prediction error. She also refers to the similar process of tinkering—which is the role of a so-called *control network* in the brain—and which Barrett explains should

best be seen as an optimizer rather than a controller. She describes a process of weighting the importance of different types of incoming information to "regulate your body budget, produce a stable perception, and launch an action".[22] This may be the most interesting and important aspect of the whole process because it describes a responding, in the moment, to that which actually occurs. Understanding this process might temper the excesses of choice implied in her more sweeping statements. Importantly, "much of this tinkering happens outside your awareness".[23] How might this tinkering be in our awareness, or brought to awareness? If we act and feel so much as a result of our past experiences how *do* we relate to our bodies and our worlds in the present? We may not be open to the world—perceptually and emotionally—in the way we usually believe, but how *do* we engage with the world even if we do not have an objective view of it? Barrett's research introduces important concepts, but these become obscured in the overall view of us as isolated, closed systems. This seems ironic in the setting of social constructionism, although matches it in its belief that all knowledge and experience is ultimately relative or subjective.

Towards a more embodied view

Given that Barrett describes emotions as concepts, yet the relation to the body is unclear, it makes sense to consider her ideas in relation to the field of embodied cognition. This interdisciplinary field has been growing for the past few decades and particularly since the beginning of the twenty-first century. In fact, embodiment has become something of a buzzword in many areas of scholarship; it is not an exaggeration to say that it is one of the major developing themes across the humanities. Being interdisciplinary, embodied cognition is still a disparate field with many viewpoints; one summary describes it as "a loose-knit family of research programs in the cognitive

sciences".[24] In his book *Enactivist Interventions*, Shaun Gallagher elaborates, "in some respects it is more like a philosophical framework for research in those sciences".[25] Gallagher provides an insightful overview of various theories of embodied cognition and explains their relation to aspects of traditional cognitive science. He offers a more nuanced approach than the way embodied cognition is often presented, as in opposition to traditional cognitive science, the theoretical perspective that preceded it. Different views within embodied cognition are not inherently and equally opposed to traditional views, but instead encompass a variety of responses to issues in cognitive science.

Traditional cognitive science rose to prominence in the 1950s and 60s. It was based on a computational theory of cognition and was highly influenced by developments in computing and Artificial Intelligence. The scientific and technical achievements of these times held great hope for understanding cognition as essentially rational computation in the mind. The computer was the metaphor *par excellence* for understanding the mind. If the process of cognition was essentially computation—the logical and abstract manipulation of symbols—then symbols must exist somehow, abstractly, in the mind. Thus, the computational theory goes hand in hand with representationalism, the idea that the mind conceptually *represents* external reality so that it may then reason about the world, make decisions and so on.

Researchers in embodied cognition present an array of critiques of and responses to this view, but they all share an understanding of the body as having an important role in cognition:

> Embodiment thesis: Many features of cognition are embodied in that they are deeply dependent upon characteristics of the physical body of an agent, such that the agent's beyond-the-brain body plays a significant causal role, or a physically constitutive role, in that agent's cognitive processing.[26]

Some developments in embodied cognition have focused on how processes we would usually consider more basic level *perceptions* are involved in the generation of more abstract *concepts*. One area that has received sustained attention is the role of sensory and motor areas of the brain in cognition, investigated with neuroimaging while people perform various cognitive tasks. Researchers have collected much empirical evidence in support of the participation of sensory and motor systems in *higher order* thinking.[27] In simpler terms, this evidence implies that understanding words or objects associated with activity employs areas of the brain that direct actual body movement in that person. Brain areas that govern physical activity are activated in situations in which the person is not actually moving or preparing for movement. A mounting body of neuroscientific evidence exists to support this, but various interpretations are possible. Different interpretations essentially ascribe different causal roles for—and thereby different levels of importance to—the body in processes of cognition. The understanding and role of *representation* can differ significantly among different interpretations, as can the overall sense of the relation between brain and body, and indeed brain, body and world.

That sensory and motor systems within the brain are activated during, for example, language processing, challenges the view in traditional cognitive science that abstract concepts—which are seen as the basis of reasoning—exist separately in the brain and mind. This includes challenging the notion of a truly compartmentalised brain. However, accepting this empirical evidence does not necessarily go against more traditional views of computation and representation. We can see this in Barrett's theory, especially with regard to simulation. Simulation is difficult to understand because we can imagine it as more or less involved with what is actually going on in the body—the brain may be doing this more or less independently of the body. Indeed, some researchers in embodied cognition

have made a distinction between *shallow* and *deep* processing. How much the sensory or motor systems—of both brain and body—are involved might be related to the degree of ambiguity in a situation.[28]

As already mentioned in the discussion of Barrett's work, interoception and homeostasis are receiving more attention as important, perhaps central, to thinking and acting in all areas of everyday life and decision making. Simulation, in this case, relates to interior bodily states and in Barrett's formulation is essentially representation. The brain uses these representations—which appear to be numerous in any given instance—to then form an inference or *best guess* about the upcoming needs of the body. This is a predictive processing model, which is entirely consistent with computation. The brain receives information and makes inferences by way of complex computational processes. Actual physiological changes seem to be another version of *sense data* or information from the environment that the brain receives and then directs. While there must be causal feedback because the brain both receives and generates physiological information, the brain is portrayed as an isolated agent, obscuring any significant causal role for the body. Thus, while the body *appears* to be important, it is essentially an *instrument* of the brain. Gallagher makes the same point in relation to predictive coding models of cognition and considers this position a weak form of embodiment—so weak in fact that versions of embodied cognition with a much stronger causal role for the body may not even recognise it as embodied cognition.

It is worth reflecting on the broader background from which Barrett's research emerges—the psychology of emotion—as opposed to that of embodied cognition, which emerged (at least partly) in the philosophy of mind and cognition. Barrett responds to the classical view of emotion in psychology, which sees emotion as body-based. It describes emotion as stable patterns of change in physiology and expression. Because her

research finds no fixed patterns of response in or with the body, and frames emotion as the brain's concept of what needs to happen in the body, emotion becomes more of a phenomenon of the mind. Conversely, embodied cognition finds that what have for a long time been understood as phenomena of the mind are actually deeply engaged with the body—the question is then how deeply. However, embodied cognition has not been centrally concerned with emotion and feeling, because it began with theories about language and abstract thinking. So in a very real sense, these two areas have had opposite trajectories, even though both are breaking down the distinction between mind and body in important ways. It is for this reason that aspects of the way Barrett presents emotion should be preserved, but within a different philosophical framework. Some of the insights generated in embodied cognition research can support an understanding of emotion as similar to what we normally term *concepts* but also deeply emergent from the body and strongly connected to an environment as well as a person's history—away from the *isolated brain in the skull* perspective. A closer look at and better understanding of feeling, as distinct from emotion, is of central importance to this project.

Specific theories

Two streams of embodied cognition are relevant for a theory of feeling as strongly embodied and environmentally situated—as well as aligned with the view of emotions as concepts. The first stream bases its understanding of cognition on a theory of metaphor. Metaphor is seen as the process by which phenomena that are more easily understood in everyday life are projected onto other, less clear phenomena so that we can define and speak about them. The classic early work in this field, George Lakoff and Mark Johnson's *Metaphors We Live By* was published in 1987. This book was a major inspiration for the field of

embodied cognition and much research followed, with metaphor as a basis for philosophy detailed in *Philosophy in the Flesh* by the same authors. Later work by Mark Johnson—in particular *The Meaning of the Body*, published in 2007—is also an important influence on the theory being developed here.

The second stream of embodied cognition important to this project is enactivism. Influenced by phenomenological philosophy, biology and Buddhist views of mind, its beginnings are often traced to Francisco Varela, Evan Thompson and Eleanor Rosch's *The Embodied Mind*, published in 1991. The enactivist tradition also includes philosophers such as Alva Noë—whose book *Out of Our Heads* is an accessible introduction to an enactivist perspective—and Sean Gallagher whose book *Enactivist Interventions* has already been mentioned. Enactivism conceptualises cognition as an ongoing dynamic interaction with an environment. It proposes a strong version of embodiment that focuses on our continuous present-time engagement with situations, often described as *structural coupling* to an environment. One area in which enactivism has had much influence is in the understanding of perception—in particular visual perception—as an active process made possible by a living body in dynamic engagement with its surroundings.

Both streams of embodied cognition and their particular relevance for a theory of feeling will be discussed in the following two chapters, to show how they complement one another and how they suggest the need for a different underlying metaphysical framework. At this stage it is worth noting that they both have been characterised as approaches that take the body as a *constraint* on cognition, meaning that we understand the world in certain ways by virtue of the kinds of bodies we have.[29] For the metaphor stream this means that those phenomena that form the basis for metaphors are related to the kinds of bodies we have and the kinds of experiences and interactions that are the natural result of being in our human

bodies. For the enactivist stream the body as a constraint on cognition comes through as a more direct relationship—in the style of phenomenology—of a dynamic, living body in interaction:

> cognition is a dynamic sensorimotor activity, and the world that is given and experienced is not only conditioned by the neural activity of the subject, but is essentially enacted in that it emerges through the bodily activities of the organism.[30]

These different approaches to the ways the body constrains cognition can be understood in relation to the idea of representation. The metaphor stream can be interpreted as compatible with traditional notions of representation while the enactivist stream is not. Lakoff and Johnson at times explain the workings of metaphor with reference to neural structures—suggesting metaphorical projection from one domain of experience to another may take place entirely within the brain. Thus, sensory and motor experiences may form kinds of understanding, which exist as neural structures that form the basis for understanding via metaphor in other domains, such as abstract concepts. Seen in this way, the metaphor stream constitutes a weak form of embodiment. If we simply extend bodily activity to include interoception, then this view is consistent with Barrett's view—also a weak form of embodiment. However, Lakoff and Johnson do not see their work as subscribing to representation as involving existent structures within the brain. They explain, "the only workable theory of representations is one in which a representation is a flexible pattern of organism-environment interactions, and not some inner mental entity that somehow gets hooked up with parts of the external world".[31] The idea of flexible patterns of interaction provides an important link to the enactivist conception of cognition, and can also relate somewhat to

Barrett's work—to her insistence that the process of inference is dynamic. To better comprehend these links, we first need a deeper understanding of the theories of metaphor and enactivism. As a preliminary suggestion, to be further explained in the following two chapters, we can say that metaphor tends to focus more on *structure*, while enactivism focuses more on *dynamic engagement*. Not only are both relevant, but the relation between them is a key conceptual thread of this book.

2

The co-creation of experience and understanding

Metaphor

It is tempting to think of metaphor as simply a function of language—a way that language elaborates from descriptions of experience that are somehow simpler or more direct to realms that are more nebulous or, some would say, poetic. This keeps metaphor in line with objectivist theories of truth and language, which are compatible with traditional views of cognition. However Lakoff and Johnson's theory takes a very different view of metaphor. When they say that "the human conceptual system is metaphorically structured and defined",[1] they mean that metaphor profoundly shapes not only our understanding but also our experience in ways that we are not usually aware of.

> *The essence of metaphor is understanding and experiencing one kind of thing in terms of another.*[2]

To offer an introductory example, we commonly use our understanding of journeys to define and speak about relationships. We might *set out* with someone, which might be an entirely *new path* for us. Things could *go along smoothly* for a while but then after an *obstacle* we become unsure *where the relationship is going*. We might decide to end it or *continue on the journey*, which could go *in various directions*. While all of these expressions might seem obvious in the way they refer to relationships, they involve the metaphorical projection of one kind of experience (a journey) onto another (a relationship). The concept of travelling along a path helps us to organise our

experience and understanding of being in a relationship.

Given that we can organise some of our understanding and experience by way of other experiences, via metaphorical projection, we might then easily assume that some of our experiences are more *basic* or *direct* than others—such as journeys, which can metaphorically organise our understanding and experience of relationships. However, this is not the case; Lakoff and Johnson carefully avoid the idea that some experiences are more basic than others. While much of their early work with metaphor is well explained, with many accessible examples and discussions of linguistic metaphors, some of it remains obscure. This is partly because their theory relies on discussions of language, a problem that they acknowledge themselves; in *Metaphors We Live By*, they admit that "We do not know very much about the experiential bases of metaphor".[3]

What Lakoff and Johnson do say, however, is that some experiences—namely, physical experiences—are more *clearly delineated* than others. They explain:

> We typically conceptualize the nonphysical *in terms* of the physical – that is, we conceptualize the less clearly delineated in terms of the more clearly delineated.[4]

Importantly, those experiences that are more clearly delineated are not more basic. For instance, Lakoff and Johnson use the term *natural kinds* of experience to describe experiences that may be *either more or less* clearly delineated. Examples of natural kinds of experience that are more clearly delineated, and therefore used to metaphorically define other experiences, are physical orientations, objects, substances, seeing, journeys and war. Examples of natural kinds of experience that are less clear and may be defined by these (or other clear experiences) are love, time, ideas, understanding, happiness and health.

To illustrate, the metaphors *happy is up* and *sad is down* (an example that is often cited) follow this pattern. Physical orientation (up and down) is projected onto emotion (happy and sad) and then informs many metaphors that we use to speak about being happy or sad. We might say "She was on a high after acing the test", or "He's over the moon about the new job". Or "She's been really down since they broke up" or "I'm in a low mood today". These metaphors, extrapolated from the basic orientation *happy is up, sad is down* are based in genuine correlations in our bodily experience; happiness tends to be associated with a more upright posture and sadness with a more slumped posture. That this metaphor holds culturally doesn't rely on these associations being fixed; happiness doesn't always coincide with upright posture, and upright posture on its own certainly doesn't define happiness, but the correlation happens enough for the metaphor to be understood. Then, for an experience that is less clear, such as an emotion, we can use all manner of expressions for different intensities or qualities of a given emotion—being *over the moon* expresses more than saying *very happy*, while being *down in the dumps* has a different quality than *a bit low*, and both say more than *very sad* or *a bit sad*.

Even so, *clearly delineated* is a problematic term. It projects something about our visual understanding of objects onto the much more nebulous term *experience*. But this only emphasises a very real dilemma—how to speak about experience, particularly non-objective or non-foundational experience. The effect on our experience when we use metaphors—or even the fact that certain metaphors exist in our culture—is not easy to grasp. One key way to understand the functioning of metaphor is with the notion that metaphors serve to highlight certain aspects of our experience while they downplay or hide other aspects. For example, some of the most pervasive metaphors underpinning Western culture at this time are entity and substance metaphors. We metaphorically project material

existence and defined boundaries onto many phenomena. In many respects, this makes it easier to define and speak about them. Thoughts and ideas are a good example. We speak about them as though they are definite objects and this in turn can make aspects of them more definite in our experience; they may seem more lasting or more concrete. However, this also means that we do not attend to other aspects of these phenomena, such as their changeable, dynamic nature. The interesting point here is that *it seems* as though there is an experience to which we can attend and then understand differently—many people who have tried meditation will agree. But how much a different metaphor for thoughts or thinking changes the actual experience of it is not all that straightforward. Ideas, for example, may have a certain contained singularity about them when we attend to them that way or be much more amorphous and indistinct if we attend to them differently. Indeed the former might make them appear more real or important, and the latter less so. Lakoff and Johnson repeatedly raise this point. In *Philosophy in the Flesh* they ask, "Does the metaphor fit a pre-existing qualitative experience, or does the qualitative experience come from conceptualizing what we have done via that metaphor?"[5]

Many of the metaphors detailed by Lakoff and Johnson entail the projection of one highly structured concept onto another. In fact they say that most new metaphors that come into use are just that, the new metaphorical projections of one highly structured concept onto another. One example that Lakoff and Johnson discuss is *an argument is a battle*. Finding linguistic evidence for this metaphor is straightforward: we might *attack* another's point of view or *defend* our own. Our argument might be *shot down* or we might be *forced into a corner* so that we *surrender.* Once we understand *our position* we can *retreat* and *marshall our defences*. The whole concept of battle informs the concept of arguing not only in the way we speak about it. It encapsulates something important about both

expected behaviour and the experience of arguing—the way an argument might play out, and the way participants might experience and respond within an argument. Lakoff and Johnson would say that such metaphors are not simply a matter of language, but that we *understand* arguing, at least partly or on some occasions, in this way. We metaphorically project some relevant yet holistic aspect of the structure of a battle onto an argument, and this gives us a sense of not only how to understand and describe what happens but might influence what actually happens and how we experience it. Of course—particularly for such a highly structured concept—this occurs within a specific cultural context. That the metaphor remains in use is a result of continuing social and cultural attitudes and values about arguing, which to an extent dictates what might happen.

Categorisation

Understanding how categorisation works in our conceptual system helps to clarify the functioning of metaphor. Categorisation is one of our most fundamental ways of making sense of the world. It allows us to organise our perceptions of objects and events by relating them to other objects and events. We generally think of categories as including the same kinds of objects or situations, by way of family resemblance (they all have something in common) based on something like a prototype (best example of a category, that may be entirely conceptual). Thus:

> Categories are neither fixed nor uniform. They are defined by prototypes and family resemblances to prototypes and are adjustable in context, given various purposes.[6]

This is easiest to comprehend in terms of objects. For example, we have general conceptual categories for many features of the natural world; trees, mountains, rivers, lakes. In our lives we encounter many different instances of, say, trees and different types of trees, and by also using the word *tree* across many different instances we form a prototype. The prototype might contain various features that trees usually have—say, a single trunk, branches and leaves—but remain a conceptual version of *tree*, which is a generalised version that doesn't actually physically exist anywhere. So in any given situation we can use the word *tree* and convey that to someone else, even if the actual trees we are referring to don't carry all the features of the prototype—such as pine trees, which have needles rather than leaves or palm trees which have no branches. The generalised version of the word *tree* will be enough in many situations, but not others in which more detail is required.

Categories of objects and events do not need to be seen as definitions that happen after perception. Rather, they may simply be the perception that is relevant to a given situation. This point relates to a view of perception as a process by which we differentiate from generalities rather than one where we add up details; a city dweller enjoying a drive through the countryside might simply see *trees*, while an environmentalist might see *invasive species of trees*. For the environmentalist the same kind of tree might be an *out-of-place menace* in a natural habitat and *a beautiful provider of greenery and shade* in an urban park. Categories are simply built in to our perceptions of things in particular contexts and for specific purposes. The only difference between categorisation and metaphor is that categories are projected onto what we usually think of as the same *kind* of thing whereas metaphors project from one domain, or *kind* of thing, to another. This is why those metaphors that project from the physical to the non-physical are perhaps the simplest to understand. Yet metaphor and categorisation are

best seen as two ends of a continuum. Where one ends and the other begins is not always distinct.

Categories can also be goal-directed, which can mean that a category is formed of objects that may have nothing more in common than a purpose we have in mind. For example, planting trees is one way to reduce carbon in the atmosphere and slow climate change, but so is switching to electric cars, consuming less meat and voting for certain politicians over others. Of course, *purpose* generally refers to some action for a desired outcome, which opens up the potential for much more flexible and changeable categories than basic objects. Still, it is important to recognise that uniting objects or events according to purpose—as in goal-directed categories—does not mean that members of that category have nothing *real* in common. They may simply have nothing *physical* in common, if we understand purpose as something real.

Barrett discusses categories in relation to her view of emotions as concepts. Once again, because she finds no evidence for emotion fingerprints in the body, we need some other explanation as to how we understand emotions and can speak about them. Barrett sees emotions as prototypes we construct from diverse instances based on our goals, with our overriding goal being to regulate our body budgets—let's say, to maintain life and stability. According to Barrett, we construct these categories essentially through naming. Specific emotions have nothing physical in common but words offered in interactions prompt us—particularly as infants and children—to search for similarities across situations. She appears to be saying that some instances of emotion may have *nothing at all in common other than the word for them*. This means that she comes down very strongly on the side of social constructionism: "You are not finding similarities in the world but *creating* them."[7]

However, Barrett also says the following:

> The newborn brain has the ability to learn patterns, a process called *statistical learning*. The moment that you burst into this strange new world as a baby, you were bombarded with noisy, ambiguous signals from the world and from your body. This barrage of sensory input was not random: it had some structure. Regularities.[8]

The notion of regularities doesn't fit well with a constructionist model. We need to understand much more about these regularities—beyond repeated words—and how they influence the maintenance of life and stability—or Barrett's body budget. One of the key claims of this book will be that there are regularities other than words that form our experiences of feeling, but that these are highly individualised—which makes speaking about emotion quite different from experiencing feeling. If emotions are learnt in situations, then when we name and speak about emotions we are perhaps more often than not speaking about behaviour or summarising situations. Nonetheless, individual experience of feelings can still be highly consistent. This may not make sense just yet, but should become clearer through this book.

The interesting parallel between Barrett's recent work and Lakoff and Johnson's *Metaphors We Live By* is the difficulty of characterising experience that is somehow conceptual but prior to language. It is also interesting that Lakoff and Johnson include experiences of emotion as less clearly delineated experiences, but not less basic. Their idea that we unconsciously use metaphorical projection to understand emotion—which presumably also influences our experience of emotion—will turn out to be a more powerful explanatory concept than emotions as goal-directed categories, in the context of constructionism. Barrett's view does make an important alignment between emotion and behaviour. Emotions as goal-directed categories implies action and

purpose, which fits very well with a view of emotion as discernible in behaviour even if the feeling of an emotion is not occurring. However, Lakoff and Johnson's theory offers an important base because they avoid subjectivism (the idea that meaning is inherently subjective and relative) whereas Barrett's social constructionism combined with neuroscience ends up there, with an isolated brain in a skull.

Of course, I have still barely touched on the difference between emotion and feeling, because discussing this difference will be much simpler in the context of a different theoretical framework, which this book will develop. For now, it is worth simply pointing out an alignment between emotion and behaviour—better expressed as emotion and action—is in many ways consistent with Barrett's view of emotion. I will simply be saying in later chapters that feeling is something different again and is meaningful in a way that the body budget concept greatly impoverishes.

Regularities in experience

Simply because metaphors project from one domain to another does not mean that we can project any old concept onto some other realm of experience and make sense of it. Some will make sense and extend our understanding—and perhaps our experience—and some will not. At the same time, metaphorical projection takes place largely below conscious awareness. By highlighting and hiding, metaphor genuinely creates experience; it doesn't really make sense to refer to hidden experience. Again, this is difficult to understand if we only study language, and why a phenomenological perspective is so important in embodied cognition, and why much of the field of embodied cognition has involved applications of phenomenology.

Lakoff and Johnson posit two possible reasons for the existence of some metaphors rather than others; experiential co-occurrence and experiential similarity. These refer respectively to

experiential events that happen at the same time or that are in some way similar. The metaphor *more is up* illustrates experiential co-occurrence; often in the physical world, when we see more of something we also see it increase in space, often upwards. We then project this pattern of the physical world onto other realms; "My bank balance is going up", or "You really need to study to raise your grades", or "Her self-esteem has skyrocketed since she won the competition". The metaphors *happy is up* and *sad is down* are also examples of experiential co-occurrence. Experiential similarity means there is something experientially—but not objectively—similar about the two phenomena, such as journeys and relationships, but this again raises the question of basic experience. For example, what is our *experience* of relationships before we understand it with other experiences via metaphor? Can we even meaningfully ask this question?

Lakoff and Johnson say that "There are many things we understand directly from our direct physical involvement as an inseparable part of our immediate environment".[9] Here, direct physical involvement implies unmediated experience, however Lakoff and Johnson are also quite clear that "all experience is cultural, through and through".[10] Usually we take the term culture to imply a specific kind—one among many possible cultures. While it may seem obvious, some kinds of direct physical engagement with an environment will be common to all humans because of the kinds of bodies we have. That we can name those as belonging to *human* culture rather than specific cultures is an important point. Of course, the ways that human kinds of engagement are elaborated upon in language and social interactions—in specific cultures and groups—can vary a great deal. For now, though, explicitly using the term *human culture* clarifies that we can speak about experience as being natural but not objective and unmediated. This provides an important link to the way that Lakoff and Johnson use the term *natural*, and to a phenomenological perspective of experience as both

gestalt—or holistic—and structured.

They explain that

> *experiential gestalts are multidimensional structured wholes*. Their dimensions, in turn, are defined in terms of directly emergent concepts. That is, the various dimensions (participants, parts, stages, etc.) are categories that emerge naturally from our experience.[11]

In simpler terms, we might say that natural kinds of experience simply arise from being in a human body and interacting in a physical and social world. The dimensions that Lakoff and Johnson refer to are essentially the structure of the ways events tend to happen and the way things tend to appear to us. These dimensions seem to be strongly anchored in our physical experience of moving through the world and encountering situations. For instance, journeys are a natural kind of experience; they just happen in human lives. We simply get used to the sequence of moving our bodies through space. Stages are one of their natural dimensions—at their simplest: setting out, travelling and arriving. Thus, a holistic experience such as a journey involves dimensions that we can name but that are integral to it. The experience just arises but we can discern structure after the fact.

This way that both experience and understanding emerge in interaction–and are both naturally gestalt and naturally structured—is present in *Metaphors We Live By* but is better explained by further developments in embodied cognition, particularly Johnson's concept of *image schemata*, and by looking more closely at how enactivist theories complement and fill out the perspective so far explained. Even so, Lakoff and Johnson's original work in the stream of metaphor remains relevant in much of its detail. The linguistic evidence for the workings of conceptual metaphor is compelling and provides a clear path between objective and subjective versions of truth and reality. At

the same time, much remains to be explored in the co-influence of experience and understanding—and how it arises in the first place, prior to language. The terms experience and understanding can also keep us anchored in usual life while considering more abstract ideas.

Image schemata as basic patterns

In *The Body in the Mind*, published seven years after *Metaphors We Live By*, Johnson deals with embodiment more directly and in more detail. He accounts for some of the experiences that form the basis for metaphorical projection with the concepts of basic-level and image schematic understanding. *Image schema*, in particular, is a concept that has continued through to more recent work. It describes a level of experience that gives "general form to our understanding in terms of structures".[12] The concept of image schemata characterises the sense of understanding and experience that emerges from repetitious and reliable interaction with the world—the way that meaning emerges from bodily experience. This meaning "exists as a continuous, analog pattern of experience and understanding".[13] Johnson discusses this at length in relation to our understanding and experience of physical force. We learn about different kinds of physical force—as repeatable patterns—simply by using and experiencing our bodies from the time of our birth. The patterns that emerge "are embodied and give coherent, meaningful structure to our physical experience at a *preconceptual* level, though we are eventually taught names for at least some of these patterns."[14] For example, *compulsion, attraction* and *blockage of movement* are names for some of the forces we encounter in usual life. Simply by experiencing the push and pull of different forces and observing the movement of objects we come to understand the natural structuring of these forces and form schemata for them.

We can interpret image schemata as a process of categor-

isation applied to situations and activity rather than objects. They "transcend any specific sense modality" and "involve operations that are analogous to spatial manipulation, orientation and movement."[15] Like metaphor, while these patterns are analog and gestalt—and are projected in a holistic way to understand other phenomena—they also have identifiable structure. This is much like Lakoff and Johnson's *dimensions* of experience. The structure usually involves parts (such as other people or objects) and relations (such as causal relations, sequences in time or location). Once again, this essentially describes an understanding of the way things tend to happen.

Similarly to the initial theory of metaphor, image schemata largely follow the theme of physical interaction to generate basic understanding. Much of Johnson's discussion is focused on physical—or sensorimotor—experience. As mentioned earlier, this is a general feature of the field of embodied cognition. In his more recent book, *The Meaning of the Body*, the theme of sensorimotor experience continues. Image schemata are seen to generate meaning from bodily experience: "The meaning is that of the recurring structures and patterns of our sensorimotor experience."[16] These patterns have a logic to them. Yet in this more recent work, Johnson anchors his theory in the work of the philosopher John Dewey, as part of a view of experience and understanding that is more dynamic and interactive. Even though the *structural* aspect of image schemata remains—which includes discussion of neural structures as *maps*—structure is not seen in isolation from a dynamic, living body interacting with an environment. Image schemata are described as neither mental nor bodily, but "as contours of what Dewey called the body-mind".[17]

Feeling is certainly mentioned in the initial theory of image schemata—as something like our sensibility of the arising of embodied patterns. Johnson even expresses the relation between these patterns and language in a similar way to Barrett:

> These embodied patterns do not remain private or peculiar to the person who experiences them. Our community helps us interpret and codify many of our felt patterns. They become shared cultural modes of experience and help to determine the nature of our meaningful, coherent understanding of our 'world'.[18]

In the more recent work, feeling gets a much more substantial discussion, as Johnson brings in a more phenomenologically oriented perspective to augment the theory of metaphor and concepts such as image schemata. This means a more direct attending to experience and its qualities—essentially *the feeling* of experience—as well as its context of arising from non-conscious bodily processes. Johnson is influenced by neuroscientist Antonio Damasio's theory, which understands emotion as related to responding in a situation, with feeling an experience that usually, but not always, follows.

Recall that within the theory of metaphor *emotions* are already understood and spoken about through metaphorical projection and that this projection should also influence experience, even if it is difficult to understand how. So *feeling*, then, as the perception of inner movements and fluctuations from the body is something different. Johnson includes some more direct descriptions of the full range of feeling:

> ...awareness of feeling falls along a continuum that runs from powerful passions that shake us to our core all the way to faint feelings of which we are only marginally, or even subliminally, aware.[19]

He also refers to some phenomenological concepts such as Eugene Gendlin's felt sense and Suzanne Langer's vitality-affect contours which are useful for describing feeling as *more than* and *different from* emotion.

At first glance, the difference here between emotion and feeling might not seem different from Barrett's. Feeling is basically affect, and when we have strong affect we might label this as emotion. However, for Barrett, affect is essentially meaningless and the act of labelling is where meaning is generated, whereas for Johnson, affect—or these vitality-affect contours, arising deeply from the body—is genuinely meaningful. Even though Johnson brings in a much more direct consideration of experience—which is a general theme of the continuing development of embodied cognition as a field—the relation between feeling and these basic structures of our experience (image schemata) remains difficult to understand. Our image schemata may have emotional salience in an ongoing dynamic situation but they are also operating below conscious awareness. This is why, he says, we need phenomenology (or to attend directly to our experience) but we must also go beyond it to understanding the non-conscious structuring of our experience.

I have discussed Lakoff and Johnson's early work and Johnson's more recent work in some detail for a few reasons. Firstly, much evidence has been gathered in support of their theory of metaphor. Johnson also reports that research in linguistics has shown the workings of image schemata in relation to many phenomena in many languages. Indeed *The Meaning of the Body* makes detailed references to empirical research from neuroscience and psychology as well as linguistics and philosophy; these are well-supported ideas. Secondly, I will build upon some of their concepts in this book, so it is important to present them from their original context, particularly for readers who may not know them.

Lastly, highlighting the trajectory of development of these concepts—even if they are explained here in a truncated and simplified form—shows how moving from the more traditional and dualistic view of mind and body in cognitive science

towards a more embodied and dynamic perspective begins to require a different philosophical framework altogether. But that *feeling* remains not quite integrated into the theory suggests a need to further develop a framework. The theory, from the classic *Metaphors We Live By* though to Johnson's *The Meaning of the Body* states many times the need for a different philosophical framework. Johnson refers often to American pragmatist philosophy, and specifically to Dewey's work, as well as phenomenology. This book is an attempt to build a different framework, amenable to both pragmatism and phenomenology but also broader, to better explain feeling while maintaining a central place for metaphor.

3

Dynamic and structure

An important theme of the development of the theory of metaphor—and of embodied cognitive science more generally—is the ongoing peculiarity of attending to the wholeness or gestalt nature of experience while also keeping in mind its underpinnings by identifying structure.

> Experience comes whole and continuous. We make distinctions and abstract out patterns from this qualitative whole. On this view, cognition is an organic, embodied process of enaction in which the organism is dynamically engaged with its surroundings and is not separated or alienated from them.[1]

But something strange happens when we think of experience this way. The more that dynamic interaction comes to the fore, the more any kind of inwardness seems to recede or even disappear altogether. By inwardness I mean the personal nature of my experience. We can talk about experience generally and how it arises in interaction, but still there is the feeling of *my* body, *my* experience. At the same time, the more I emphasise this the more isolated the arising of *my* experience. This path can lead then to Barrett's isolated brain, cut off from the world, doomed to hypothesise and, essentially, hallucinate. We need instead to find a view that preserves inwardness but accommodates social reality and natural human experience. Natural means here both the way it was described earlier in relation to *human culture* but also the way that nature, found in evolutionary and developmental processes, makes living beings

possible, beings at once dynamically engaged in and with the world and highly individuated. The nexus of all this must be feeling and the body—the gestalt and inward aspect of experience, and the living body. These should not be dualistically separated, but understood as perspectives on a single process unfolding over time, made possible only in the context of other processes unfolding over time.

Enactivism

These kinds of themes are strong in the enactivist approach to embodied cognition. In their classic text *The Embodied Mind*, Varela, Thompson and Rosch make definite statements about both this inwardness and outwardness of the body and experience, making reference to the philosopher Maurice Merleau-Ponty. They agree with Merleau-Ponty that embodiment has a "double sense" of "both the body as a lived, experiential structure and the body as the context or milieu of cognitive mechanisms".[2] They also make a clear and important statement that aligns with the way I have presented Lakoff and Johnson's work:

> The fundamental insight of the enactive approach as explored in this book is to be able to see our activities as reflections of a structure without losing sight of the directness of our own experience.[3]

They see a "deep tension in our present world between science and experience"[4] and offer that contemplative practices, such as those practised in Buddhist mindfulness meditation can provide an important counterpoint, as systematic inquiry into lived experience. This is essentially disciplined inquiry *from the inside*. They argue that without any process of inquiry other than the abstract attitude of science, nihilism is very difficult, perhaps impossible, to avoid. While *The Embodied Mind* is more than

twenty-five years old—and mindfulness practices have become much more widespread in Western culture during this time—this problem remains as present as ever. In fact we can identify it in Barrett's theory. Her view of mind does resonate with Buddhist views; the hapless, endlessly guessing brain disconnected from a world is in some ways a similar theory of *no self*. She directly states: "My scientific definition of the self is inspired by the workings of the brain yet is sympathetic to the Buddhist view."[5] But Buddhism offers something completely different from the scientific approach, namely that the natural progression of inquiry will be to *something* (such as compassionate insight) rather than *nothing*. With Barrett's and many modern-day neuroscientific theories we simply end up alienated from ourselves and any sense of real meaning and value to be found in the world or in our experience. Conceptualising the self, as Barrett does, as "part of social reality"[6] doesn't really mitigate this.

Even so, two themes from Varela, Thompson and Rosch's early work seem to have been taken up much more within embodied cognitive science than serious applications of contemplative practices as part of theory making. The first theme, already mentioned, is a focus on action, particularly as inherent in processes of perception. The second is the influence of biology and systems theory.

Active engagement

With regard to perception—which has been most researched in relation to visual perception—action is understood as an inherent aspect of the whole process of perception and not separable from it. Our actions and interactions with the world and the way we are already engaged in any situation mean that visual perception is always for a purpose. This is similar to the functioning of conceptual categories mentioned earlier. We

don't decode details of objects passively entering through the retina in our eyes and then reconstruct them in the brain. Rather, we make discriminations from a situation based on our needs in that situation, which are ultimately needs for action. They are ways we might proceed in a situation and enabled by our whole bodies and environments. Noë explains:

> Seeing is active. When you go to the theatre or a baseball game, you sit up and look around and move your eyes and your head; in this way you engage with the event in front of you. (Indeed, even when you try to be still, your eyes move on their own, making saccades three or four times a second.) Seeing is a kind of coupling with the environment, one that requires attention, energy and, most of the time, movement.[7]

Noë debunks two views that have underpinned vision science. One is the older view that we must explain how the brain recreates detailed, stable pictures of the world around us from poor retinal images, which are "tiny, discrepant, distorted, jumpy, upside-down, gappy, unevenly resolved, only partially colour sensitive [and] time delayed". The second, related view—which Noë terms the *new scepticism*—contends that we should explain how the brain makes us believe we have a detailed, stable picture of the world, when in fact we don't. Both position the brain as the master creator, and the second view, in particular, finds that the world is a *grand illusion*. Noë argues instead that retinal images are not the *data* for the experience of seeing; they are not what we need to explain. Rather, seeing emerges from our skillful involvement with a world that is actually there and "goverened by certain causal and physical regularities".[8] This focus on action challenges the boundaries between action, cognition and perception, as it also breaks down distinctions between brain, body and world in important ways.

Centralising action provides a way of understanding that

cognition is a form of dynamic contact with the world and not separable from the body. However, it can also emphasise continuity to the point where understanding, and perhaps experience, involves the world beyond the body in a counterintuitive way, as though brain, body and world form one undifferentiated system. Noë, for instance, remarks: "We ourselves are distributed, dynamically spread-out, world-involving beings."[9] Such a view emphasises the dynamic aspects of interacting rather than the structural aspects, which, from prior learning, make interaction possible. This also downplays the border of the body as relevant for consciousness.

Systemic adjustments

Even so, enactivism's shift to dynamic language is very important. In this regard Gallagher's recent *Enactivist Interventions* makes crucial inroads into profoundly changing how we can think about cognition and action. In comparison to predictive processing models of cognition, which have the brain making inferences and testing hypotheses as further sensory input arrives, enactivist explanations are simpler and more elegant. For example, Gallagher explains that "on the enactivist model the dynamic adjustment/attunement process that encompasses the whole of the system is not a *testing* that serves better neural prediction; active inference is not inference at all, it's a *doing*, an enactive adjustment, a worldly engagement".[10] This perspective makes it much easier to think in terms of a whole body engaging with the world, continuously attuning and refining responses through numerous complex *body and brain* processes that all influence each other. On this view "the brain is better conceived as participating in the action, enabling the system as a whole to attune to changing circumstances."[11] One of the main differences in these more dynamic explanations that no longer cast the brain as a central processing agent is, quite simply, *vocabulary* that is

more suited to describing a living, active system—as opposed to terms that tend to reify dynamic processes.

Enactivist explanations draw much of this vocabulary from biology: "enactivists insist that biological aspects of bodily life, including organismic and emotion regulation of the entire body, have a permeating effect on cognition, as do processes of sensorimotor coupling between organism and environment."[12] Such whole body regulation in reciprocal causal relation with an environment is well described with reference to theories of self-organising systems.

The concept of emergence, for example, describes the observation that systems can cross thresholds such that new properties just occur, without the need to posit a separate, external causal agent. Emergence is a key concept in enactivism, described in some detail even in the early work by Varela, Thompson and Rosch. We can apply it to the development of Johnson's image schemata. Most of us have seen infants repeat certain movements and interactions, such as placing one object inside another then removing it, placing it back inside, then removing it. Let's say this is an aspect of the development of a *container* schema. At some point the infant has done this enough times that she simply understands that this happens when she manipulates certain objects in these ways. Of course many other experiences will contribute to understanding the basic logic of containment such as the experience of being inside the house or the car, and experiencing her own body as a container. Overall, the understanding generated can be seen as an instance of emergence. There is no separate internal director within her brain instructing this; it just happens as a result of these activities that involve the whole body and brain. We can imagine that there might be a physical and physiological description for how the system has changed—a holistic understanding has emerged from a repeated, sequenced activity—even if we don't know exactly what that is. But this will be description at a

different level. It cannot *equal* the experience of understanding what a container is and how it works. While this is a simplified example, such explanations can make sense of how systems develop over time, generate novelty within themselves while continuously in dynamic contact with a changing environment.

Interestingly, this kind of language that suggests or directly refers to dynamic, complex systems is fairly commonplace in neuroscience, and Barrett also uses it. For example brain activity that generates emotion involves *cascades, dynamic constructions* and *storms of prediction*. But, aside from some small fields such as enactivism and theoretical biology, such language often seems to be used without a strong and explicit explanation of how systems function and what the implications are, in terms of basic assumptions about the world and metaphors that are consistent with these. If we continue to fall back on the idea of the brain as an isolated agent—which, as said is also prevalent in neuroscience, even in the more complex and dynamic predictive processing models—we simply lose ground in our overall understanding of how cognition happens. Even the term *cognition* seems overly separated, which is why the terms *experience* and *understanding* were used at length earlier; they make room for broader views. Explanations of the development and functioning of systems, as well as the philosophical principles that underlie these, should simply give us a foundation for more descriptive and consistent metaphors. The applications of these in understanding feeling and the body could be far-reaching because they could change our ideas about the meaning and value of human life, possibly even life altogether.

Of course, theorising feeling and the body through some of the ideas already presented and in a philosophical context should help to situate the theories discussed. The point here is to develop underlying theory rather than to disagree with empirical research, which Barrett's view of emotion, the theory of metaphor and the enactivist perspective are all well supported

by. The purpose also is not to claim that the brain doesn't have any special functions. Rather, these need to be kept in perspective, as neural processes made possible by and in reciprocal relation to other processes. Some research in neuroscience appears to be heading that way, particularly in relation to the role of interoception and homeostasis. The neuroscientist Antonio Damasio develops a perspective on this in his most recent book *The Strange Order of Things*. He provides a vital perspective on feeling and the body—particularly in relation to the brain—that augments all those already discussed. Damasio's previous work on brain and body relations is also an important support for the primacy of action put forward by the enactivists, as well as the relation between emotion and action.

Damasio on feeling and the body

Damasio explores the emergence of consciousness in individuals, and cultures in societies, through the themes of feeling and homeostasis. He outlines an expanded view of homeostasis, which links directly to all forms of biological life:

> Homeostasis is the powerful, unthought, unspoken imperative, whose discharge implies, for every living organism, small or large, nothing less than enduring and prevailing.[13]

Feelings are essentially the subjective experience of this, "of the state of life—that is, of homeostasis—in all creatures endowed with a mind and a conscious point of view."[14] Rather than limiting homeostasis to the more narrow definition of maintaining a steady, balanced state necessary for survival, Damasio presents homeostasis as oriented towards flourishing as well as health and stability. It has a natural direction that is conducive to the development of future wellbeing. This allows him to say that *feeling* is the impetus for the development of

cultures. Cultures, or social, minded processes, provide the means to intervene in individual, biological processes. Cultures develop ways to regulate and improve human lives.

Building on his previous work, Damasio places feeling in the context of evolutionary development. This provides a link between feeling and the sensing and responding to an environment present in simpler forms of life such as bacteria. The development of multicellular life brings ever more refined modes of sensing an environment, along with greater inner differentiation; the development of organs and systems within organisms. Importantly, the more complex biological interiors of organisms eventually require more sophisticated means of coordination, initially chemical and later neural:

> The coordination was provided by the endocrine system via chemical molecules known as hormones and by the immune system, which ensured inflammatory responses and immunity. The master global coordinators followed suit. They were, of course, the nervous systems.[15]

In some ways we can loosely identify a similar narrative to Barrett's, in the focus on the link between homeostasis and feeling—or, in Barrett's case, emotion—and its further regulation by cultural processes. Indeed, Damasio's metaphor here of nervous systems as master global coordinators might also be seen as commensurate with Barrett's perspective, and most of neuroscience. Damasio uses the term *surveillance* as a metaphor for interoception, which he also terms visceroception because so much information about the state of life in the conscious organism comes from the viscera (the organs, blood and smooth muscle). He describes interoception as tiered, with a level that is unconscious and can make regulatory adjustments in the body, and a level that is conscious and produces subjective states of feeling. Surveillance, or interoception, as he sees it, does allow for anticipation and prediction, but also for "straightforward

information" about the state of the body.[16] Thus, interoception is a genuinely receptive as well as predictive process.

Damasio emphasises the evolutionary development of interoception from earlier neural structures that were directly acted upon by chemical molecules in the blood—thus, stronger reciprocal relations between chemical and neural signalling. He describes the increased separation between these two types, forming more and more distinct systems. Damasio then names (in evolutionary terms) the *old interior* of the viscera and the *new interior* of the bony skeleton, skeletal muscle and sensory portals (eyes, ears, etc.). The new interior receives information from and maps changes in the old interior; "These images of the old internal world are none other than core components of *feelings*."[17] The visceral, old interior is identified with chemical signalling and homeostasis and the new interior with the specialised senses and voluntary movement. Thus, the new interior is oriented both inwards, to the state of the viscera and outwards, through body movement and the sense organs. Importantly the new interior also has a protective function.

> the vulnerabilities of the new internal world are smaller than the old. The skeleton and the skeletal musculature form a protective carapace. It sturdily envelops the tender old world of chemistries and viscera.[18]

But Damasio is also careful to describe the direct interactions between chemical and neural that continue to exist in the body. These occur in areas without a blood-brain barrier; in some areas of the ventricles (fluid filled spaces) in the brain, as well as in the *dorsal root ganglia*. These ganglia (bunches of nerves) are located along the spinal column and link peripheral nerves with the spinal cord. They are where body signals are conveyed to the central nervous system. The lack of blood-brain barrier here means that the neurons do convey peripheral signals but, at the same time, "they are modulated *directly* by molecules

circulating in the blood".[19] Furthermore, interoceptive signals from the body are mostly conveyed via nerve fibres that lack myelin—a coating that acts as insulation, supporting faster, more efficient signal transmission. This coating is present on nerve fibres that convey information about the external world from the special senses (eyes, ears, skin) but not from the interior body. Homeostasis, then, "is in the hands of the electrically leaky, slow, and ancient unmyelinated fibers",[20] which are much more open to their surrounding chemical environments than the newer, myelinated fibres.

Even with increasingly complex internal separation for coordination, areas of greater integration persist, and more and more of these integrations are being uncovered in research.[21] Furthermore, the part of the nervous system that surveys and responds to the old interior "has always worked cooperatively with the immune and endocrine system within that same interior".[22] This suggests that separation between systems is more graded and systems more blended than we ordinarily assume or even know about yet. The enteric nervous system (in the gut) is also outside of the usual brain and body separation. Most of its hundreds of billions of neurons function intrinsically (meaning that they communicate among themselves), suggesting much greater internal regulation from within itself as a separate structure than direction from the brain. Interestingly, Damasio suggests the name *first* brain for the enteric nervous system, more evolutionarily accurate than the popular term *second* brain.

Given such complexity of integration and separation, it appears that Damasio doesn't actually view the brain or nervous system as master controller or ultimate regulator. In fact he describes the nervous system as, historically, an *assistant* or "a servant of whole-organism homeostasis".[23] He sees the relation between brain tissue and the body as key in understanding the emergence of feeling and consciousness and, eventually, culture,

creativity and intelligence. He remarks that "this integrated mutuality is most often overlooked in discussions of behaviour and cognition".[24]

Damasio's perspective on the importance of neural structures beyond the brain, places where the body and nervous system are functionally blended, and whole body systems and relationships in understanding consciousness and feeling aligns well with the enactivist perspective. The important counterpoint that Damasio's work brings is his emphasis on the strong boundary between the individual organism and the surrounding environment. There is much more dynamic activity and communication going on within an organism than between it and an environment. This is present in the enactivist perspective; organisms as living systems manifesting operational closure is certainly a key aspect of enactivism. But, as already mentioned, it is minimised when present time dynamic interaction in an environment is emphasised. Damasio's view maintains the private, inward nature of feeling in the context of the organism as a complex system, and imbues it with real meaning. This meaning may be likened to immanent meaning that just emerges from activity, as with the development of image schemata—meaning that is experientially real but not objective or unmediated. In this context, how conscious experience arises from processes that are not conscious is a key issue. Damasio's focus on feeling also augments the enactivist approach where it has tended to focus heavily on sensory-motor activity but less on feeling. Gallagher also notes this "neglect of the relevance of affective aspects of embodiment". He states that "Bodily activity… involves a complex ensemble of factors that govern conscious life."[25]

A hierarchical model of consciousness

In earlier work, Damasio describes the emergence of consciousness and the emergence of a self using models of hierarchical organisation, consistently placing emotion at the level of complex action that precedes awareness and feeling as an emergent level of consciousness. If we understand that action is always for a purpose—in the expanded sense of flourishing, even in simpler organisms—*and* that action need not require awareness or consciousness then we can simplify the difference between emotion and feeling. Emotion is a class of action with strong purpose. Damasio lists emotions "in the more conventional sense of the term" among the causes of feeling, and describes emotions as "action programs activated by confrontation with numerous and sometimes complex situations."[26] These may give rise to certain kinds of feeling, but feeling encompasses a much broader range of experience. The key to understanding feeling is that it is ubiquitous but "often so subtle that it does not demand attention for itself".[27]

One of the reasons for this subtlety of feeling is that we are often not attuned to it. Rather, we are attuned outwardly, with our attention often taken up by the world as the setting for our more or less habitual actions, by languaged thoughts and interactions, or both at the same time. But this higher level, language—or *extended* consciousness, in Damasio's terms[28]—emerges from the lower level of feeling. Feeling is not a report back to the brain from the body, even if it functions *on some level* as information for what comes next. Nor is it a by-product of the brain's instructions to the body. It is the holistic emergence of conscious awareness that makes other, so-called *higher* forms of consciousness possible. While it has a quality of being within an organism or a human being, it is the experience of a whole body and always in relation to an environment. Of course, feeling changes and differentiates over time, and

particularly through development, and naming experiences does influence and refine this process. But, as with the way concepts emerge and extend metaphorically, differentiated feeling does simply arise through repetitive types of activity and interaction.

Damasio's work is interesting and often breaks new ground because he is very much of a biological (or neurobiological) perspective but he also directly faces feeling in the phenomenological sense of experience. As with Lakoff and Johnson, Damasio's work features the concept of representation as *neural maps*, although he focuses more on interoceptive maps of the body that can stand in for the actual body in other cognitive processes. This fits quite well with Johnson's image schemata. But the term representation continues to carry unclear and objectivist connotations, well summarised by Gallagher, who describes it as "an awkward place-holder for an explanation that still needs to be given in dynamical terms of an embodied, environmentally embedded and enactive model."[29] Shifting the language around representation might make it less problematic, although as Gallagher also mentions, alternate, non-representational explanations might make the concept redundant. Even if summary forms of understanding have a causal relationship to patterns of neural events, they must also have a causal relationship to a living body in a changing environment. Such patterns—which are a feature of Barrett's view of prediction as essentially dynamic—cannot be sensibly spoken about outside the context of a body and experience, all of which is highly patterned and has developed over time, both in an individual and the evolution of a species. In terms of experience, feeling and other kinds of conscious awareness that seem more controllable, such as abstract thinking or imagining, need to be understood both in their phenomenal aspects (how they appear in awareness) and in the world in which they arise and are deeply related to.

But all that I have said so far requires much more

explanation. For example, I have referred to hierarchical organisation without explaining it. All of the authors so far discussed also at some point refer, either directly or implicitly, to hierarchical organisation, a model of causal interaction that has explanatory power in complex systems. However its causal principles are not always carried through and the deeper implications of it as a way of looking at the physical world are discussed even less. This book will explain some of these principles and how they can help to make sense of living systems in a way that positions experience and understanding in relation to the physical and phenomenal world. These ideas help to generate a theory of a self—human and individual—that is both stable and real but deeply relational. This, in turn, supports a view of feeling as highly individualised but systematic and sensible in ways we usually overlook in everyday life, and as a separate phenomenon from emotion, which is better identified with purposeful action. The concept of metaphor, understood as both dynamic and structure, will help to organise this view of feeling.

A broader philosophical explanation that can make all of these phenomena more comprehensible demands that we move beyond either/or distinctions between subjective and objective. It is as much about new uses of language as about new ideas. If these kinds of language, and the ideas that support them, are developed so that they come into more general use then some of the discrepancies among theories could very well disappear. In *Enactivist Interventions*, Gallagher presents the enactivist model of embodied cognition as a philosophy of nature, one which should both respond to and challenge science. This book aims to generate interdisciplinary theory, but will present speculative naturalism and process metaphysics as a base. It is not in the tradition of enactivism as such but is very much in line with this aspect of the enactivist project. But the purpose overall is not so much to explain cognition as to show that feeling is central to

human life in a way that we—if we follow the dominant neuroscientific paradigm—no longer seem to understand or appreciate. Some of the biggest differences among the theories discussed in these opening chapters are where feeling, even consciousness, is placed, in terms of both its role and its importance. The differences by which we then frame these theories have enormous implications for the way we see ourselves and live our lives; feeling as the quintessential experience of being alive or as the by-product of an instrumentalising brain; as full of meaning or bereft of it; as ever-present, tangible *and* mysterious or as only of functional, survival value. These differences matter much more than the language of neuroscience can cope with.

PART 2

THEORIES OF NATURE

4

Beyond the dynamics of dualism

Feeling is difficult to explain. This is evident in the intricacies and inconsistencies of all the theories already discussed. It is at the heart of the problem of understanding the relation between mind and body. While our ability to observe physical processes (not least neural processes) continues to advance, we still cannot fathom the relationship between consciousness and these processes—or consciousness and the physical world in general. We seem genuinely trapped in a dualistic mode of thinking.

Even so, it is not immediately obvious for whom this dualism is a problem. Many neuroscientists, for example, work under the tacit assumption that advances in our technical ability to observe neural processes, along with the accumulation of detailed knowledge of such processes, will eventually explain the relation between mind and body. Thus, all will eventually be explained in terms of physical processes and dualism is not a deep conceptual problem. In philosophy this view is commonly known as materialism. An interesting extension of a materialist perspective is the idea that when this happens, when we have mapped all the details of human brains, the field of psychology will become redundant. Neuroscience will eclipse psychology. Yet this is only one example of a materialist point of view. A biologist more interested in broader physiological processes might believe that these, along with neural processes, will eventually generate a full description of mind.

At the complete other end of the spectrum, many people hold religious or spiritual beliefs that a transcendent force existed before and continues to pervade the physical world.

Some people living more secular lives even invoke beliefs about transforming the physical world with their own minds. Such beliefs in transcendent realities tend to also render the relation between mind and body unimportant; some kind of god-mind, collective intelligence or individual mind is the ultimate explanation for everything. This view is known in philosophy as idealism. While materialism and idealism have conceptual roots in ancient Greek philosophy, their modern forms are relatively recent in the history of Western thought.[1]

Materialism and Idealism

Many people in contemporary Western societies identify as believing in materialism—the idea that the physical world is what basically exists and minds are wholly dependent upon and can be explained in terms of it. This is probably the view of many working scientists, with the exception of physicists. But many people with a professional or personal interest in science will nonetheless see the relation between mind and body as a genuine conceptual problem, either for science or philosophy or both. Even if we live by the view that science generates objective knowledge about the physical world and everything that exists is basically physical matter (a materialist belief) if we recognise that the mind-body problem exists in a deeper way than will be solved simply by adding more detail, we are effectively questioning materialism. Of course many people maintain religious or spiritual beliefs while also seeing science as an accurate description of the physical world, and might understand the mind in relation to these spiritual beliefs. But for those whose lives are entirely secular, consideration of the mind-body problem may also simply reflect an aim to understand the natural duality in our experience of our own minds and bodies—between the apparently inward, phenomenal nature of our experience as distinct from our outward, physical bodies.

Many nuanced philosophical positions may be taken in relation to materialism and idealism, and the dualism they arose from, and many different accounts of their cultural and philosophical development are possible. The philosophical biologist Hans Jonas (whose book *The Phenomenon of Life* was published in 1966) provides an expansive narrative of the history of dualism. He discusses its development in relation to perceptions of life and death as experienced through the body, beginning with premodern thought. People in premodern times were more likely to observe the pervasive presence of life in the world. Life itself was ubiquitous and people struggled to make sense of mortality, to solve "the riddle of death".[2] However this orientation towards life changed with scientific advancements during the Renaissance and leading into the scientific revolution. Modern thought eventually became the complete opposite; making sense of life became the challenge.

One major change, often attributed to the scientist Francis Bacon (1561-1626), concerned the way nature was investigated; the new *method* of science. According to this new approach, the best way to gain knowledge and understand nature was to manipulate and dissect the physical world, relying on experimentation and impartial observation. It assumed that sense perceptions provided an objective perspective. Nature eventually became understood as inanimate masses and forces operating according to laws—as a machine made of essentially dead matter. This reductionist method and the correlate mechanical view of the world was incredibly successful in developing our knowledge and understanding of *some aspects* of the natural world, certainly how we might manipulate nature to our human ends. Yet this view of nature made life itself difficult, even impossible, to explain.

> Death is the natural thing, life the problem. From the physical sciences there spread over the conception of all existence an ontology whose model entity is pure material, stripped of all features of life.[3]

The concepts of objective observation and dead matter resulted in a more radical separation of observer and observed, subject and object than had come before—a more complete dualism than its predecessor in Greek philosophy. This version of dualism was epitomised in the philosophy of René Descartes (1596-1650) and remains pervasive in Western culture.

However, Jonas explains that changes in religion were equally, if not more important to the development of modern dualism as the rise of science and its rigorous investigation of nature. He describes the discovery of the *self*, which began in Orphic (ancient Greek) religion but culminated in the recognition in Christian and Gnostic religion of "an entirely nonmundane inwardness in man".[4] Jonas means here that more and more emphasis was placed on the *inner life*, the human soul, and its "complete foreignness"[5] with respect to nature or the world. Thus, it is important to recognise that the development of modern dualism in science reflected and reinforced developments in religion. The universe of essentially dead matter could only be animated by a transcendent god. Similarly, the essentially dead body must be animated by a transcendent mind or soul.

The more complete split between self and world, mind and nature—which was "long sanctioned by religious doctrine"[6] and then *reinforced* by scientific developments—made the views of materialism and idealism possible. These views are *monisms*. They are metaphysical positions that explain reality with reference to a single phenomenon, either matter or mind. The important point to grasp is that these perspectives only occur in relation to the dualism that preceded them, which is why Jonas

sees "the rise and long ascendancy of dualism"[7] as so pivotal in Western history. Eventually the success of science paved the way for a complete determinism that had no need for the invisible workings of god.

> Accordingly, it is the existence of life within a mechanical universe which now calls for an explanation, and explanation has to be in terms of the lifeless.[8]

We should take note of the historical trajectory of these ideas because it highlights that materialism is really only part of the story. Materialism gives up the presence of life as something that should be central to any explanation of the world in which we find ourselves. Even with conceptual advances in so many fields of science, particularly those exploring complex systems and emergent properties, explanations remain limited by materialism as one side of a discontinuity. It is very difficult, probably impossible, to create satisfactory explanations for complex phenomena from materialism alone. This is why the metaphor of the machine, central to the development of science, has given way to the metaphor of the computer in much of neuroscience. The brain remains a machine, but now just a more complex one. When the relation between this complex machine and the mind is faced and named by philosophers the result is simply another dualism.[9]

Tending towards the opposite

Identifying that materialism, as a concept, relies on the pre-existing dualism clarifies aspects of Barrett's work that render some of her interpretations confusing. It explains why it contains a mix of perspectives. In Barrett's formulation emotions are, importantly, released from the more deterministic, classical view that specific emotions occur when fairly fixed patterns of

physiological change are triggered. Barrett doesn't find a consistent match between our labels for specific emotions and specific changes in physiology, facial expression or neuronal firing patterns. Thus she finds that our experience cannot be explained in purely physical terms, which is why she suggests that emotions are concepts and socially constructed. She then suggests that we can change our experience by substituting concepts, such as interpreting anxiety as excitement. Even though the socially constructed concepts are ultimately described as brain processes—which we usually imagine in physical terms, even if they are complex and dynamic—experience ends up having not much to do with the physical. Experience is then described with statements that could easily be read as idealist, such as that "you are an architect of your experience".[10] When the irreducibility of human experience to physical processes points to the need for new explanations these explanations tend towards the opposite (idealism) because the dualism is already implied in the materialist assumptions of the science that we begin with. There simply aren't other positions available. This reveals that the conceptual change required to better describe and understand experience and its relation to the body must occur in the most fundamental concepts through which we understand the world. We must move beyond this initial dualism.

A dynamic of flipping to the extreme opposite view, from materialism to idealism, when new explanations are sought exists more broadly in contemporary Western culture. In fact we can identify this dynamic in the development of the field of psychology. Psychology was made possible by the prior existence of the scientific method of experimentation and impartial observation, but it turns towards human experience rather than the outward nature of the physical world. However, an equally important precondition was, as mentioned earlier, the very notion of a self, of the inner life as separate and important,

which developed through Christianity. William James (1842-1910), whose work is highly cited in introductions to the topics of emotion and feeling, is widely regarded as the founder of psychology. Sigmund Freud (1856-1939), born little more than a decade later, was the founder of psychoanalysis. Both James' ideas about psychology and emotion, and Freud's theories of the self, including concepts such as the unconscious, have had an enormous influence on our psychological views. Some have found their way into our everyday life and remain current in contemporary Western culture.

Importantly, these two grand thinkers in psychology developed highly influential ideas in the late nineteenth and early twentieth century, also a period of increasing secularisation. Indeed both Freud and James wrote about religious experience as personal feeling.[11] Thus, psychology developed (at least in part) where a gap emerged in ideas about the meaning of human life. The religious or spiritual import of the inner life or human soul was being questioned and explored. It makes sense that the close study, in the style of science, of inner life would follow. The replacement however—materialism directed at experience—was essentially *no meaning*. This is the nihilism that Varela, Thompson and Rosch mention as the endpoint for science as the only mode of inquiry.

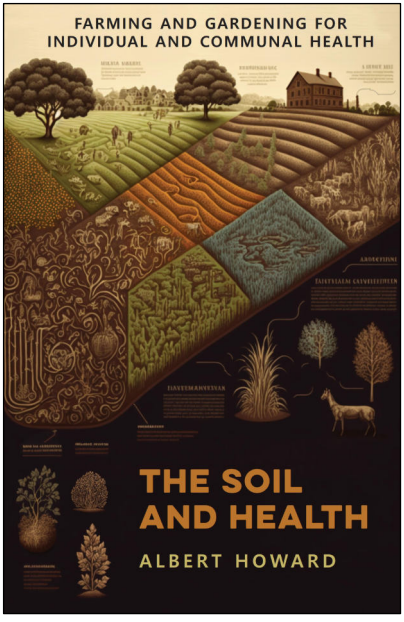
In his book *The Triumph of the Therapeutic* (published in the same year as *The Phenomenon of Life*, in 1966) Philip Rieff describes this switch in attitudes to human life by way of the development of psychoanalysis in the context of the scientific method. He distinguishes between two types of theory. The first, prior to the scientific revolution, did not see knowledge, meaning and value as separate: "Theoretical knowledge is therefore of the good; the ideal is the most real."[12] The idea behind this is that an order of things exists and we can discover it, which not only tells us how things are (knowledge), but our place in the universe and how we should live (meaning and

value). The attitude of science, however, did not struggle to find the way things are so that we might *conform* to this reality, to find some way to live in harmony with a natural order or seek direction, solace or reassurance. Rather, science seeks knowledge of nature only so that we might *transform* nature to our own ends. This knowledge tells us nothing about ultimate ends; it is completely bereft of value. Therefore, "theory becomes actively concerned with mitigating the daily miseries of living rather than with a therapy of commitment to some healing doctrine of the universe".[13]

Transforming the inner life

In the context of mechanistic and reductionist science attempting to find explanations for the inner life that could replace the idea of a separately existing human soul, the individual human being is the natural unit of explanation. Thus, in historical and theoretical terms, psychology attempts a scientific explanation of the individual self. Therapeutically, psychology tends to uphold improving life as an important goal. In relation to improving the inner life, feeling and emotion are obviously important, even central. However, as a *science*, psychology must uphold the same ideology; improvement must mean increased control over nature, in this case the nature of the inner life. Put simply, psychology should help us to feel better by increasing our power over the inner life by means of interventions. Rieff puts it this way: "the aim of psychoanalysis is the aim of science-power; in this case a transformative technology of the inner life."[14]

These are somewhat abstract points and not necessarily the way ordinary people in Western culture see things or live their lives, whether they use the interventions of psychology or not. However, as an underlying ideology the directive of gaining power over nature in an essentially meaningless universe



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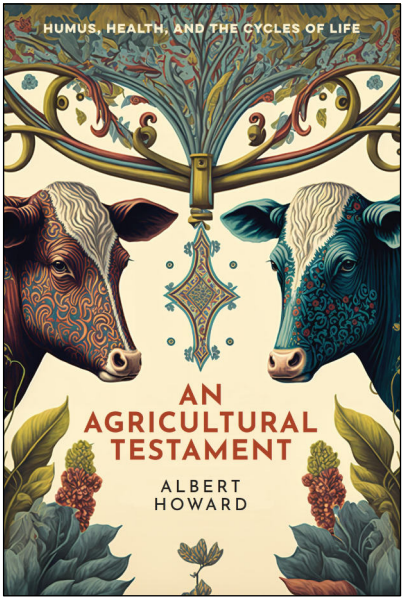

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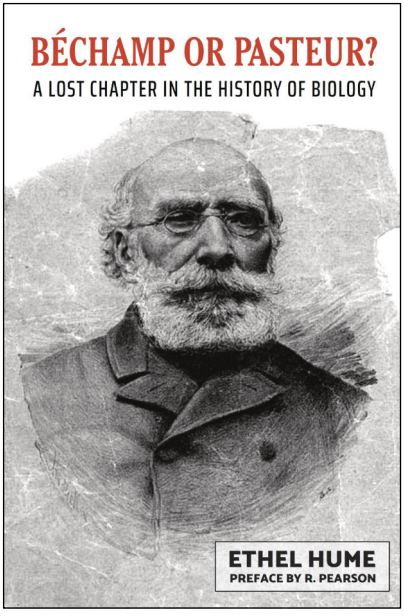

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Ethel Hume / Robert Pearson

Pearson's *Pasteur: Plagiarist, Imposter* was originally published in 1942 and is a succinct introduction to both Louis Pasteur and Antoine Bechamp, and the background to the troubled relationship that they shared for their entire working lives. Ethel Hume documents the evidence in detail, so that there is no escaping the obvious conclusion – Pasteur was a fraud.

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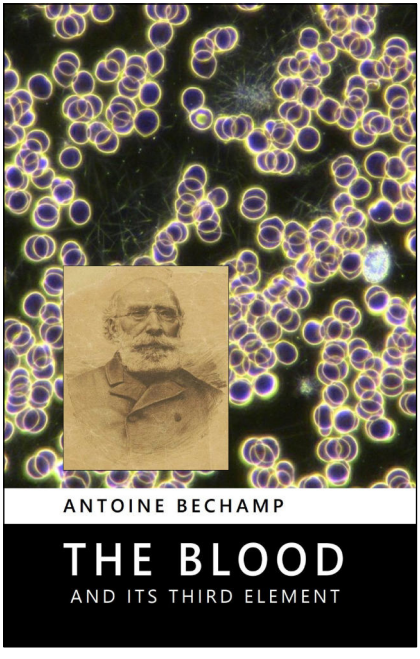

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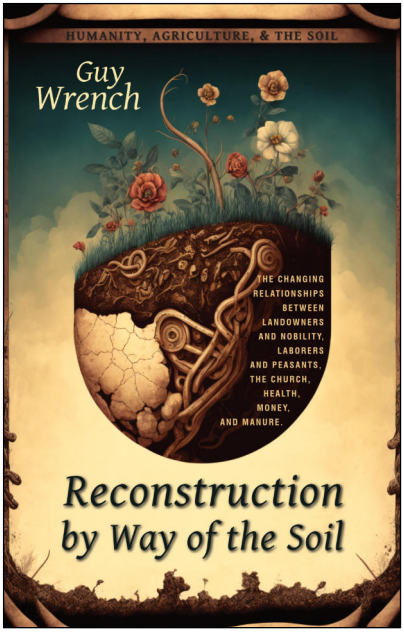

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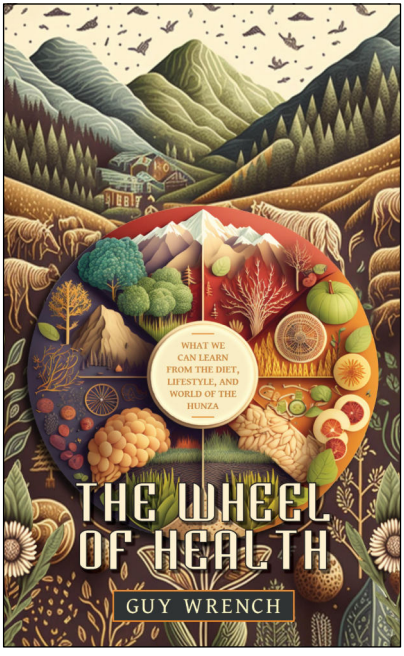

The Wheel of Health

Dr Guy Wrench

The Hunza of northern Pakistan were famous for their extraordinary vitality and health. Dr Wrench argues that in part at least, this is because their food was not made 'sophisticated', by the artificial processes typically applied to modern processed food. How these processes affect our food is dealt with in great detail in this book. What Dr Wrench uncovered in his researches goes deeper than just food, though. It's about water.

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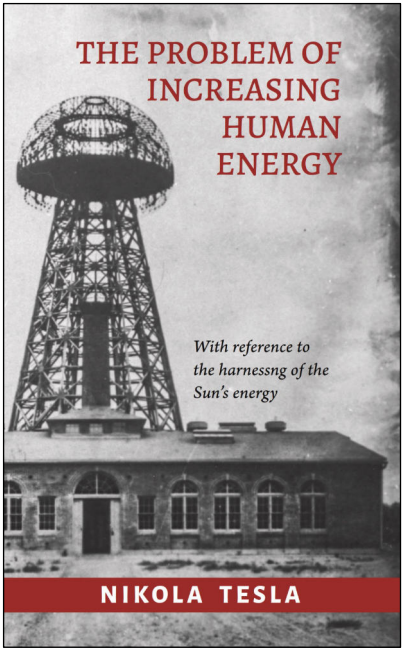

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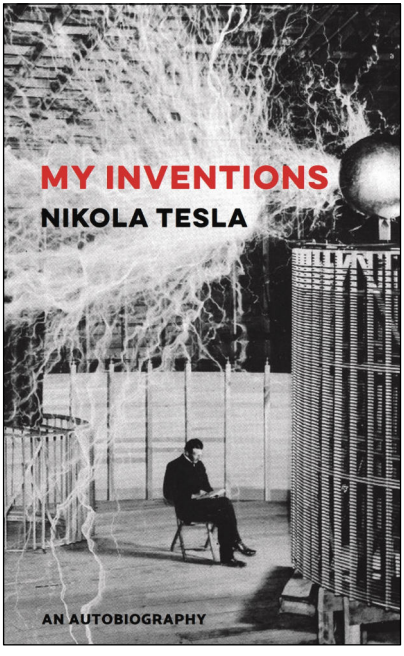

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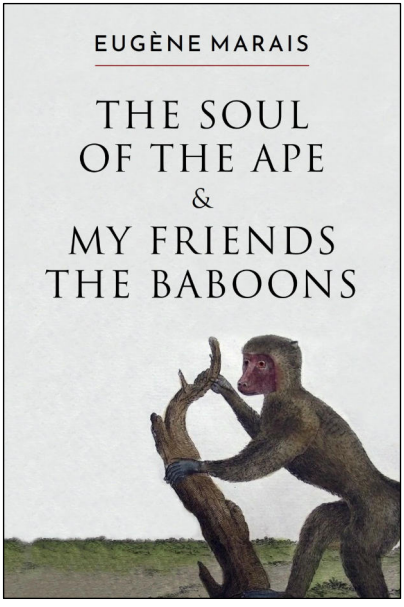

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Eugène Marais

Includes two works by Marais written after his period spent living among a troop of baboons in the South African veldt. *My Friends* was written for a newspaper readership. *The Soul of the Ape* was the more serious scientific document. The excellent introduction by Robert Ardrey was part of the 1969 edition, and adds greatly to an appreciation of the importance of this text.

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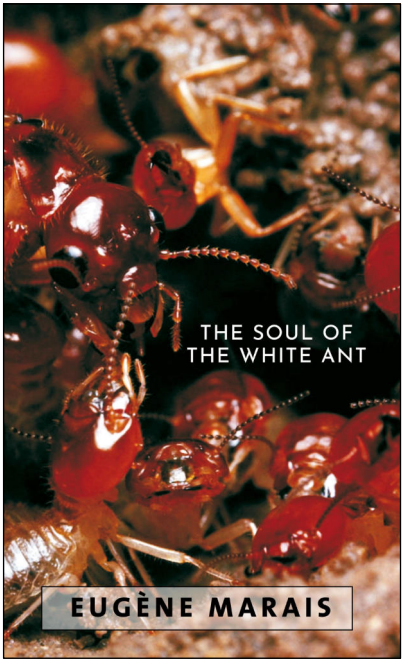

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The amazing results of a long, close study of the lives of termites. Eugène Marais compares the infrastructure of a termitary to that of the human body. Writing from the heart, this scientific author who is also a poet instills a wonder in the reader, of the incredible intricacies of nature, in a light-hearted, easily readable manner.

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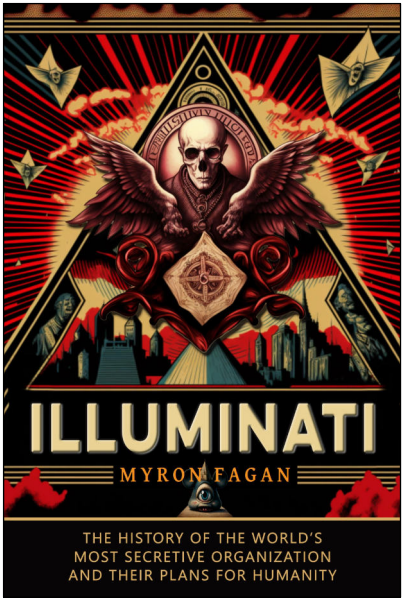

Illuminati

Myron Fagan

This book describes how the Illuminati became the instrument of the Rothschilds to achieve a One World Government, and how every war during the past two centuries has been instigated by this group. This is an historical text with names, dates, organizations and mode of operations, all exposing the octopus gripping the world today.

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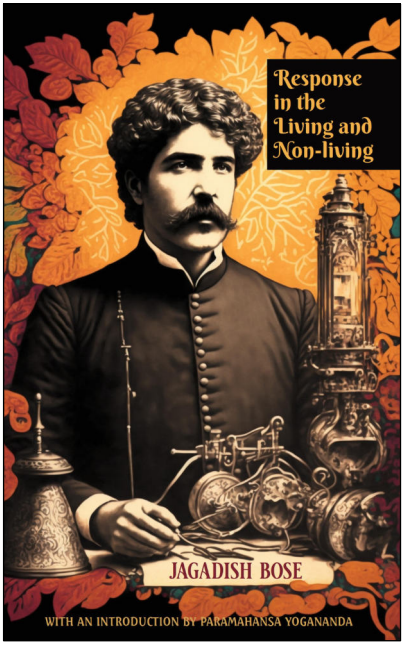

Response in the Living and Non-living

Jagadish Bose

This is one of the great Indian scientist's earlier works. His experiments showed that in the entire range of responses – regardless of whether the subject is metallic, plant or animal – the responses are identical. The living response, in all its diverse modifications, is a repetition of the responses seen in the inorganic. *Everything is alive.*

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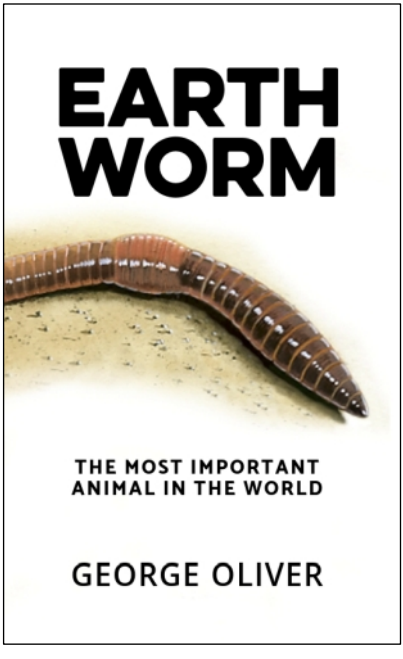

Earthworm

George Oliver

The author returns the reader to a time and methodology where people took responsibility for what they did and what they produced. In this world of spiraling food prices, huge landfills, diminishing food supplies, loss of topsoil, and water pollution, the reader is reminded that the world's most important animal could well be the humble earthworm.

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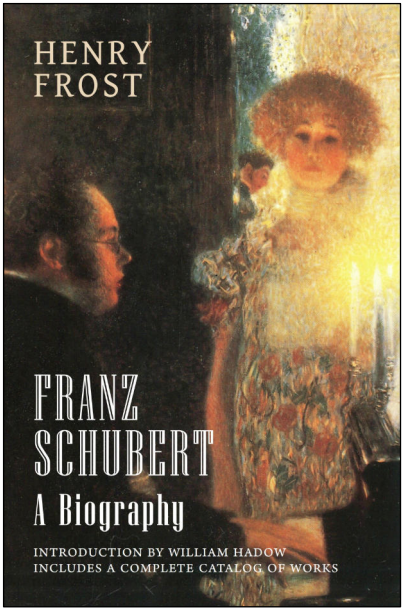

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Henry Frost

"With faith man steps forth into the world. Faith is far ahead of understanding and knowledge; for to understand anything, I must first of all believe something. Faith is the higher basis on which weak understanding rears its first columns of proof; reason is nothing but faith analysed."
– *Franz Schubert*

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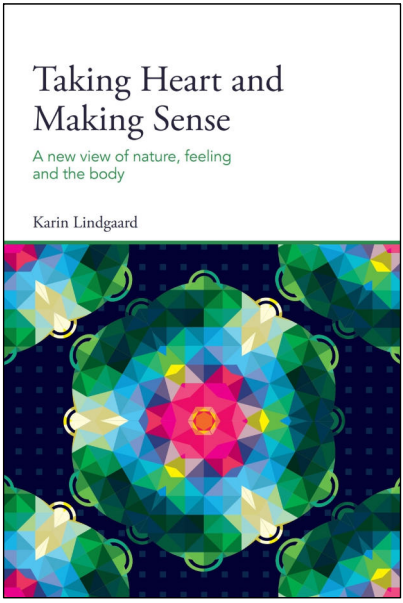

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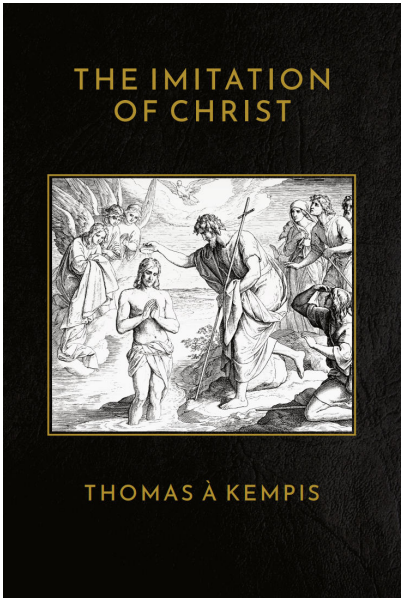

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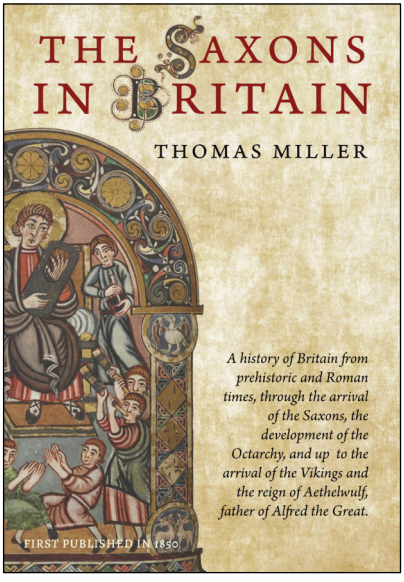

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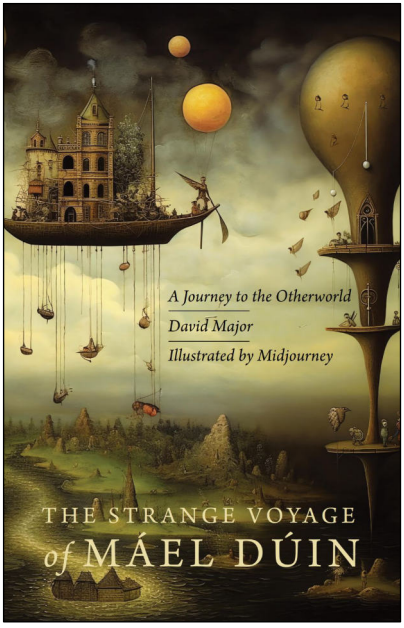

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