The Nature and Rationality of Worry

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Abstract

Worry is familiar to us all. We also have a good sense that worrying about something can be rational or irrational. However, despite this apparent familiarity, what worry is, and the conditions under which worrying can be irrational, are questions that are surprisingly difficult to answer. Moreover, there has been no dedicated account of worry or its rationality within the relevant philosophical literature. As such, the aim of this thesis is to explore the nature of worry itself – what worry is, what we are doing when we worry, and why we do it – as well as the boundaries of rationality within it – how worrying can be irrational and how irrational worry might come about. In doing so I aim to bring worry into focus, shedding light on it in a way that contributes both to our philosophical and lay understanding of it. The account I provide will be supported by the extant psychological and empirical literature on worry, anxiety and the emotions more generally.

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Introduction

Worry is a part of all our lives. This is particularly true in a post-pandemic world, where worries about our health, our loved ones' health, financial security, and the prospect of an unending cycle of uncertainty and isolation permeate the recent memory of nearly all of us. The limits of what we might worry about are the limits of what we care about and what is important to us, and the breadth and depth of potential things we might worry about is vast. We may worry about very real and imminent possibilities, or far-fetched and unlikely ones. We may worry about something that may happen to ourselves, or something that may happen to someone else. Some worries are niggling, existing in the background of our consciousness as we go about our daily lives, whereas others are all-consuming, colouring our experience and holding our cognitive attention in a tight grip. Some worries may be ones that a peer will sympathise with, and others will be ones that, from a third person perspective, seem misplaced and unnecessary. We may even worry about something that *we ourselves* do not endorse or understand, or in a way that we take to be unnecessary, unreasonable or irrational. We all worry at some point or another about many different things, and it seems that doing so is an unavoidable consequence of the human capacity to both care about and envisage different possibilities in our future and the futures of those we love. It also seems to be a feature of our mental lives that we would be better off without. This latter proposal seemed to be the general sentiment of the stoics, who seemed to take the view that worrying about the future was unhelpful and, moreover, unnecessary. As Seneca said: 'What madness it is to anticipate one's troubles!' (Seneca, 1925, e.XCVIII).

Historically, worry specifically has received little philosophical interest, with more focus given to the emotion with which worry is often associated: anxiety. This was a concept central to the thought of many existentialist thinkers; Kierkegaard, for example, understanding anxiety in theological terms, described it as 'freedom's actuality at the possibility of possibility', a central element to the human condition and the consequence of its apprehension of total existential freedom, with which we're burdened as a consequence of Original Sin (Kierkegaard, 1844/2015; p. 51). His was a view that strongly influenced the subsequent existentialist tradition, particularly the views of Heidegger (1927) and Sartre (1946), for whom both the notion of anxiety is central to our experience

of the world we live in. Within the contemporary analytic tradition, interest in anxiety has recently seen an insurgence within the context of a more general interest in the emotions, notably including accounts of anxiety's nature and effects (Vazard, 2022; Miceli and Castelfranchi, 2005), utility (Vazard, 2022, Kurth, 2018a, 2018b; Miceli and Castelfranchi, 2005), fittingness conditions (Fritz, 2021), and dysfunction (Levy, 2016)

These contemporary accounts mostly seem to recognise that worry is a phenomenon closely associated with anxiety. Yet, as stated, worry has not been given the degree of philosophical analysis that anxiety has received. Perhaps this is due to the sentiment that worry is such a familiar feature of our lives that it does not need interpreting and delineating in philosophical terms. It may seem that worry is a concept that belongs within the realm of folk psychology, as used by the layman in informal contexts, whereas anxiety seems to have much more technical and theoretical connotations and applications. Indeed, within empirical psychology, the view that worry is to be understood simply as part of the wider concept of anxiety was held all the way up until the mid-1980s. That is until psychologist Thomas Borkovec wrote a preliminary paper on worry in which he argued that it should be studied and researched as a psychological phenomenon in its own right (Borkovec, 1985). This spawned a new interest in worry as a focus of empirical research in psychology, much of which was dedicated to determining how worry figures in pathological conditions such as generalized anxiety disorder and depression, and the potential methods of therapeutic intervention that might address the causes and maintainers of pathological worry.

Like Borkovec did for psychology in the mid-1980s, in this thesis I hope to bring worry into focus for philosophy. Worry, I'll suggest, is fertile for philosophical examination, and there are various interesting questions that can - and should - be asked about it. This is particularly so given that worry has been neglected as a topic in philosophy, arguably overshadowed by our interest in anxiety as suggested. I propose that despite the concept of worry seeming familiar and common-sensical, we actually understand very little about it, and when trying to pin down a definition or description of what worry is, what worrying involves, or why we worry, the concept we all believe we're familiar

with is surprisingly elusive. This is something I hope the philosophical exploration of this thesis can resolve.

There are two core aims that I wish to achieve. The first is to simply provide an account of what worry is. This will primarily involve thinking about the nature of worry; that is, what is it like, in cognitive and affective terms, to worry about something? What is the *character* of that experience, and what exactly are we doing when we worry? Why do we worry? The account I'll give addresses questions such as these, in a way that is informed by relevant empirical considerations whilst fundamentally remaining in touch with worry's phenomenology. This latter consideration, I think, is important. Despite its value, in my opinion one of the issues with empirical research into worry is that the conclusions that are drawn, and the inferences made from the data analysed, often seem rather detached from the first-person experience of worry, analysing worry in a metaphorical petri dish rather than through the eyes of the worrier themselves. Of course, in some respects this is an appropriate way of studying psychological phenomena, but it can be argued that in losing focus of the phenomenological character of worry something is lost from the conclusions drawn by the more scientific analysis. In an effort to not stray too far from our experience of what worry is like, my account will thus keep in focus the phenomenological character of worry as much as possible.

The motivation to provide such an account is that, as stated, worry is a more elusive concept than we might assume. Suppose, for example, that your friend tells you that they have been worrying about losing their job. Now, your friend's self-report seems quite unambiguous on the surface; you have a good sense of what they are communicating to you. However, when we try and understand what about their conduct they are actually describing when they use the term 'worrying', we find that it is not altogether clear what they mean. In other words, what is your friend saying they are *doing* when they say they are 'worrying'? The answer to this question is surprisingly opaque upon inspection. My characterization of the nature of worry will aim to address this ambiguity.

Beyond understanding what exactly worry is, the second aim of this thesis is to determine the conditions under which worrying is *rational* and *irrational*. Intuitively, we may think we have a good sense of when it is rational to worry about something. However, like our understanding of worry

itself, upon closer consideration it turns out that the boundaries of rational and irrational worry are not as clearly defined as we might think. For instance, take a common anecdotal response we often hear when someone appears to be worrying irrationally: 'why are you worrying? You can't do anything about it!'. This everyday response implies a normative constraint on worrying such that it is only appropriate to worry about things we can influence in one way or another through our actions. Despite this seeming reasonable, such a prescription has significantly unintuitive consequences. For one, it would entail that it is inappropriate to worry about, for example, a family member who has just received a cancer diagnosis, since the situation and the undesirable possibilities it presents are outside the scope of our practical influence. This consequence seems wildly inaccurate.

I propose that considerations like this suggest that our intuitions about when it is rational and irrational to worry are somewhat misguided. Like the nature of worry itself, then, it seems that our ideas about the rationality of worry are also fertile for examination. Beyond providing an account of the nature of worry I thus also wish to further our understanding of conditions under which worrying can be irrational. I'll do this by providing accounts of three different forms of irrational worry, and how these forms of irrationality may arise, with the idea being that in doing so the boundaries of rationality that worry is subject to will be brought to light.

I'll eventually home in on one specific yet familiar form of irrational worry that I believe is of notable philosophical interest and deserves particular attention. This is where we worry about something irrationally despite judging that we shouldn't be worrying. For instance, we might worry that we didn't pack our passport in our luggage as we travel to the airport, despite thinking that we shouldn't be worrying since we have a distinct memory of putting it in a particular section of our suitcase. Cases of worry such as this are particularly philosophically interesting and have recently been the subject of interest for research into anxiety (see Vazard, 2022; Levy, 2016). Such cases, I'll argue, exhibit a notable tension between the act of worrying itself and our better judgement. This tension can be characterized as manifesting a unique form of *weakness of will*, a phenomenon of much interest within philosophy of action that is generally understood to describe just that: acting against our better judgement. I'll call these cases 'weak-willed worries', and the latter section of the thesis

will be focused specifically on providing an account of them, examining *why* and *how* such cases arise and the unique form of irrationality they involve.

My aim in this thesis is thus twofold: I want to account for the nature of worry, and I want to account what it means to worry rationally and irrationally. It must be noted that by no means do I set out to provide an exhaustive account of the conditions under which worry is irrational. As will become clear as the thesis progresses, there are a vast number of moving parts and mechanisms within worry, spanning many different elements within our cognitive, affective, doxastic, and motivational states, and these all interact with each other in often complex ways. As such, there are likely going to be more ways that worry can be irrational than a thesis of this length will allow me to identify. What I hope to do, rather, is simply to *further* our understanding of what worrying is, why we do it, and the conditions under which it is rational and irrational. The account I develop will thus capture and explain what are the most common and familiar forms of irrationality that can occur within worry.

I'll address the aims I've outlined according to the following plan. In Chapter One, I'll provide an account of the nature of worry that is informed by both the relevant philosophical and empirical literature, in a way that respects the phenomenological character of the experience as described. Here I'll argue that worry is to be understood as a mode of *affectively motivated cognition* that is constituted by forms of either practical or epistemic reasoning. This will shed light on what exactly worry is and what it involves, and, more specifically, precisely what we mean when we say we're 'worrying'. I'll also make some claims about the function of worry too in this chapter, showing why it is we worry at all.

In Chapter Two I'll continue examining the nature of worry by discussing the extent to which worrying is under our control, arguing for the view that worrying involves a much greater degree of agency than we may think. This is a proposal that is supported by empirical research into worry. More precisely, building on the claims made in Chapter One, I'll show that the forms of epistemic and practical reasoning that constitute worry can be understood as *intentional*. This, I'll propose, is because we direct that reasoning as agents. Showing this will not only shed more light on the nature of worry, but also show us the respect in which worrying is something that we *do*, as agents. This will

pave the way for the accounts to come in the following chapters, since the claim that worrying is something we do bears on some of the claims I go on to make about how worrying can be irrational. Indeed, in being something that we do through exercising agency, worry can thereby be assessed as something that that we're rationally responsible for as agents, along an axis of practical rationality.

Chapter Three will see me turn my attention to the ways we might understand rational and irrational worry. I'll start by dispelling some intuitions we might have about what might make worry rational or irrational. I'll then begin providing an account of the first form of irrational worry I wish to identify, which I'll label 'ill-informed worry'. This is where, I propose, the beliefs that input into our worrying are irrational, which then negatively influences the rational status of our worrying itself. As I'll argue, this will entail that our worrying in such cases is irrational in both an epistemic and practical sense. I'll appeal to empirical psychological work to support the claims I make here.

Chapter Four will see me examine a second form of irrationality that I claim can arise through worrying, which I'll label 'recalcitrant worry'. This is where our worrying is irrational not by virtue of the rationality of the beliefs that input our worrying as I discussed in the previous chapter, but rather by virtue of the degree to which we're worrying relative to those beliefs. More precisely, this will capture the irrationality of cases of worrying *too much*. This, I'll argue, involves a form of practical irrationality. Again, in giving this account I'll trace its relations to the relevant empirical psychological research on worry.

With two forms of irrational worry accounted for, in Chapter Five I'll provide more context to these ideas by exploring how ill-informed worry or recalcitrant worry may come about. In particular, I'll explore how those forms of irrationality can be generated and maintained on account of some of the mechanisms internal to worry itself. I'll do this through a deeper exploration of the affective and cognitive elements involved in worry and how these work alongside each other. Specific focus will be given here to the imagination in particular, and how, despite playing a key role within the functioning of worry, it can often be the root cause of irrationality in many cases.

Bringing considerations from all the previous chapters together, the sixth and final chapter will then be focused on providing an account of 'weak-willed worry'. This is a third form of irrational worry, where as described we worry about something despite judging that we shouldn't be, in a way that amounts to acting contrary to our better judgement. As I'll show, this stands apart from the two forms of irrational worry already identified in the thesis in some key respects. I'll develop my account of it primarily by engaging the ideas developed so far in the thesis with the literature on weakness of will, as well as empirical psychological work into worry and the emotions more broadly. Such an account will be particularly novel since it will explore the idea that weakness of will – a widely discussed and debated phenomenon within philosophy of action – can apply not only to our actions understood in a regular sense, but also to our cognitive activities to, i.e. worrying.

Having identified three forms of irrational worry, the upshot should be a clearer understanding of what exactly it means to worry irrationally and what the boundaries of rationality within worry are. As stated, these discussions will also serve to further our understanding of the nature of worry itself, too. The thesis as a whole will thus shed light on the nature and rationality of worry in a way that should make some important contributions to both to our philosophical and lay understanding of it, as well as the wider debates with which it engages.

Chapter 1: The Nature of Worry(ing)

Worry is familiar to us all. In contesting with the trials and tribulations of everyday life, we all find ourselves worrying at one point or another. Moreover, we have an intuitive understanding of what is communicated by phrases such as 'I am worried about this' or 'I can't stop worrying about that'. Yet despite the apparent familiar nature of worry it is not altogether clear or obvious what exactly worry is, or what we're doing when we worry. Is worry an affective state, a cognitive process, or something different entirely? When we say that we're 'worrying', what kind of psychological state or process are we describing? And does worry have a function? That is, why do we worry?

Surprisingly, given how familiar worry is to us all, there has to my knowledge been no dedicated philosophical account given of the nature of worry specifically, although there is a body of psychological literature concerned with its description and function, as well as a recent insurgence of philosophical literature concerned with the nearby emotion of anxiety. Therefore, starting from these bodies of literature, in this first chapter I want to offer a characterization of the nature of worry that hopefully contributes something to both. As psychologist Frank Tallis states, 'the presence of the word "worry" and its equivalent in English and other languages provides prima facie evidence for the existence of a relatively unique mental state' - following this line of thought, I propose that worry is a feature of our lives that is fertile for philosophical examination, not least because of its surprisingly elusive nature (Tallis et. al, 1994, p.60) . The characterization I offer in this chapter will thus aim to shed light on what worry is, what we're doing when we worry and why it is we do it, in a way that is informed by relevant empirical theory and remains true to worry's phenomenological character. Ultimately, I'll propose that worry can be understood as a unique form of *affectively motivated cognition*, constituted by engagement with specific modes of reasoning and serving a function of 'processing' our affective states of anxiety.

The chapter will go as follows. I'll first make some preliminary remarks that will lay the foundations for the characterization I offer, suggesting that worry should be interpreted in terms of two separate dimensions: a cognitive and an affective dimension. I'll then provide accounts of these in

turn, starting with the cognitive dimension. Here I appeal to considerations from both the psychological literature on worry and philosophical literature on anxiety to support my claims. I'll then outline what I take to be worry's affective dimension, as well as its relation to the cognitive dimension as described. Bringing the accounts of these dimensions together will then allow for a characterization of the nature of worry as a whole. With this in place, I'll then discuss the kind of function that worry serves, providing a functionalist account of worry that is informed by the characterization previously established as well as relevant empirical psychological theory. The upshot should be a broad account of *what* worry is and *why* we do it.

1.1 Preliminary Considerations

A preliminary distinction I want to make is between 'being worried' and 'worrying'. I'm particularly concerned here with the latter, namely the *activity* of worrying, rather than the state of being worried. This is because 'being worried' suggests that 'worry' simply describes an emotional or affective state, or that worry is merely a form of emotion. This is an intuition I want to reject. Despite being closely connected to our emotional and affective states in important ways, as we will see, it seems that worry is not simply an emotion, since the notion of worry can be used very specifically as a way of describing one's conduct. If, for example, I say to you 'I'm worrying about whether or not I'll get the job', I'm describing something that I am currently doing. This is not true of emotions.[1] Thus, worrying is to be understood here as something we *do*. We might say, then, that 'being worried' describes our current state as one in which we have a disposition *to* worry. It is thus the nature of the activity of worry*ing* that I am here concerned with.[2]

As stated, one of the aims of this chapter is to offer a characterization of the nature of worry that remains true to its phenomenological character - what the experience of worrying about something is like. We thus need to say something about this phenomenological character before we

[1]Of course, emotions such as fear and hope, for example, can be used in verb form (e.g. 'I fear the walls have been breached'/ 'I hope the walls haven't been breached'), however these only seem to describe one's state, rather than one's conduct, and do not have any present sense use that describe what one is actually up to.
[2]I'll, however, often simply use the term 'worry' – by this I am referring to the activity of worrying as described.

proceed. Prima facie it seems that the worrying is a predominantly cognitive experience, since worrying about something seems to imply that we're engaged in some form of cognitive activity, as stated above. So, if I'm worrying about something it can be inferred that I'm *thinking* about it in one way or another. This is uncontroversial. In offering this characterization of worry we thus need to ascertain what the cognitive dimension of worry involves. What kind of thought processes are we engaged with when we worry, and what is the experience of that engagement like? Beyond these thought processes, it also seems that much of worry's phenomenological character involves imaginative content. Worrying about some future event will ordinarily involve us imagining that event, or the possible consequences of it. If the characterization being developed is to adequately respect worry's phenomenological character, we'll therefore also need to account for why the imagination is such a prominent feature of the experience of it.

Beyond these cognitive elements of worry, it would seem that worry is also a fundamentally *affective* experience too. There is a certain affective and emotional element that defines the experience of it. At the very least, worrying about something certainly involves a degree of - as psychologist like to say – 'negatively-valanced' affect. It is, fundamentally, an unpleasant experience, shot through with feelings of anxiousness and perhaps fear. This is therefore an aspect of worry we'll also need to account for if we're to provide an accurate account of worry that remains true to its overall character.

In the characterization I offer, then, I'll take worry to be interpretable in terms of two dimensions: (1) a cognitive dimension, pertaining to what worrying entails in cognitive terms, and (2) an affective dimension, pertaining to what worrying is like in affective terms. Providing an account of these both, as well as how they are related to one another, should make for a characterization that accurately reflects the overall experience of worrying.

1.2 The Cognitive Dimension of Worry

1.2.1 Worry As Practical Reasoning

The consensus within the psychological literature is that worrying is something we do in response to perceived possible threats to us, our goals, or something/someone we care about. It is generally taken to be the 'cognitive component' of anxiety (Hirsch and Mathews, 2012; Andrews et. al 2010; Wells, 1994; Mathews, 1990). In a preliminary paper on worry, Borkovec (1985) argued against the then-prevailing view that worry can simply be lumped in with a conceptual analysis of anxiety, stating that, whilst related to and connected to anxiety in important ways, it is instead to be defined in its own terms.

Borkovec went on to develop arguably the most influential psychological theory of worry (Borkovec et. al. 2004; Borkovec et. al, 1998). Often referred to as 'avoidance theory', it is a view that is cited in most of the subsequent empirical literature on worry, and arguably laid the foundations for all further work on the topic. In it, Borkovec describes worry as involving 'a predominance of negatively valanced verbal thought activity', claiming that 'when we worry, we are talking to ourselves a lot about negative things, most often about negative events that we are afraid might happen in the future' (Borkovec et. al, 1998, p.562).[3] Citing empirical data from his own studies, he proposes that we can understand worry in terms of the two 'avoidance' functions it serves: avoidance of the negative affect that's generated by perceiving possible threats, and avoidance of possible threats themselves (Borkovec and Roemer, 1995).

The first of these functions is served on the sub-personal level. Worrying, it's claimed, allows us to avoid acute affective responses to mental imagery of threats, since evidence shows that engaging in verbal thought processes – i.e., worrying, on his account - about a threat prior to mental imagery of that threat suppresses our somatic responses to that imagery (Borkovec, 1998; Borkovec et. al, 1993;

[3]Note here that Borkovec's use of the term 'activity' in his definition highlights the distinction we made between worrying as an activity and 'being worried' as a state.

Borkovec & Hu, 1990). In Borkovec's words, worrying 'primes' us for these mental images, meaning our negative affective responses towards them are dampened.

Similar claims are made by Newman et al. (2011), whose account has its roots in 'affective contrast theory' - this is the theory that the acuteness of our emotional or affective responses to things is contingent on the degree to which they contrast with the affective state preceding them (Harris, 1929; Williams, 1942; Dermer, Cohen, Jacobsen, & Anderson, 1979). On Newman's account, worrying about some possible threat allows the worrier to sustain a mildly negative emotional state, meaning that if and when that threat occurs their negative affective response is less acute than it would be had they not previously been in such a state, given the reduced contrast in affective valance. Like Borkovec's account, this thereby suggests that worrying ultimately helps us avoid or reduce negative affect; where Borkovec suggests this is by 'priming' us for fearful mental imagery, Newman claims it is by essentially inoculating us affectively should the threat we're worrying about occur.

The second 'avoidance' function Borkovec attributes to worry is that it allows the worrier to generate practical means of avoiding or preparing for possible threats. That is, worrying involves determining how to avoid or prepare ourselves for threats in a way that is akin to problem solving (Borkovec et al., 1998). This attributes a practical function to worry, an attribution also found in many other psychological accounts (see Hirsch and Mathews 2012; Wells, 2005; Tallis and Eysenck, 1994; Mathews 1990). Tallis and Eysenck, for example, similarly suggest that worry serves a threat avoidance function by (1) drawing the worrier's attention to a possible threat, (2) reminding – or 'prompting' - them that the threat remains when their attention moves elsewhere, and (3) facilitating preparation for possible necessary action.

For Borkovec, then, worrying is a cognitive process that allows us to (1) avoid negative affective responses to possible threats, and (2) avoid or prepare for possible threats themselves. As stated, this latter threat avoidance function is widely accepted within the psychological literature. Generally, it is agreed that typically what we're *doing* when worrying is attempting to determine how to avoid undesirable things happening to us and those we care about, or preparing ourselves for possible necessary action should they occur. This seems intuitive; worrying about a job interview

going badly, for example, will likely involve attempting to determine what to do in order avoid it going wrong, or what to do to prepare for it. Or, worrying about not being able to pay rent will likely involve reasoning about what to do to avoid it happening. This psychological proposal therefore chimes with our common-sense ideas about what exactly worrying involves. And, as stated, it is a view that enjoys empirical support: Borkovec builds his theory on data taken from his own empirical studies, in particular surveys ran on students which showed that the most common reasons given for worrying are that it helps *avoid* possible future threats and that it helps *prepare* for the worst (Borkovec and Roemer, 1995).

Borkovec's view thus seems plausible. Moreover, it helps shed light on the cognitive dimension of worry, since it provides an explanation as to the nature of the thought processes involved in worrying about something. At least in a cognitive sense, worry involves determining how to avoid or prepare for threats. In other words, worrying involves engagement with reasoning that is practical in nature, since determining how to avoid or prepare for threats will involve reasoning aimed at settling the question of how one should *act* in order to do so (for simplicity, from here on I'll simply use the terminology of 'dealing with threat' to refer to how worrying can be aimed at determining how to avoid or prepare for threats). The psychological proposal described above can thus be understood in terms of the idea that worrying involves a form *practical reasoning*.[4]

Note that the accounts cited do not propose that this is true of all cases of worry – it is simply widely accepted that this is ordinarily what worrying involves. And, as stated, this reflects our common-sense ideas about worry. The proposal is thus a plausible one. However, presumably worrying will quite often involve *other* modes of cognition, either in addition to or in place of the kind

[4]A clarification must be made here about what is meant here by 'threat' in the case of worry. I take it that when we worry, the 'threat' we're concerned with avoiding or preparing ourselves for is a specific event that may occur that threatens us or our goals, rather than simply the circumstances in which this event may occur. Take the job interview case: despite it being grammatically correct to say that we're worrying about the job interview, the *threat* we're focused on 'dealing with' in worrying is not simply the interview itself, since this is not a threat per se. Rather, the threat we're focused on is, for instance, *the job interview going badly*. This is the possibility which, in worrying, we're either determining how to avoid (what we can do to avoid the interview going badly) or preparing ourselves for should it occur (what we should do if it does go badly). Importantly, both of these necessitate a form of practical reasoning, which we're here attributing to worry. This ties into a claim I'll make shortly that worry and anxiety are concerned with specifically *uncertain* threats; it is, specifically, the *uncertain* proposition 'that the job interview will go wrong' that we're focused on in worrying about the job interview.

of the practical reasoning highlighted. It may involve us reasoning about whether or not a threat will obtain, for example, rather than how we might deal with it. There is little attention given in the psychological literature to what these forms of cognition might be. The majority of extant literature, as stated, tends to regard worry simply as a mode of practical problem solving, which would imply that the cognitions involved in worrying are strictly practically orientated. One might glean from this that engagement with practical reasoning characterises *standard* cases of worrying, perhaps meaning that cases of worry that involve other forms of cognition are non-standard.

This doesn't seem entirely accurate, since some seemingly paradigmatic cases of worry will not involve any form of practical reasoning at all. For example, we may worry about an ache in our chest without engaging in any kind of practical reasoning about what to do about it - in worrying we may simply be trying to work out whether the cause of the pain is an insidious illness or not.[5] This suggests that to assume that worry ordinarily involves practical 'problem solving' reasoning - as it seems that many accounts within the psychological literature does - would be to overlook some important paradigm cases. And this means there is perhaps more to the cognitive dimension of worry to be accounted for than those accounts might lead us to believe.

1.2.2 Worry As Epistemic Reasoning

As stated, worry is understood by many to be the cognitive component of anxiety, an emotion that has been the focus of much philosophical interest in recent years. Although the term 'worry' is often used with little elaboration or definition in the accounts within the anxiety literature, we can appeal to these accounts to help shed light on the cognitive character of cases of worry that aren't captured by the psychological proposals highlighted, i.e. those that don't involve practical reasoning.

Notable contributions to the recent literature on anxiety include accounts of its nature and effects (Vazard, 2022; Miceli and Castelfranchi, 2005), utility (Vazard, 2022, Kurth, 2018a, 2018b;

[5]This is not to say this case of worry *couldn't* involve any kind of practical reasoning, however we can imagine the case where it does not as described.

Miceli and Castelfranchi, 2005), fittingness conditions (Fritz, 2021), and dysfunction (Levy, 2016). A prevailing theme that bridges these accounts with psychological accounts of worry is that anxiety is a negatively valanced emotion concerned with specifically *uncertain* threats. According to Kurth, for example, anxiety is an emotion we experience when we recognise a 'problematic uncertainty' (Vazard, 2022; Kurth, 2018a; Levy, 2016; Miceli & Castelfranchi, 2005). This view is echoed in many psychological accounts of worry, such as Koerner and Dugas's (2006) theory that cases of 'pathological' worry are caused by the worrier's elevated intolerance to uncertainty surrounding the future.[6]

Many philosophical accounts of anxiety, particularly those offered by Vazard (2022), Kurth (2018b) and Miceli and Castelfranchi (2005), identify ways in which anxiety moves us to respond to the uncertainty of the threats to which it is sensitive. Notably, many claim that anxiety motivates us to 'resolve' that uncertainty by improving our epistemic perspective on the threat. This will ordinarily involve attempting to determine how likely the possible threat is, what factors may contribute towards this likelihood, and whether we would be able to cope with it should it occur. In doing so, we're said to be reducing the uncertainty surrounding it - the uncertainty to which our anxiety is sensitive. For Vazard (2022), we do this by forming mental representations of a world in which the threat obtains and assessing those representations, and engaging in suppositional reasoning about what may cause it to come about. For Kurth (2018b), anxiety motivates 'epistemic [cognitive] behaviours' such as inquiry, reflection, reasoning, and reassessment, aimed at reducing the subjective uncertainty of threats. And similarly for Miceli and Castelfranchi (2005) anxiety motivates a pursuit of 'epistemic control' over possible threats, again by reducing the uncertainty surrounding them as much as possible.

What these accounts all point to is that anxiety can often motivate a mode of reasoning that is specifically *epistemic* in nature - that is, reasoning aimed at improving the accuracy of our beliefs

[6]This notably distinguishes anxiety as an emotion from other nearby emotions such as fear, which seem to be concerned more with proximate and certain threats rather than future uncertain ones (Miceli and Castelfranchi, 2005). For example, upon coming across a huge, mean-looking grizzly bear in the forest, it would be strange to describe myself as being 'anxious' about the bear. By the same token, it would seem strange to say that I am 'scared' of my imminent job interview.

about the threat, e.g. how likely it is, how plausible it is, how likely certain consequences of the threat occurring would be, whether or not we would be able to cope with it if it occurred, what might cause the threat to occur, etc.[7] This, I propose, can described as a form of *worrying*. This would chime with the view that worry is the cognitive component of anxiety.[8] Indeed, among others Vazard (2022) does use the term 'worry' to describe such cognitions, although she also uses the term 'rumination' to do so – it's worth noting that such a conflation is rejected in the psychological literature, where it is stated that worry is typically concerned with future threats, whereas rumination is typically directed towards past negative events or negative personal attributes (Hirsch and Mathews, 2012; Papageorgiou, 2006). Nevertheless, as stated it seems that these accounts pick out a mode of cognition that seems plausibly describable as worrying, which involves reasoning that is specifically *epistemic* in nature.

Indeed, as many of these accounts recognise, improving our epistemic perspective on threats by engaging in the kind of epistemic reasoning identified will often be instrumental in the kind of practical function that we've already identified in worry. That is, reasoning about how to deal with some possible threat may necessitate working out the likelihood of it, or other relevant contributory factors (Vazard, 2022; Kurth, 2018a; Miceli and Castelfranchi 2005). For example, when worrying about our job interview, we may need to work out the possible ways the interview might go wrong and assign likelihood estimates to these possibilities (epistemic reasoning) in order to effectively determine how to avoid them (practical reasoning). Indeed, it may be argued that most effective practical reasoning necessitates at least some degree of epistemic inquiry about the world, in order for us to be able to determine how to act within it. This gives us further reason to think that the epistemic reasoning that anxiety is said to motivate is a form of worrying – or is at least a part of it.

Moreover, understanding worry to involve epistemic reasoning allows us to account for the cognitive dimension of cases of worry that don't involve practical reasoning. That is, our worrying may involve reasoning that is *purely* epistemic in some cases. In worrying about the ache in our chest,

[7]Reasoning aimed at improving the accuracy of one's beliefs is also often referred to as 'theoretical' reasoning.
[8]We have further justification for attributing the term 'worry' to these cognitions, namely the absence of any extant clearly delineated definition of worry (the very motivation behind this chapter!).

for example, as stated it may be the case that we're not engaged in any practical reasoning at all. Rather, our worrying may very well be a purely epistemic endeavour aimed at trying to ascertain whether the cause of the pain is an insidious illness, resolving the uncertainty of such a prospect as the accounts cited above would suggest. Moreover, in some cases we may worry about possible threats that we can't do anything about; a mother whose son is away fighting in a foreign war will likely worry about his wellbeing for example, despite having no means of influencing the possibility of his injury or death. Her worrying may thus not involve any form of practical reasoning at all - we can instead imagine it be characterized by reasoning about how much risk her son is in and how likely or unlikely it is that he will be injured, for example. This is a form of purely epistemic reasoning of the kind described in the anxiety literature.[9]

So, despite the psychological proposals outlined in the previous section, it's plausible that in many paradigmatic cases worrying simply involves attempting to resolve the uncertainty of a possible threat in an epistemic sense, rather than determining how to deal with it in a practical sense. This tells us that worrying does not merely involve practical reasoning - it can also involve epistemic reasoning too. It thus seems plausible that the cognitive dimension of worrying can be understood in terms of engagement with specific forms of reasoning that can be either practical *or* epistemic in nature (or both).[10]

1.2.3 The Imagination In Worry

I've so far highlighted two modes of reasoning that seem to describe what we're up to when worrying. One is a mode of practical reasoning, directed at determining how to deal with possible yet uncertain threats, and the other is a mode of epistemic reasoning, aimed at resolving the uncertainty surrounding those threats. In many cases the latter may factor into the former. I propose that understanding worry

[9]Again, this is not to say her worrying *cannot* involve forms of practical reasoning: she may attempt to prepare herself for the possibility of him not returning home, for instance. The claim here is simply that it may very well only involve epistemic reasoning.

[10]It is plausible that engaging with both these forms of reasoning identified may also contribute towards the sub-personal avoidance of negative affect attributed to worry by Borkovec et al. (1998) and Newman (2011), as described earlier.

in this way can also explain a central phenomenological feature of worry, one which a faithful account of its overall character ought to capture. This, as stated earlier, is the use of the imagination; when worrying about some possible threat, we will most likely *imagine* that threat, or mentally represent a state of affairs in which it obtains. This, I propose, can be explained and accounted for in terms of either the epistemic or practical reasoning I've claimed constitutes worry, insofar as the imagination is intimately connected with both.

With respect to the epistemic reasoning involved in worrying, I propose that the imagination is utilised in such reasoning, where this proposal explains the prevalence of imaginative activity in the experience of many cases of worry. Indeed, Vazard states this explicitly in her account. On her view, imagining what we're anxious about, or a world in which what we're anxious about is true, is central to the kinds of epistemic reasoning she says our anxiety motivates, i.e. worry (Vazard, 2022). This is because imagining the threats we're worrying about assists in our attempts to resolve the uncertainty surrounding them: to assess how likely some uncertain threat is, for example, thereby improving our epistemic perspective on it, we will typically imagine it occurring and perhaps assess the plausibility of the imagined scene. We may also need to use our imagination to anticipate possibilities and features of the situation that may contribute towards our assessment of likelihood. The imagination is thus utilised when attempting to improve our epistemic perspective on threats, which, as we've seen, is what we're doing in many cases of worry. This explains why, for instance, the mother may very well imagine her son on the battlefield when worrying about him; doing so is part of her attempt to resolve the uncertainty of her son's possible misfortune, contributing towards the effective functioning of the epistemic reasoning she is engaged with in worrying about him.

Understanding worry to involve a form of practical reasoning also explains the prevalence of imaginative activity too, since, as identified by Williamson (2016) and Spaulding (2016), the imagination plays an important role in effective practical reasoning. For example, as Spaulding notes, working out how to manoeuvre a sofa through a doorway will involve imagining how to do it beforehand. Or, working out how to avoid bumping into someone at a social gathering may involve imagining yourself manoeuvring through the crowd. In other words, we typically need to imagine

scenarios in order to work out how to act in them. When worrying, then, if we're engaged in practical reasoning, attempting to determine how to act in order to deal with some possible threat, it will be necessary to imagine that threat occurring in order for this reasoning to be effective in allowing us to determine the appropriate course of action. Worrying about a job interview going badly, for example, will likely involve you imagining yourself sat in front of your interviewers, or imagining the possible negative scenarios that might play out. The imagination is here being utilised to assist you in determining how to act in such a scenario, and how to deal with the possible negative uncertainties that may arise.

These considerations thus give us an explanation as to why the imagination is a faculty of mind that is employed in worry; it supplements the forms of reasoning we're engaged in and contributes towards their effective functioning. Understanding worry in terms of an engagement with epistemic or practical reasoning thus captures the cognitive dimension of worry by describing what exactly worrying involves, in a way that remains true to the experience of what worrying is like.

1.3 The Affective Dimension of Worry

So far, I've offered an account of the cognitive dimension of worry, which I've claimed involves engagement with modes of either practical or epistemic reasoning (or both). I've also shown how understanding worry in this way explains the prevalence of imaginative activity involved. These forms of cognition, however, don't sufficiently capture worry's overall character since they can describe our thinking in cases where we're *not* worrying. For example, I might engage in practical reasoning about how to avoid a car crash when I see that it has snowed heavily before driving to work, but I may not be worrying. Similarly, I may engage in epistemic reasoning to determine how likely or unlikely a crash is – again, I may not be worrying in doing so.

It seems clear that what's required for these cognitions to count as worry is the kind of negatively valanced affect that I've said defines our experience of it. As proposed, this seems to be

anxiety - that is, worrying about something presupposes feelings of anxiety towards it.[11] But this anxiety doesn't seem to be a merely incidental element to our worrying, that simply occurs alongside the kind of reasoning involved. Rather, it seems to play some sort of *motivating* role with respect to that reasoning. In other words, the anxiety we experience towards the threat would appear to be what motivates our worrying about it. As we've seen, this proposal is supported by the anxiety literature, where it is claimed that the kind of epistemic reasoning I've described as worry is caused by our feelings of anxiety towards uncertain threats. Vazard, for instance, says that it is our anxiety that 'triggers' the cognitions involved: '…anxiety first detects problematic epistemic uncertainties and triggers hypothetical thinking in order to control for it.' (Vazard, 2022, p.224). There's no reason to think that cases of worry that involve practical reasoning aren't also triggered by anxiety in the same way.

Indeed, this fits within the more general view that emotions influence our thoughts in ways that are relevant to that emotion's evaluative content (Brady 2013; Deonna and Teroni 2012; Tappolet, 2009; Clore, 1994). For instance, anger, ordinarily being responsive to the judgement that one has been wronged in some way, will often motivate thoughts about how to attain revenge (Prinz, 2004). In the case of anxiety, then, which is sensitive to uncertain possible future threats, it makes sense to think that anxiety will motivate cognitions that are relevant to the possibility of threat. The forms of practical and epistemic reasoning we've identified seem like good candidates for what these cognitions might be. It's thus plausible to suggest that when we worry, we're simply engaging with the cognitions that anxiety typically motivates, i.e., as part of the cognitive 'action tendencies' of anxiety.[12] We perceive an uncertain future threat, feel anxiety towards it, and are motivated to either

[11]I'll not rule out the possibility that worry may, in some cases, be elicited by other nearby emotions and affective states such as fear. But, as Miceli and Castelifranchi (2005) point out, fear may often have a very similar character to anxiety in many ways. I'll remain neutral on whether anxiety is *necessarily* the emotion that characterizes the affective dimension of worry; pursuing such a question would require a deeper taxonomical exploration of the distinguishing contours of fear and anxiety, which I do not have space for here.

[12]An anonymous reviewer to an earlier draft raised the following question: if worry is just to be understood as form of affectively motivated cognition, what makes it a particularly interesting case? This is a healthy observation, however I believe that construing worry as such does not make it any less interesting or philosophically fertile. If anything, worry is a particularly interesting case because, as stated, it is a phenomenon that we all profess to know and understand from a lay perspective, and yet struggle to pin down under closer consideration.

resolve the uncertainty surrounding it or determine how to deal with it by engaging in the forms of reasoning that we've described as worry.[13] We might say, then, that worrying is a mode of cognition that is *affectively motivated*. This means that, as I've proposed, worry involves both a cognitive and an affective dimension: it involves the kind of cognitions I outlined in the previous section *as well as* the worrier being in a state of anxiety to some degree, where the latter plays a role of motivating the former.

Importantly, the view that worry can be understood in terms of a cognitive and affective dimension in this way provides support for our earlier taxonomic proposal that it is not merely an emotion. Emotions, whilst they often will, do not necessarily involve any cognitive dimension. I can feel afraid, sad, or angry, without that emotion being expressed in thought. Worry, however, would appear to involve both an affective and cognitive dimension by necessity. Remove your cognitions from a case of worry and you are merely anxious. Remove your anxiety from a given case of worry, and you are merely engaged in epistemic or practical reasoning. This therefore paints worry as a significantly unique phenomenon – it is neither purely affective or cognitive and is necessarily both affective and cognitive.[14]

So, on my account worrying involves engagement with specific forms of reasoning that are motivated by our affective states of anxiety. We thus now have in place an account of worry's general character, understood in terms of both a cognitive and affective dimension, the latter of which motivating the former. In light of this, I propose that we should understand worry as a form of *affectively motivated cognition*. In the next section, I'll show how this characterization can shed light

[13]It must be noted that it is only these forms of reasoning that I am proposing qualify as worry, insofar as these are the forms of reasoning anxiety *typically* motivates. Of course, anxiety may motivate other forms of reasoning in some cases – self-reassurance or higher-order reasoning, for instance. However, it seems clear that these do not count as worrying. My conception of worry is thus restricted to the modes of practical and epistemic reasoning highlighted.

[14]As per our earlier claims about the non-necessity of cognition in emotion, this claim does not rule out experiencing anxiety in the absence of worry. We can, for instance, experience nagging anxieties and make an effort not to engage in the cognitions they motivate. The implicit claim here, rather, is that when we do engage with these cognitions, in particular the forms of reasoning identified, we're worrying.

on the overall function that worry serves.

1.4 The Function of Worry

1.4.1 Practical Functions and Epistemic Functions

On the characterization developed, worrying about some uncertain threat involves a form of *affectively motivated cognition* in which we're either (1) engaged in practical reasoning aimed at determining how to deal with that threat, or (2) engaged in epistemic reasoning aimed at resolving the uncertainty surrounding that threat. Some cases of worry may involve both (1) and (2). I've also provided an account of the role the imagination plays within the experience of worry too. This is a characterization that I believe adequately captures worry's overall character, i.e. that worry is both cognitive and affective, and significantly engages the imagination.

Why, then, do we worry? What is the *function* of worry? A good account of this will need to explain why worry has the kind of character I've described, and how in having this character is 'designed' to contribute positively to our lives. This explanation can't simply describe the possible benefits worrying may have, since these may be merely incidental to the actual function of worry - as Justin Garson (2019, p.10) says, '…noses help us breathe; they also hold up glasses, but their function is to help us breathe, not hold up glasses'. Rather, our explanation needs to identify what specific positive functional *role* worrying plays as part of our lives. Accounting for the function of worry will thus need to explain *why exactly it is we do it.*[15]

The most tempting and intuitive claim would be that worry simply serves a practical function of helping us to avoid bad things happening. This is what psychological accounts of worry tend to conclude. As we've seen, the reasoning involved in worrying is often aimed at determining how to

[15]The kind of function I have in mind here is simply a general etiological function; that is, the functionalist explanation I'll offer simply gives reasons why worrying is something we do. This may or may not imply claims about worry's biological or evolutionary function, however since the extent to which these can be inferred from etiological functions is a fiercely debated topic, I'll remain neutral on this issue (see Garson, 2019 for an overview). I simply want to account for what kind of function worry serves by showing how it is designed to benefit us; I believe that in providing an answer to the latter, we're provided with an answer to the former.

deal with possible threats to us, our goals, or to the people and things we care about, and clearly this has functional value. Avoiding and preparing for danger, misfortune and suffering is instrumental in our continued survival and wellbeing, and making sure those we care about avoid danger is important to us as social creatures. So, for example, worrying about the job interview going wrong may facilitate my determination of what I can do to avoid this happening - here my worry serves a clear practical function. Understanding worry's overall function in strictly practical terms thus seems attractive from a functionalist perspective.

However, as we've seen, there are paradigmatic cases of worry that do not involve any such practical reasoning: the worrying mother, for example, whose worrying is constituted by purely epistemic reasoning. It therefore seems that worrying cannot *merely* serve a strictly practical function of allowing us to deal with threats, since in cases like this there is no practical function our worrying can serve. Perhaps one might respond that our worrying simply fails to serve its practical function in such cases. Maybe in worrying the mother is *attempting* to determine means of dealing with the threat, even though there is nothing she can do about it, since this is just how her threat responses are configured. But this would suggest that such cases involve a form of 'doomed' practical reasoning, one that aims at practical solutions that aren't attainable. This doesn't seem accurate. As we've seen, the reasoning involved in the mother's worrying can be understood as purely epistemic and may not factor into, or involve, any mode of practical reasoning at all. It is thus not plausible to suggest that worry assumes a practical function that is simply failing to be served in these cases.

We thus need to think about what kind of function worry serves in cases of purely 'epistemic worry' like the worrying mother. That is, we need to ask the following question: what kind of function does our worrying serve when in doing so we're simply attempting to resolve the uncertainty of some threat, even if there is no clear practical functional value to doing so? Claims made by Miceli and Castelfranchi (2005) in their 'uncertainty theory' of anxiety are particularly relevant here. They argue that the epistemic reasoning anxiety motivates – i.e. worry - can have functional value independently of any kind of practical application. That is, they claim, reducing the subjective uncertainty of threats can be valuable whether or not we can do anything about the threat, as a 'need and search for

knowledge for its own sake, […] not only as a means for acting on the world' (Miceli and Castelfranchi, 2005, p.296).

This seems promising, since it would give us a way of attributing functional value to cases of purely epistemic worry such as the worrying mother. According to Miceli and Castelfranchi, the functional value of getting epistemic clarity (or 'control', as they say) on threats is tied to our human need for a 'coherent and accurate model of the world – including myself, my chances of success or failure, and so on':

> Without a certain degree of stability and reliability of one's model of the world, including oneself, one faces the threat of succumbing to a serious destabilization of either one's conceptual system or personality structure. Thus, while pursuing epistemic control, one […] defends against suffering, and in particular against the anxiety aroused by such threats. (Miceli and Castelfranchi, 2005, p.303)

The claims here rely on the view that having a coherent 'model of the world' around us is functionally beneficial (see also Epstein, 1990). Now, having a coherent perspective on reality is clearly important, and it is certainly plausible that a properly functioning human being would seek to reduce, as much as possible, any disconnect between their beliefs about the world and the external world itself, especially regarding possible threats. It seems more beneficial to *know* whether something bad is going to happen to us than be unsure about whether it will, even if we can't do anything about it. And the pursuit for epistemic control that anxiety motivates – worrying, on our account – can presumably bring us closer to this knowledge. But this view doesn't seem to sufficiently identify a clear function that worry serves. It is a rather weak proposal to suggest that the functional role served by worry in many cases is simply making our beliefs about the world more accurate. What exactly is beneficial about improving our epistemic perspective on threats through worrying in such a way?

One potential benefit is alluded to by Miceli and Castelfranchi (2005): the epistemic clarity worrying often aims at can help alleviate and extinguish our anxiety towards threats. For example, if the worrying mother determines, through worrying, that it is highly unlikely that her son will be

injured, her anxiety will likely be somewhat alleviated.[16] Miceli and Castelfranchi claim that this positive affective influence is part of what makes attaining 'epistemic control' functionally valuable. Indeed, note in the above quote they say that in pursuing epistemic control one 'defends against suffering, and in particular *against the anxiety aroused by such threats*' (Micheli and Castelfranchi, 2005; italics added for emphasis). In other words, anxiety is an emotion that is unpleasant in its valence and affective character, and it is responsive to uncertainty. Resolving uncertainty (through worrying, on our account) would thereby reduce or extinguish anxiety. And this is functionally beneficial with respect to our general wellbeing.

This seems prima facie plausible, however it comes with some problematic implications. Since worry is a form of cognition that is *motivated* by anxiety, then this proposal leads to the following unattractive consequence: anxiety would thereby motivate a form of cognition (worry) whose function is to *extinguish the very affective state that motivates it*. From a functionalist perspective, this makes little sense. Worry's function would therefore be self-cessation.[17] Whilst Miceli and Castelfranchi do identify a beneficial affective influence that worrying clearly has in some cases – worrying *can* allow us to reach certain conclusions and solutions that alleviate our anxiety – I think, therefore, we ought not to treat this as a function of worry as such, but rather simply as a positive effect that worrying may have. That is, worrying may lead to our anxiety being alleviated, but this is not what it is designed to do.[18]

Another proposal is that reducing the uncertainty of threats through worrying may allow us to prepare ourselves for threats in a purely non-practical respect, perhaps in an emotional or affective

[16]Interestingly, Miceli and Castelifranchi (2005) also claim that anxiety will be alleviated if we determine that the threat is *certain* to happen through epistemic reasoning, since this also means that the uncertainty of the threat that our anxiety is sensitive to has been resolved. In such cases, they suggest that our anxiety may be 'converted' to fear.

[17]In some respects, self-cessation is one of the conditions of successful worry – if we eventually stop worrying, then it makes sense to suggest we have adequately 'solved' the problem posed by our anxiety. But to say that this is the *function* of worry seems incorrect. By analogy, my fear of the bear in the woods will motivate me to escape. Upon escaping safely, my fear will dissipate. But the function of my fear was not to extinguish my fear, but rather motivate me to respond appropriately to the threat.

[18]Of course, another route would be to reject our claim that worry is *motivated* by anxiety. However, this would then re-open the question about the causal origin of worry, a question which I believe is by far most plausibly answered simply by saying, as I have, that anxiety motivates worrying.

sense. That is, the more accurate our beliefs are about the threat, the better prepared we are to cope with that threat should it occur. We would think this would allow us to avoid a more acute affective response to that threat if and when it occurs. If, for example, the mother determines, through worrying, that the likelihood of her son being injured in the war is roughly x, then this improved epistemic perspective may allow her to emotionally prepare for such a possibility in a way that is appropriate to this likelihood assessment. And if such an event does indeed occur, she would then be able to cope with it more effectively, meaning her negative affective response is less acute. This would certainly be a functional benefit we can attribute to improving one's epistemic perspective on threats through worrying (indeed, Miceli and Castelifranchi briefly mention that worry may serve such a function in their account).

Like Miceli and Castelfranchi's view that improving our epistemic perspective on uncertain threats serves a function of alleviating anxiety, this proposal relies on the notion that avoiding negative affective states is functionally beneficial to our wellbeing, which seems self-evident. However, my proposal is that worrying may allow us to *avoid* possible future negative affective states by facilitating emotional preparation, rather than *extinguish* a negative affective state we're already in. This means it avoids the issues Miceli and Castelfranchi's account faces. Granted, it might seem here that this function collapses into the practical function worry can serve of helping us 'prepare' for threat, however I am here considering worry to help us prepare for threat in a purely non-practical sense, be that emotionally or affectively, as stated.

This seems a plausible explanation - epistemic worrying *does* seem to involve some kind of emotional and affective preparation for negative possibilities. Of course, this is an empirical proposal, but it is one that enjoys strong support from psychological literature. For one, Eysenck (1992) suggests that worry may involve a form of 'anticipatory coping', which reduces the aversiveness of possible threats via a 'process of [threat] habituation'. Further, Sassaroli and Rogeirio (2003, p.39) suggest that worrying (or 'brooding', as they refer to it) may act as an 'emotional shield', stating that 'in therapy, clients suffering from a brooding problem […] report that "even if brooding does not help to solve problems, it can help to tolerate them better when they arrive!"'. These claims seem to align

closely with our own. And, moreover, the view I've proposed ties in with Borkovec (1998) and Newman's (2011) views mentioned earlier. On my proposal, being better prepared to emotionally cope with a threat, through improving our epistemic perspective on it, means we will have less of an acute negative response to it, should it occur. And this is exactly what both Borkovec and Newman claim that worrying can allow for; remember, Borkovec suggests that it does so through 'priming' us for negative mental imagery of possible threats, and Newman says that it does so through essentially 'inoculating' us affectively. The difference between our views is that on my proposal the functional benefit of avoiding future negative affect is achieved through the success of the epistemic reasoning worrying involves, rather than via sub-personal mechanisms as these psychological accounts suggest. But this by no means makes these mutually exclusive - it is not implausible to suggest that this function may be served on both the conscious and sub-personal levels simultaneously.

Given this support, as well as the intuitive appeal of such a view, I thus think it is reasonable to suggest that reducing the uncertainty of threats through worrying serves the kind of function proposed. That is, it facilitates emotional and affective preparation for possible threat, allowing us to cope with the threat more effectively should it occur and helping us to avoid potentially acute negative affective states that would arise had we not. This identifies a clear functional benefit to improving our epistemic perspective on threats through worrying, especially in those cases where no clear practical function is served. What these considerations demonstrate is that not only does worry serve a practical function of allowing us to deal with threats, determining how to avoid or prepare for them practically, but cases of 'purely' epistemic worry have clear functional value too, since worrying can allow us to prepare for threats in a non-practical sense. We now need to think about how we should understand worry's overall function in more general terms.

1.4.2 Worry's Function: Disjunctive or Unified?

As I've shown, worry can be functionally valuable in two senses. On the one hand, it helps us to deal with possible threats to us or things/people we care about, which as stated has self-evident functional

value. The capacity of worry to facilitate useful practical reasoning thereby has a distinctly practical function in this respect. On the other hand, worry can help us get a better epistemic perspective on perceived uncertain threats to us or those we care about, which helps us emotionally and affectively prepare for those threats and thus hopefully avoid acute negative affect.

In describing worry's function, then, it may seem appropriate to simply suggest that such a function is disjunctive; it allows us to *either* (1) avoid and prepare for possible threats in a practical sense, or (2) resolve the uncertainty surrounding possible threats, allowing us to effectively prepare ourselves for coping with them. Indeed, we could justifiably leave it there – on the account I've given such an explanation is certainly accurate. However, I believe we can do better. That is, we can give a *unified* description of worry's general function that captures both the practical and epistemic functions just described, through framing worry's functional role in the following way.

Anxiety tells us that there is that there is a future uncertain threat. That anxiety motivates us to respond to the possibility of that threat, and the motivated response will predominantly be a cognitive one that we've described as worrying, constituted by a form of reasoning that will either be practical or epistemic in nature. If we believe we can do something about the threat, we will worry in a way that most likely involves practical reasoning, which aims to settle the question of how we should act in order to deal with the threat. If we believe we can't do anything about the threat, we will worry in a way that involves purely epistemic reasoning, which aims at resolving the uncertainty of the threat in order to help us cope with it should it occur.

Crucially, notice that it is *only* through worrying that these functionally beneficial outputs can be achieved. Indeed, anxiety tracks, alerts us to and draws our attention to uncertain threats in the world (see Eysenck et al., 2007; Hoehn-Saric, McLeod, 2000). It also causes necessary physiological changes in response to those threats, such as an increased heart rate and pupil dilation. And, moreover, it motivates worrying. Anxiety thus clearly serves an important function. But the important practical and epistemic functions we've identified can only be served through worrying itself, meaning these are functions that I believe should be attributed to worry alone. Indeed, merely feeling anxious about something without worrying about it, which is certainly possible, would mean the highlighted

functions would not be served. We might say then, being the mode of cognition motivated by anxiety, worry provides a means of cognitively 'processing' the content of the anxiety, in order to allow for the functionally beneficial practical and epistemic outputs to be generated. That is, anxiety motivates us to worry to allow us to respond to uncertain threats in an effective way, be that in terms of determining means of practically dealing with that threat or resolving the uncertainty of it in order to help prepare us to cope with it. And this, I propose, is how we should understand the overall function worry serves: in short, worry serves a function of *processing anxiety*.[19] Anxiety alerts us to the problem, but worrying is how we solve it.

Bringing all we've considered together, then, we can thus now give the following definition of worry and the function it serves:

> **A is worrying about p iff:**
>
> (1) A is anxious about uncertain threat p.
>
> (2) This anxiety motivates A to engage in certain forms of reasoning about p.
>
> (3) This reasoning, often supplemented by the imagination, aims at 'processing' A's anxiety about p.

> **A piece of reasoning aims at 'processing A's anxiety about p' iff:**
>
> (1) it is *practical* in nature, aimed at determining means of avoiding or preparing for p, or
>
> (2) it is *epistemic* in nature, aimed at improving our epistemic perspective on p.

Following the recent theme of understanding anxiety as an important functional feature of our lives (such as in the accounts of Vazard (2022), Fritz (2021) and Kurth (2018)), thinking about worry in the way described here hopefully paints it in a significantly more positive light than we might be inclined to consider it. Despite seeming like an inherently negative aspect of our mental lives, it should now be evident that worrying can actually contribute greatly to our ordinary functioning. Of course, the claim here is not that worrying *always* appropriately serves the kind of function we've attributed to it. In fact, it seems that by its very nature worrying might often not end up producing the kind of outputs

[19]Potential analogues of this claim might be the idea that mourning serves a function of processing grief, or that rumination serves a function of processing regret.

we've identified.[20] An explanation of why exactly this is true is something I don't have space to address here, although as the thesis progresses we will look more closely at why worry may not work in the way it should, and indeed how doing so can be irrational.

But this doesn't mean we shouldn't understand it in such functionalist terms. There are many functions within human cognition that are there to contribute towards our day to day lives that often don't serve their functional role adequately – this doesn't mean that they can't be understood in terms of that role. We could argue, for instance, that our fight or flight response mechanism has a clear functional role despite rarely contributing towards our ordinary functioning as it is designed to do. Often it kicks in when we don't need it. But we still understand it in terms of the function it is 'designed' to assume. And so, I contend, the same is true of worry; just because worrying may often fail to serve the positive function it is meant to doesn't mean that it is not to be understood in terms of that function. Indeed, a life completely devoid of worry would likely mean that we would fail to appropriately respond to the trials and tribulations life presents us with. When considered in this way, the functional necessity of worry is clear.

[20]Indeed, the majority of psychological literature on worry is focused on explaining the manifestation and maintenance of 'pathological' worry.

Chapter 2: The Intentionality of Worry

In the previous chapter I developed an account of the nature of worry, showing what worrying is and why we do it. My proposal was that worry is a form of affectively motivated cognition that serves a function of processing our anxiety towards uncertain possible threats, comprised of either practical or epistemic reasoning. I now want to develop our understanding of worry further by examining the extent to which worry is under our agential control. Is worry something that we merely experience passively, or is it something that we're actively involved in? Not only are questions like this relevant to understanding of the nature of worry itself, but they are also relevant to some of the claims I'll make later in the thesis about the ways that worrying can be irrational.

Prima facie, worrying seems to be something we have little control over, suggesting that there we are, to quote Frankfurt (1998), mere 'passive bystanders' of the cognitive processes involved. In some respects, this is true; we certainly seem to have little control over certain elements of our worrying. But I propose there are also other key respects in which worrying is under our control. I here want to show how this is the case. Specifically, I'll argue for the claim that worrying can be accurately described as something we do *intentionally.* This is because the reasoning that constitutes it is guided and directed by us as agents.

This chapter will go as follows. First, I'll discuss some reasons for why worrying is not passive or involuntary in the way we might assume, suggesting that we likely get this impression because of the passivity of the anxiety that motivates it. I'll then suggest that given the nature of worry we have good reasons for thinking that worry is, in fact, a distinctly *active* and *conscious* process. Then, I'll look to elaborate this claim by appealing to O'Shaughnessy's (2000) views on the 'mental will', showing that worrying has the kind of character that he describes as 'intentionally active' in his account. This will open the door to the claim that worrying is intentional. Such a proposal, however, must be squared with the fact that we rarely, if ever, intend *to* worry. I'll therefore proceed to discuss how actions can be *intentional* without being *intended,* appealing to Searle's (1983) notion of 'intentions in action'. I'll then show how these 'intentions in action' figure within directed

thinking in general, before applying this template to worry specifically. This should show precisely how worry manifests the intentionality I am proposing, providing an argument for the idea that worrying is a form of affectively motivated reasoning that we engage with *intentionally*.

2.1 Worry As An Active Process

2.1.1 The Impression of Passivity

We often get the impression that worrying occurs passively, and that it is something we have little control over. Yet this impression can be challenged by drawing a distinction between our affective states of anxiety on the one hand, and the cognitive activity of worrying on the other. The former are indeed an element of our lives that we have little – if any – agential control over. We have little power as agents to influence our affective responses to things; we feel sad in response to certain events, angry in response to others, and, indeed, anxious in response to others. These emotions typically occur without any input from us.[21] And, as we saw in Chapter One, one of these passively occurring affective states motivates us to worry: anxiety. We judge there to be a possible yet uncertain future threat, feel anxious in response, and that anxiety will motivate the kind of practical or epistemic reasoning that constitutes worrying. We're thus wholly passive with respect to the initial 'trigger' that causes us to worry, which is to say anxiety.

However, the activity of worrying itself is not involuntary in the same way. That is, anxiety will motivate us to worry, but we're not compelled to worry, and we have a say over whether or not we worry in a way that we don't with respect to our emotional responses to things.[22] Consider the

[21]There are certainly cases where we can influence how we feel, meaning we do have some degree of control over our affective states - but only in an indirect way. Calling a friend when we're upset may alleviate our sadness, or thinking about the ways we have been wronged by our employer may elicit anger which may be of practical use when asking for a pay rise (See Mele, (1989) for a more robust account of such cases). These cases involve us manipulating triggers, as we might do from a third person perspective to someone else. Indeed, the fact that such indirect methods are the only means we have of influencing our affective states gives support to the claim that they are passive as I am highlighting here, since it shows that we cannot manually shut them on and off as an agent, 'from within' as it were.

[22]A further point could be made here to strengthen this claim: even if it were the case that worry *was* compelled, it is not true that we would be compelled to worry *in a particular way*. If this was true, all cases of worry would have an identical character, since we would have no say about the way in which we engage with our worry. That this is clearly not the case – worries vary in character and form – speaks to the truth of the idea that worry is not something that is compelled in the same way as our affective states.

following example to illustrate this. Suppose you hear a rumour that redundancies are imminent in your place of work, and thirty percent of the workforce are to be let go. Money is tight as it is and losing your job would likely mean you are unable to provide for your family. It may even result in you being unable to make payments on your home. You are faced with a possible and uncertain future threat: losing your job. So, over the following week, you find yourself worrying rather frequently about such a possibility.

Later in the week you are in an important meeting, and something someone says reminds you of the rumour you've heard. You feel a pang of anxiety, something that occurs passively and involuntarily, and which motivates you to start worrying. However, you recognise that engaging in worry there and then would be inconvenient - you need to focus on the discussions being had in the meeting (indeed, being present in the meeting may very well be instrumental in avoiding redundancy). You thus make an active effort to not acquiesce to the motivation to worry that your anxiety generates, and instead you focus your attention on the discussion being held. Thus, where you could not prevent the initial occurrence of anxiety, you *were* able to exert agency in preventing yourself engaging with the worry that your anxiety motivated.

Cases like this are perfectly realistic and highlight a distinction between the agency we can exert over our affective states on the one hand, and the process of worrying on the other. Where you had no agential influence over whether you felt anxious when reminded of the rumour, you *did* have agential influence over whether you engaged in the worry that was motivated, and indeed you exhibited this agency by actively focusing your attention on other things. When it comes to the actual cognitive activity of worrying, then, we can identify an element of control that we don't have over the elicitation of the anxiety that motivates it. When anxiety occurs passively and places a demand on us to engage in the reasoning that constitutes worry, we can plausibly control how we respond to such a demand by not engaging in such reasoning, or shaping that responsive reasoning as an agent if we do. Of course, presumably we *will* often simply begin worrying when our anxiety motivates us to, but the suggestion here is that we have some say in whether we do, in a way that we don't with respect to the elicitation of emotion.

This isn't to say that we have total control over whether or not certain thoughts come to mind when we feel anxious. We must allow for the fact that often our anxiety will generate certain 'unbidden' thoughts, whose occurrence we certainly have no control over; thoughts or images that express our anxieties may rise to the surface of our consciousness completely involuntarily, beyond our agential influence. This is something true of any emotion, insofar as emotions tend to involve a cognitive dimension in which the content of the emotion is manifested in thoughts or mental images (Scarantino, 2017; Baumeister, 2017; Deonna and Teroni 2012; Tappolet, 2009; Clore, 1994). However, merely entertaining such unbidden thoughts about the threat does not constitute worrying on my account. What constitutes worrying is the cognitive *engagement* with such thoughts, in a way that involves one (or both) of the modes of epistemic or practical reasoning identified in Chapter One. Again, an important distinction can be made here. Where we certainly have no say in whether unbidden thoughts are elicited by anxiety, we do have a say in whether we engage with those thoughts in the way I've described as worrying. In the meeting, for example, our anxiety may generate certain unbidden thoughts about the possibility of redundancy, but on my account we can only be described as worrying when we begin to engage in the kind of practical or epistemic reasoning that I've highlighted. And this engagement is something we have agential control over.

What, then, gives us the impression that the activity of worrying *as a whole* is something we have no control over? Why do we think that worrying is something we merely experience passively? I propose that it is the involuntariness of our anxiety, and perhaps the unbidden thoughts it may elicit, that give such an impression. That is, since we're often passive with respect to the occurrence of anxiety, and since anxiety motivates worry, we tend to wrongly assume that our worrying itself passive in the same way. Since we often 'act on' the motivation to worry that our anxiety generates, we simply think we have no choice in the matter. This impression is also potentially compounded by the fact that worrying is not something we typically decide or intend to do. It seems that worrying is just a cognitive activity we 'find' ourselves engaged in when anxious. The putative absence in our lives of intentions or decisions to worry may thus also add to the impression that worrying is involuntary.

As suggested, however, we have reason to think that this impression is mistaken. The distinction I've drawn between our states of anxiety and our worrying clearly shows how worrying is not something that occurs in a wholly involuntary way. And the fact that worry is not something we intend or decide to do does not prevent it from being under our control; as we will discuss in more detail further on, many actions can be intentional even if there was no prior intention to perform them – moving our legs as we walk, for instance.

Moreover, my proposal that worrying is not as passive as we may assume is supported by considerations from the psychological literature on worry. For one, Wells and Mathews (1994) found that there is little evidence to show that the actual thought processes involved in worrying involve the kind of automaticity that the unbidden thoughts elicited by anxiety do. This would suggest an element of agential *control* to those thought processes. Further, in discussing the elements of worry that involve such automatic or controlled cognitive processing, Wells (1994) makes a related claim:

> Whilst worry may be initiated involuntarily it seems to require controlled processing for its continued execution. It is conceivable that the involuntary initiation of worry is appraised by some subjects as indicating that worry is generally uncontrollable[.] (Wells, 1994, p.102)

Wells makes two important claims here, both of which support mine above. The first supports the kind of distinction I've drawn: Wells states that the 'initiation' of worry is involuntary, whereas its actual continued execution – the *activity* of worrying – is under the control of the worrier. This is akin to the kind of distinction drawn above between the passivity of anxiety and our engagement with worry.[23] The second suggestion Wells makes is that the involuntariness of what initiates worry can give the worrier the impression that their worry is uncontrollable. Again, this is akin to my proposal

[23]One might suggest that Wells' claim actually conflicts with mine, since on my account it is technically not the initiation of worry itself that is involuntary, but only what causes worry to be initiated i.e., anxiety. Indeed, I've claimed that the initiation of worry itself is under our control, as we saw in the case of worrying about redundancy above. However, it is unclear what Wells takes this 'initiation' to be. Given, though, that he understands worry as a 'long chain of negative thoughts that are predominantly verbal in form and aimed at problem solving', it is plausible that Wells takes the initiation of worry to simply be the first thought in such a chain (Wells, 1995). But such a thought would presumably simply be the kind of unbidden and involuntary thoughts that anxiety brings to mind, which I recognised above. Thus, I suggest it is best to interpret Wells as restricting worry to this chain of thoughts, and on this interpretation our views align.

above, namely that the passivity of what 'triggers' worry may lead us to think that worry itself is also something we experience passively in the same way.

As we can see, the proposals made above enjoy support from the psychological literature. We thus have good reasons for thinking that worrying is not passive or involuntary in the way we might assume. It seems that we can exert control over whether we worry which we cannot with respect to our affective states and certain unbidden thoughts these states may give rise to. Furthermore, it's plausible that the impression we might have that worrying is involuntary derives from the passivity of the anxiety that motivates it.

2.1.2 Worry As An Active, Conscious Process

The claims made so far are limited to showing that worry doesn't occur passively, in the way that our affective states and unbidden thoughts do. We now need to substantiate this view by making some positive claims about why worry is *active*, showing how worry is indeed something we exhibit agential control over. Moreover, I also want to show that this control is exerted *consciously*, rather than being something we do inattentively, at the sub-personal level. These are necessary premises that must be in place to allow for the idea that worrying is intentional.

As stated in Chapter One, when we worry we're engaged in a mode of either practical or epistemic reasoning. These forms of reasoning are *directed*, since both aim at settling a question – either settling the question of how we should act in order to avoid or prepare for a threat (via practical reasoning) or settling the question of how likely or plausible the threat is (via epistemic reasoning). More precisely, worry is a process of attempting to form new attitudes. In settling the question of how to act in order to avoid or prepare for a threat, we're in the process of forming a new *intention* via practical reasoning. Or, in settling the question of likely the threat is, we're in the process of forming a new *belief* via epistemic reasoning. Worry is thus directed insofar as the forms of reasoning that constitute it are guided towards the formation of new intentions or beliefs.

The directedness of the reasoning in worry would suggest that worrying is a distinctly active process, since in being directed it must have an agent - the worrier - actively directing it. To emphasise this claim, we can appeal to the distinction between activity and passivity drawn by Frankfurt (1998). He claims that even 'idle and inattentive' activities, such as the drumming of one's fingers on a table, are to be considered as *active*, since 'these movements in question do not occur without one's making them'. He contrasts such movements with the movement of a spider's legs after receiving an electric shock, which he claims are wholly *passive* since they do not issue from anything the spider does itself, but rather the electric shock - it happens *to* the spider. This would suggest that a requirement for an activity to be active, rather than passive, is simply that on some level the agent is responsible for it happening.

Worry satisfies Frankfurt's requirement, suggesting that it is indeed an *active* process. That is, our engagement with the reasoning involved in worry, aimed at settling a particular question and thus forming new attitudes, certainly isn't like the spider's legs moving after receiving an electric shock, or a pang of anxiety when someone mentions the rumour about redundancies. Rather, it happens because *we*, the worrier, make it happen. The process does not happen 'without our making it'. But worrying is not merely active in the minimal sense Frankfurt identifies, in the way that idly drumming our fingers on the table is. As stated, worry is *directed* by us, meaning we actively participate in it as agents, rather than merely inattentively causing it to happen. Moreover, this participation would seem to occur on the conscious level, meaning we're consciously *involved* in the movements of our thought as we worry, as we would be if we were drumming out a specific tune with our fingers rather than inattentively tapping them against the desk. It would thus seem that not only is worry active in the minimal sense that we cause it to happen, but it is also a process that we actively and consciously participate in as agents.

Perhaps an objection to this proposal could be made from the perspective of recent work on human cognition, which has suggested that a lot of our thinking occurs below the level of our conscious awareness. In particular, modern dual-process theories of cognition state that many of our goal-directed cognitions and computations can occur sub-agentially (De Neys, 2022; Moors and

Fischer, 2019; Moors, Boddez and Houwer, 2017; Mudrik, Faivre and Koch, 2014). It has even been suggested that complex cognitive processes such as utility calculations, something we would assume would occur wholly consciously, can in fact be processed sub-consciously, without our awareness (Bechara et al., 1997). Thus, it might be objected that this could also be the case with worry. Perhaps the epistemic and practical reasoning that we're attributing to worry occurs at the sub-agential level too. If so, our worrying would be merely active in the minimal sense that inattentively drumming one's fingers against the table is. According to this objection, worry is not the kind of active process just characterised.

This objection, however, does not fit with the fact that worry seems to be characteristically demanding of conscious attention to some degree. This is a view espoused by many empirical psychological accounts of worry (Wells, 1994; Hirsch and Mathews, 2012; Gladstone and Parker, 2003, Mathews, 1990). Far from any kind of sub-agential cognition or computation, Wells (1994, p.105) describes worry as 'an attentionally demanding cognitive activity which has distracting qualities' - this would suggest that we have explicit awareness of our worrying when engaged with it. Indeed, it would seem that worry is *by its very nature* a conscious process; I can certainly settle questions about how to act in order to deal with a threat on a sub-conscious level, as the dual-process theories mentioned above suggest is possible, but we would not likely describe my doing so as worrying. I may, for instance, go to sleep unsure about how to act in order to avoid a potential possible future threat, and wake up with the answer settled – presumably we would not say that I was worrying in my sleep. Considerations like this suggest that worry is a fundamentally conscious process, which points away from the idea that the kind of control and guidance we're attributing to it occurs on the sub-agential level, as the objection raised above goes.[24] Again, it would thus seem that

[24]This is not to say that there are not cognitions that some might consider part of worry that occur at the sub-agential level; some 'anxious' or 'worrisome' thoughts may plausibly occur without our explicit awareness, and the possible movements of such thoughts *could* be akin to idly drumming one's fingers against the table. I am not ruling these out. However, I would consider these as non-paradigmatic cases that are not quite captured by the definition of worry I am working with; remember that we're reserving the use of the verb 'to worry' with our engagement with the forms of practical and epistemic reasoning I've identified, the kind of engagement that occurs in the 'attentionally demanding' and potentially 'distracting' manner that Wells (1994) describes. Indeed, I propose that having such sub-agential worrisome thoughts would mean the agent is best described as being in a *dispositional state* of 'being worried', rather than being engaged with worry in any way.

worrying is not merely active in the minimal sense that inattentively drumming one's fingers on the table is, but rather it is an active process that is consciously controlled and directed by us *as agents*.

The discussion so far has suggested that not only is worry not to be considered as passive or involuntary, like the states of anxiety that motivate it, but rather it seems to be an active process. But nor is it merely active in the minimal sense that Frankfurt (1998) describes, like drumming one's fingers on the table inattentively. Rather, it seems to involve conscious input and control from the agent, given the directedness of the constitutive reasoning and its attentionally demanding experiential character. Building on these claims, I now want to develop an account of how worrying is something we do *intentionally*. Intentional actions are not merely actions or activities that the agent is behind on a minimal level, as with the minimal sense of agency that Frankfurt outlines. Rather, intentional actions or activities are things that the agent *means* to do. In what follows, I'll show how worrying is a cognitive activity that can be described in this way. I'll start by considering O'Shaughnessy's account of the role of the mental will in consciousness, and how intentionality is exhibited in thought. This will provide deeper insight into the respect in which conscious thought processes like worry are under our control.

2.2 O'Shaughnessy On the Mental Will

2.2.1 The Mental Will

In his seminal book *Consciousness and the World*, O'Shaughnessy (2000) claims that the 'mental will' – the capacity to control and direct our thought processes - is a fundamental element of consciousness itself. On this view, all our conscious cognitive processes are governed by the mental will, meaning that they are under our control as agents:

> […]even though a conscious person is at each moment infinitely dependent upon the proper functioning of his own mental resources for his consciousness, he remains nonetheless at that moment actively in charge of his own experience. (O'Shaughnessy, 2000, p.201)

This is a claim O'Shaughnessy makes primarily by drawing a distinction between the experience of waking consciousness and non-conscious dreamed experiences. He claims that if our conscious

cognitive processes were not under the control of the mental will, the experience of them would be akin to the experience of dreams (O'Shaughnessy, 2000, p.229). That is, we would simply be 'immersed' in a state in which cognitive processes *happen* in a way that we cannot fully understand and have no control over, as events unfold when we dream. The advance of our thoughts, he claims, would be 'explanatorily opaque' to us (O'Shaughnessy, 2000, p.230). But this is clearly not the case. Our conscious cognitive processes occur and proceed in a way that is fully intelligible to us, and the experience of them is markedly different in this respect to our experience of events that occur in dreams; 'the thinking process is precisely what happens to the dream when the mind comes under the guiding hand of its owner' (O'Shaughnessy, 2000, p.30). For O'Shaughnessy, this difference in experiential character between conscious cognitive processes and dreamed events is thus explained by the fact that our conscious cognitive processes are governed by the mental will. Matthew Soteriou provides the following useful interpretation of O'Shaughnessy's view:

> […]the idea appears to be that the awake, self-conscious subject is able to make sense of what is happening in a certain domain of her mental life in so far as she is able to make sense of what she is up to […] and the perspective she has on this aspect of her mental life is that of an agent. (Soteriou, 2013, p.220)

In other words, we can make sense of our conscious cognitive processes precisely because we're in control of them. Were this control absent, we would not be able to make sense of them in the same way – we would merely experience our thoughts in the same way we experience events unfolding in a dream. It is thus by virtue of the intelligibility of our conscious cognitive processes, as contrasted with the experience of events in dreams, that O'Shaughnessy states that they are under the control of the mental will:

> […]the mental will imports internal intelligibility into the processive advance of the stream of consciousness…[o]nly a mind steering its own cognitive path through a wider cognitive scene, a self-causing which is furthered by rational steps, can introduce pellucidity into the flow of experience. (O'Shaughnessy, 2000, p.227)

Of course, one might point out that there certainly seem to be conscious mental events that don't occur because we willed them to. We noted earlier, for example, that often anxiety will elicit totally involuntary unbidden thoughts, which are presumably conscious. The occurrence of such passive

mental events may suggest that we do not have the kind of agential control over our conscious cognitive processes that O'Shaughnessy proposes. However, I think that the character of such thoughts can, in fact, be treated as support for O'Shaughnessy's view, since they serve to highlight the connection he makes between intelligibility and the mental will. When these thoughts occur, we can give no explanation for what gave rise to them; they merely 'pop' into our conscious awareness. They simply *happen*. Consider the following example of such thoughts given by Cassam: 'As I write these words it suddenly occurs to me that today is the first of the month. This thought is unconnected with the deliberative thinking in which I am currently engaged; it just comes to me, for no apparent reason[.]' (Cassam, 2011, p.05). It could be argued that such a thought occurred to Cassam 'for no apparent reason' *precisely* because it was not brought about by the exertion of his mental will. That the occurrence of such a thought is unintelligible in this way seems to show that it was not him, the agent, responsible for bringing it about. This emphasises the link O'Shaughnessy makes between intelligibility and the mental will; our conscious cognitive processes are intelligible *insofar as it is us that is in control of them*. And if our cognitions and cognitive processes in general were not governed by the mental will in the way that Cassam's unbidden thought was not, then they would *all* occur 'for no apparent reason'. That this is not the case, and that our cognitive processes are intelligible to us by and large, thereby indicates that the mental will does indeed govern our conscious cognitive processes for the most part as O'Shaughnessy proposes, barring certain cases of unbidden thought as just described.

The activity of worrying certainly seems to be an element of our conscious mental lives that is intelligible to us in this way. When we worry, we can make sense of why and how one thought follows on from the previous one, since on our account it is constituted by engagement with specific modes of reasoning with the aim of settling a particular question. We pursue particular lines of reasoning, make inferences from the conclusions we draw, perhaps update our beliefs accordingly - none of this happens in a way that is unintelligible to us in the way that events in dreams are, or in the way that unbidden thoughts 'pop' into our awareness without any evident reason, as Cassam describes. In other words, the thoughts that are involved within the forms of reasoning that constitute

worry *make sense* to us. At least according to O'Shaughnessy' account, that our worries have such a character thus suggests that they are under the control of the mental will.

2.2.2 Intentionally Active Thinking

Building on the proposal that conscious cognitive processes are subject to the mental will, O'Shaughnessy goes on to claim that such processes are to be understood as 'intentionally active'. Similarly to our earlier discussion, he does so by emphasising the *directedness* of our conscious thought processes, suggesting that in being directed those thought processes are intentional. He illustrates this view by describing ratiocination, a mode of thinking closely akin to the reasoning involved in worry, in the following way:

> […]one engages in an activity in the hope that a desired entity 'surface' to cap one's efforts, something which is […] determined in advance: it is singled out from the start under a definite description which unites the specificity of some given desirable trait with an openness as to realization, in such a way as to leave scope for the unknown. (O'Shaughnessy, 2000, p.221)

The idea here is that when we ratiocinate, the direction of our thinking is under our agential control given that it is us, the agent, that directs it towards a particular aim under some 'definite description'. That is, in order to direct our thinking, there must be something to direct it *towards*, and such an 'aim', he argues, 'must already be dimly perceived – else one would have no direction to follow as one begins thinking' (O'Shaughnessy, 2000, p. 220). Peacocke also makes a similar proposal, suggesting that 'when a thinker is engaged in directed thinking, he is in effect *selecting* a certain kind of path through the space of possible thoughts —thought contents—available to him, […] given by the content of the thinker's aim in thought' (Peacocke, 2000, p.70; italics added for emphasis). For instance, in trying to work out the solution to a maths problem, the aim of that reasoning is to settle a question such as 'what is the solution to the maths problem?'. This is the aim that I direct and steer my thinking towards as an agent, exhibiting control over my thinking in doing so. Or, working out what I want to eat for dinner will involve me directing my thinking towards settling the question 'what am I going to have for dinner?'. O'Shaughnessy proposes that all conscious cognitive processes

are directed by us in this way – even daydreaming (O'Shaughnessy, 2000, p. 224).[25] And like the claims we made in the last section, he states that in directing our thinking towards particular aims in this way, we exert agential control over the direction of our cognitive processes as an agent. Moreover, for O'Shaughnessy directing our cognitive processes towards such aims must be something we do *intentionally,* in the way that moving our legs as we walk is intentional. Like placing one foot in front of the other as we walk, we would not be able to direct and guide our thoughts in such a way *un*intentionally.

Worrying is directed in way that O'Shaughnessy says ratiocination is, since worrying involves settling a question via reasoning in the same way that ratiocination does. When worrying about possible redundancy, for example, the epistemic reasoning involved may be directed towards settling the question 'how likely it is that I'll be redundant?'. The formation of a new belief is thus what which I direct my worrying towards. Thus, in being directed in this way, as well as being intelligible to us in the way that O'Shaughnessy highlights, worrying is a cognitive activity that qualifies as 'intentionally active' on O'Shaughnessy' account, which is simply to say that worrying is intentional.[26]

We have some work to do in order to show that this is the case. Firstly, we need to establish how we're to understand what we mean be 'intentional' here. For an action or activity to be intentional would be to suggest that we're fulfilling some sort of prior intention in performing that action or activity; in brushing my teeth intentionally I'm fulfilling a previously formed intention to brush my teeth. If conscious, directed thought is intentional, then, does this mean we form intentions to think such thoughts before we think them? It seems not. In most cases we don't form future directed intentions to think in one way or another, much less worry about something (barring unusual

[25]O'Shaughnessy recognises that daydreams might not seem like they are directed by us. However, he re-emphasises the distinction that can be drawn between these and dreams, stating the following in response; 'it cannot be in day-dreaming that image breeds image for reasons unknown, as happens in dreams. Rather, while occupation breeds occupation for whatever reason, each phase of the process leads to its successor phase through the mediation of an intention. In short, through the practical commitment of the agent-subject' (O'Shaughnessy, 2000: 224)

[26]As I've stated, worrying, when constituted by practical reasoning, worrying involves the formation of intentions for the future. I'm not talking about these here; rather, I'm talking about the intentions involved in the actual directed reasoning involved, that is describable as intentional on O'Shaughnessy's account as shown.

cases). It seems these are just things we do, without necessarily intending to beforehand. How, then, do we square the proposal that worrying is 'intentionally active' with the idea that we rarely form prior intentions to engage in it? This brings us to another important distinction, namely between inten*ded* action and inten*tional* action, a distinction we need to make clear if we're going to show how worrying is intentional.

2.3 Intention In Action

The distinction between intended and intentional action can be traced back to Searle (1983), who sought to understand intentional actions that don't issue out of any prior intention. His proposal was that intentions don't necessarily need to be future directed, but can also be directed solely at what we're up to in the present:

> […]suppose you ask me, "When you suddenly hit that man, did you first form the intention to hit him?" My answer might be, "No, I just hit him". But even in such a case I hit him intentionally and my action was done with the intention of hitting him. I want to say about such a case that the intention was in the action but that there was no prior intention. (Searle, 1983, p.84)

As described here, Searle recognised that there are many cases of action that can validly be described as intentional, but which do not appear to issue from any of the agent's prior intentions. Moreover, it seems that such actions – like hitting the man in a sudden outburst of anger – *do* issue from some sort of intention to perform the action, even though the action was not intended before being performed. Searle (1983) thus proposed that intentions can plausibly be contained solely *within* the performance of an action itself, referring to these as 'intentions in action'. I propose that it is in this way we should understand the intentionality of the directed reasoning involved in worrying. However, we need to understand a bit more about intentions in action first before we can show how this is.

For Searle (1983), intentions in action are essentially intentions that are formed and fulfilled simultaneously by the performance of some action. They are thus what render an action or activity intentional, whether we previously intended to perform the action or not. If we're acting on a prior intention, they are caused by that prior intention. He explains this in the following way: in acting on a

prior intention to φ, my φ-ing involves an intention in action that is caused by my prior intention to φ. My prior intention to φ thus causes a subsequent intention in action that is *contained within* my φ-ing, and it is this intention in action that makes my φ-ing an intentional action, and not a mere involuntary movement:

> […]the prior intention causes the intention in action which causes the movement. By transitivity of intentional causation we can say that the prior intention causes both the intention in action and the movement, and, since this combination is simply the action, we can say that the prior intention causes the action. (Searle, 1983, p.94)

Intentions in action is thus the locus of intentionality within any intentional action. This view can be illustrated by a piece of Wittgensteinian maths. Wittgenstein asked: 'what is left over if I subtract the fact that my arm goes up from the fact that I raise my arm?' (Wittgenstein, 1968: §621). For Searle, the answer is the intention in action contained within my arm raising. It is this intention in action that makes the upwards movement of my arm the *act* of arm raising, performed by me. Intentions in action are thus present-directed attitudes that make our bodily (or cognitive!) movements the agential, intentional actions they are, over and above mere movements.

Notably for our purposes, the notion of intention in action allows for an action or activity to be described as intentional without there being any prior intention to perform that action. As Searle claims, '[all] intentional actions have intentions in action but not all intentional actions have prior intentions' (Searle, 1983, p.85). Indeed, as we've seen, on Searle's view intentional actions that don't issue out of a prior intention, such as hitting the man in front of me in a sudden outburst of anger, involve an intention in action. In such cases my intention is purely present-directed; in striking out at the man, I only intend to hit him *as I do so*, even though no intention to was formed previously. And the intention in action contained within my hitting is thus what makes this an intentional act of hitting, rather than a mere sudden movement of my arm and fist. As Soteriou says of such actions; 'even if there is no deliberation prior to the performance of the action, we still have reason to think the other parts of the picture are still in place' (Soteriou, 2013, p.315).

I propose that the directed reasoning involved in worrying can be shown to be intentional by appealing to the notion of intention in action as laid out here. Remember, at the end of the last section, we showed how worrying can be described as 'intentionally active' on O'Shaughnessy's account, by virtue of it being a form of conscious directed thinking. However, we recognised the need to square this view with the fact that worrying is not something we typically do because we intended to beforehand. We now have a way of doing this. By suggesting that specifically intentions *in action* are manifested within the reasoning involved in worry, we can explain the respect in which worrying is intentional, despite not being previously intended.

Like O'Shaughnessy's views suggest, my proposal is that worrying is intentional insofar as it is directed. This is because when we direct it, in order to settle the question of how to act, or how likely the threat is, our thinking manifests an intention in action. That is, even though we do not form intentions *to* worry, the activity of worrying is wholly intentional since we direct it, as agents, in a way that involves an intention in action. The presence of this intention in action is what makes worrying more than just a mere involuntary movement of thought. As Searle would say, what makes my arm moving upwards an act of arm raising is the intention in action contained within it, and in the same vein what makes worrying more than just a mere movement of thought is the intention in action that is manifested when we guide and direct it as agents. In order to elaborate this view, we now need to look closer at how we direct our thinking at all, and thus where and how intentions in action might figure within our doing so. This will thus allow us to see the precise respect in which worrying – an arguably paradigmatic instance of directed thinking – manifests the kind of intentionality I am proposing.

2.4 Intentionality In Worry

2.4.1 Intentionality In Directed Thinking

We looked earlier at O'Shaughnessy's (2000) description of ratiocination as an illustration of how directed thinking is under our control as agents, given that we guide it towards particular aims. This led to the proposal that such a cognitive process is intentionally active – we would not be able to do so

unintentionally. Building on this view, O'Shaughnessy goes on to provide an account of how exactly we direct our thoughts, suggesting that we do so by imposing 'restrictions' on our cognitive processes:

> […] exploratory thinking imposes restrictions such that some […] mental occurrences will be accounted continuations of the ratiocinative process, whereas some others—such as a stray memory of a cricket match—will not. (O'Shaughnessy, 2000, p.221)

These 'restrictions' posited by O'Shaughnessy are essentially self-imposed limitations on our cognitive processes that serve to establish their direction, keeping our thoughts trained at the aim we have of thinking rather than going in non-pertinent directions and arriving at non-pertinent thoughts, such as a 'stray memory of a cricket match'. For instance, having such restrictions in place means that when I'm settling the question of what to eat for dinner, my thoughts remain focused on this question. We might liken these restrictions to the raised barriers a child might have on either side of their bowling lane: they mean our cognitive processes proceed from one thought to the next in a way that is relevant to the aims we have of thinking in such a way. For O'Shaughnessy, it is by imposing such restrictions that we direct our thinking towards particular aims in the way described earlier, a directedness we find in any case of conscious thought on his view. Thus, if we're thinking consciously, we're directing our thoughts in one way or another via the imposition of restrictions. Indeed, as Peacocke states: 'Without such selection [of a direction in which our thoughts should proceed], human thought would be chaotic' (Peacocke, 2000, p.70).

The notion of imposing such restrictions in this way in order to direct our thinking is also adopted by Soteriou (2013) in his account of mental action, referring to them as 'constraints' (this is the term I'll also now use). What is notable about these constraints for Soteriou is that they are, to quote, 'not simply constraints on one's reasoning that are imposed by facts in the world' (Soteriou, 2013, p.264). Rather, he claims, they are constraints that *we*, as *agents*, impose upon *our own* cognitive processes. This essentially means that when our thinking is subject to these constraints, our thoughts move in a direction that is solely under our guidance and control as agents, since it is us that is imposing those constraints in order to direct our thoughts towards whatever aim we have in our thinking.

Akin to O'Shaughnessy's view we saw earlier, I propose that in imposing such constraints on our thinking in order to direct it, our directed thinking can be described as intentional. This is because, as emphasised by Soteriou, *we* impose the constraints our cognitive processes are subject to, meaning the direction of our thoughts is something that *we* establish, given whatever aim we have in our thinking. And crucially, that we establish the direction of our thoughts by imposing these constraints thereby means our directed thinking manifests an intention in action. For example, in engaging in a piece of reasoning in order to settle a question of whether to φ, we can say that we have a present-directed intention (in action) to direct and guide our thinking towards settling the question of whether to φ, precisely because it is *us*, the agent, who is imposing the necessary constraints on it in order to do so. The self-imposition of constraints on our conscious directed thoughts is thus where the intentionality of that thought process manifests.

As such, in the same way that Searle recognized that an intention in action is what makes an act of arm-raising more than just an upwards movement of the arm, the intention in action that is manifested when we impose constraints on our thinking is what makes a directed thought process more than just a mere movement of thought. Indeed, where Wittgenstein asked 'what is left over if I subtract the fact that my arm goes up from the fact that I raise my arm?', we may ask 'what is left over I subtract the fact that my thoughts move in a certain direction from the fact that I direct them in that direction?' - the answer to both is an intention in action. Thus, it is in the imposition of such constraints in order to guide our thinking, I propose, where intentions in action figure within conscious, directed thought.

One may object at this point that we still haven't shown how the actual *thinking* involved in directed reasoning is intentional – only the guiding or directing of the thoughts we think via the imposition of constraints. However, the idea that our actual thinking itself is intentional, or that we explicitly intend to think every thought that we do in a piece of directed thinking, is problematic. If it was solely the 'thinking of a thought with content x' that was intentional, as the objector may demand we explain, then a piece of reasoning must thereby involve a constant rapid succession of separate intentions in action, one for each successive thought involved in the process. This would thereby

mean that the intentionality of our thinking would not be related in any relevant way to the aim of our thinking as a whole, as we're claiming. Each separate thought would manifest a separate intention in action, unrelated to the next.[27] This doesn't seem plausible; on the view we're developing, directed thinking is intentional on account of the *aim* we have of thinking in such a way, i.e., what we're trying to achieve in our thinking by imposing constraints on our thoughts.

Indeed, O'Shaughnessy explicitly rules out the view that each individual thought we have is intended. We must, he claims, accommodate the 'unceasing spontaneity of thought [and] the continuing unanticipatedness of one's next thought' (O'Shaughnessy, 2000, p.201).[28] By this he means that it is not the thinking of each thought itself that is intentional – there is no intention in action to 'think thought x' as we think it. Peacocke (2000) also rejects such a view, saying that in directed thinking we do not have intentions to think particular thoughts themselves, but rather we have an intention to think certain *kinds* of thoughts; this is captured by the idea that the intentionality of directed thinking is manifested by imposing constraints on our thoughts, since doing so is just to determine the 'kinds of thoughts' that are relevant for reaching whatever aim we're directing our thoughts towards. These claims thus fit with the idea that we guide our thoughts by simply constraining the direction they take, rather than determining their content specifically.

So, explaining the intentionality of directed thinking in terms of self-imposed constraints, as we are, does not commit us to the idea that each individual thought we think is intended. Rather, it allows us to claim that we simply have a present-directed intention to *direct* our thinking towards a particular aim, since it is via the constraints that *we* are imposing that we 'select the direction of their movement' (O'Shaughnessy, 2000, p.201). Therefore, as we engage in directed thinking, we can simply say that we have an intention in action to direct our thoughts towards whatever aim we have, manifested in the self-imposition of relevant constraints on our thinking. It is in this way, I propose,

[27]Soteriou (2013) does, in fact, suggest that the intentionality of daydreaming is best understood in terms of rapidly successive intentions in action. This, however, shows that there is no particular 'aim' to day dreaming.
[28]This is, in fact, something O'Shaughnessy states when saying that the contents of our thoughts cannot be intended *beforehand*, which we've already ruled out in the previous section. If this was the case, O'Shaughnessy points out, then we would be omnipotent, aware of what we're going to think before we think it. If I intend to think about a zebra, for example, the content of my intention presupposes the content of my subsequent thought with zebra-content.

that we should understand how intentionality manifests in conscious, directed thought, and ultimately worry.

2.4.2 Intentionality In Worry

Since, as proposed, worry can be considered a paradigmatic instance of directed thought, we've now got a template by which we can show how intentions in action figure within worry, and thus how worrying is something we do intentionally. The best way to illustrate this is with an example. Let's return to the case of worrying about losing your job. Suppose when worrying about this, your worrying is constituted by practical reasoning aimed at settling the question of what you should do to avoid redundancy. You're thus engaged in a piece of reasoning with a specific aim: settling on a course of action that will prevent or reduce the likelihood of you losing your job. You are consciously directing your reasoning towards this aim, which you do by imposing constraints on your thinking, such that your thinking proceeds from one thought to the next in a way that is relevant to the question you are trying to settle. In imposing these constraints in this way, *you* determine the direction of your thinking and thereby constitute your thought process as the *act* of worrying it is, even if you don't necessarily determine the content of each individual thought involved.

Your worrying can be described as intentional because in being directed by you in this way it manifests intention in action. In worrying about losing your job it is *you*, the agent, that is imposing the relevant constraints on your thinking, meaning *you*, the agent, establish the direction your thoughts take as you direct it towards settling the question of what to do in order to avoid redundancy. Thus, your worrying doesn't happen unintentionally or in a way that is beyond your control, as one might assume. The guiding of the practical reasoning involved is something that you *mean to do,* since you, the agent, impose constraints on your thinking in order to direct it towards settling the question of what to do. And in imposing these constraints, your thought processes manifest an intention in action to guide your thinking in this way. It is precisely this intention in action that makes your worrying the intentional activity it is, in the way that Searle recognised that an intention in action is what makes the upwards movement of the arm an intentional act of arm raising. As such, worrying about losing your

job is thus more than just a mere involuntary movement of thought - rather, it is a cognitive process that you are intentionally guiding. Indeed, as we saw earlier, if worry did occur passively or unintentionally, it would have the unintelligible character of unbidden thoughts or dreamed events that O'Shaughnessy's draws attention to. The thoughts would just 'happen', like the unbidden thought that Cassam (2011) recognized occurred 'for no apparent reason'. This doesn't seem to be the case. In this sense, then, we can thus plausibly claim that worrying is something we do intentionally, in a way that accommodates the fact that we rarely – if ever – form prior intentions to do so.

Conclusion

The account given here allows us to see how worrying is something we do intentionally. In short, it is intentional because it is under our control, given that it involves forms of reasoning that we direct towards settling a question of either how to act in order to deal with the threat, or how likely or plausible the threat is. This is a view that fits with psychological accounts of worry, in particular the claim made by Wells (1994) that worrying involves a form of *controlled,* rather than *automatic*, cognitive processing. This challenges the impression we may get that that worrying is something we have no control over - indeed, despite seeming like worrying is an aspect of our mental lives that is more passive than others, we can now see that this is not the case.

The account I've given thus furthers our understanding of the nature of worry in general. In Chapter One I developed an account of what worrying is and why we do it. In this chapter I zoomed in on the agency we exhibit when worrying. Not only is shedding more light on the nature of worry in this way relevant to the overall project of understanding what worry is, but doing so also paves the way for many of the claims I'll go on to make as the thesis progresses. In particular, some of the claims I make about the ways that worry can be irrational rely on worrying being something that we *do* intentionally. Indeed, if worrying was unintentional or involuntary in the way we might assume, any account that picks out a form of irrational worry may be open to the objection that perhaps we can't be held rationally responsible for the involuntary or passive elements of our mental lives. Our account allows us to avoid this by showing that, in fact, worrying is fully intentional, meaning we as

agents are in control of it and thus we as agents are rationally responsible for it. This is something I'll begin exploring in the next chapter.

Chapter 3: Ill-informed Worry

So far in the thesis I've developed our understanding of the nature of worry. I now want to turn my attention towards developing our understanding of the *rationality* of worry. Common sense tells us that worrying can be appropriate in some cases and inappropriate in others; worrying about finishing my PhD on time seems more appropriate than worrying about whether a football team I support will win or not, for example. More precisely, it seems that there are conditions under which worrying about something is *rational* or *irrational*. And yet, despite us having a strong intuitive sense of the distinction between rational and irrational worry, delineating the boundaries between these is not as straightforward as we may think. Even though it seems that most cases of irrational worry can be easily identified, what makes such cases irrational is surprisingly difficult to determine. The remainder of my thesis will be primarily concerned with shedding light on this. Moreover, I want to provide such an account in a way that also furthers and builds on our account of the nature of worry. This will primarily involve drawing attention to the rational failings that can occur in worry; that is, in identifying how worrying can be *ir*rational, the kind of rational requirements worry is subject to should be brought to light.

My approach will be to assess the rationality of worry in terms of the account I've established so far. This means interpreting worry as an engagement with the forms of practical or epistemic reasoning I've identified. Some remarks made by Broome about the nature of reasoning can help highlight the axes of rational evaluation we can thereby examine in worry. Firstly, as Broome states, we reason 'with our attitudes' (Broome, 2013, p.242). a piece of reasoning expresses the attitudes held by the reasoner, meaning we can attribute attitudes to an agent by virtue of their being engaged with a piece of reasoning. As such, one way to determine a form of irrationality in worry is by examining potential rational failings within the attitudes attributable to an agent by virtue of their worrying. In particular, I'll look at how worrying can be irrational by virtue of the *background beliefs* that inform it. Secondly, similarly to the claims we made in the last chapter, as Broome points out 'the operation of reasoning is itself an act' (Broome, 2013, p.235). Reasoning is thus something we *do.* This would

thereby suggest we can also assess the rationality of *the act of reasoning itself* the worrier is engaged in.

A rough and non-exhaustive distinction can thus be made here between a form of epistemic irrationality (pertaining to the background beliefs we can attribute to a worrier) and practical irrationality (pertaining to the act of worrying itself). These are the axes of rational evaluation I'll primarily examine. In other words, I'll say that the rationality of worry can be assessed in terms of both *what we're worrying about* on the one hand, and *how we're worrying* on the other. Taking this approach should shed light on the key ways that worrying can be irrational, which as stated should therefore shed light on the conditions of rationality that worry is subject to. In the present chapter, I'll be primarily concerned with the irrationality that can be identified within the worrier's background beliefs, and how those beliefs may influence the rational status of the worry that they inform. I'll call such cases 'ill-informed worries'.

The chapter will go as follows. First, I'll consider some intuitive ideas we may have about when we should and shouldn't worry, suggesting that those intuitions are often misguided and are thus unreliable indicators of what irrational worry is. This will motivate the general project of determining the boundaries of rationality within worry. I'll then begin developing my account of how irrationality can manifest in worry on account of the rational status of the worrier's background beliefs. This will first involve producing a framework of the background beliefs that inform worry, which I'll do by appealing to Miceli and Castelfranchi's (2005) account of anxiety and its connections to other nearby philosophical and psychological accounts. With this framework established, I'll then argue that, given a case of worry, irrationality can be identified within the worrier by attributing to them one or more background beliefs that fails to satisfy a basic requirement of epistemic rationality. Following this, I'll then show that not only is the worrier epistemically irrational in these cases, but by engaging in the worry that is informed by such an irrational belief they are also practically irrational. The account developed will ultimately allow us to identify the following requirement of rationality that worry is subject to: *when worrying about p, our worrying should be informed by rational beliefs about p.* Such

an account will contribute both towards our understanding of the boundaries of the rationality in worry as well as our understanding of the nature of worry in general.

3.1 The Limitations of Our Intuitions

As stated, we generally have a strong intuitive sense that worrying can be rational or irrational, as well as a strong intuitive sense of *when* a given case of worry is rational or irrational. If, for example, your friend informs you that they have been worrying about not being able to make their mortgage repayments after losing their job, you have a clear sense that their worrying is rational. If, however, they inform you that they have been worrying about not being able to make their mortgage repayments after winning the Euromillions, you'd presumably think that their worrying is irrational. By and large, common sense tracks this distinction accurately. However, as stated in the introduction to this thesis, what worrying actually is and involves is not altogether clear from an intuitive perspective. Consequently, I propose that this means our intuitions about when worry is rational and irrational – and indeed *what makes* worry rational or irrational - can often be mistaken too.

This is particularly evident when we consider some common-sense perspectives on the matter. For example, we're all familiar with dictums such as 'worrying gets you nowhere', and many will have received – or even given – well-intentioned advice such as 'you shouldn't worry if you can't do anything about it'. Now, despite seeming plausible, I propose that these articles of folk-wisdom are inaccurate indicators of when we should and shouldn't worry. For one, they are in direct conflict with one another. The former suggests that worrying is practically impotent; worrying can't help us. And yet the latter implies a normative connection between the appropriacy of worrying about something and our ability to do something about it, such that we should only worry about something – that is, worrying is only *appropriate* - if doing so will allow us to influence what we're worrying about. Contrary to 'worrying gets you nowhere', this would suggest that worry *can* help us. It makes sense to suggest that the contradiction between these pieces of commonly heard folk-wisdom undermines their respective plausibility. Further, the appropriacy condition suggested by statements such as 'you shouldn't worry if you can't do anything about it' is contradicted by the fact that many cases of

worrying about something clearly *are* appropriate even though the worrier 'can't do anything about it'. For example, it seems uncontroversial to claim that worrying about a family member who has just received a cancer diagnosis is completely appropriate, even though presumably the worrier is in no position to influence the outcome of that diagnosis in any way.

These considerations suggest that some of our deep-rooted intuitions about what makes worry appropriate and necessary can be questioned, which should highlight the limitations of those intuitions for determining what makes worrying rational or irrational. What seems to muddy the water further is the fact that intuition is relative. What is intuitively a wholly rational case of worry to one person may be totally irrational to another. For example, I may worry about how my peers view me and what their opinion of me is – to me, this might be a rational thing to worry about. To my less insecure friend, however, my worrying may be irrational. Are either of us correct? Are both? Questions like these further highlight the limitations of our intuitions for understanding rational and irrational worry, demonstrating the necessity for the current project of delineating the boundaries of between these.

3.2 Epistemic Irrationality in the Worrier

3.2.1 The Cognitivist Assumption

I'll now begin developing an account of how worry can be irrational by virtue of the rational status of the background beliefs that inform it. Before I begin doing so, however, it must be noted that, for now, I'll be working under a particular assumption that avoids unnecessary complexities being introduced. This is as follows: the cases of worry that will be examined in this chapter are ones that are motivated by anxiety that is *responsive to, reflective of, and proportionate to the background beliefs held by the worrier*. That is, the cases of worry that will be surveyed here are to be understood as ones that are directly informed by the worrier's beliefs and other attitudes. I'll call this the 'cognitivist assumption'. The reason for having this assumption in place is because we're here considering cases of worry that are irrational by virtue of the beliefs we can attribute to the worrier on account of their worrying. We thus need to assume, for our current purposes, that those beliefs are reflected in their worrying. This may seem like a given, however our emotional states and the cognitions they motivate may often be

unresponsive to, out of proportion to, or occur in tension with, our background beliefs; the emotions involved in these cases are often regarded as 'recalcitrant' (Döring, 2015; Brady, 2013; D'Arms and Jacobson, 2003). But I'll be dealing with cases of worry that involve this kind of tension in the next chapter. For now, I'm purely concerned with how worrying may involve irrationality by virtue of the beliefs that inform that worry. This calls for such an assumption to be in place. The reader should thus take it as given that the cases of worry being discussed here are ones that are reflective of what the worrier believes to be true.

3.2.2 The Background Beliefs In Worry

As stated, the view I want to argue for here is that worry can be irrational on account of the background beliefs that inform it. In order to show this, we first need in place an account of what those beliefs are. It seems that a good way of doing this is by mapping out the system of beliefs that inform our *anxiety*. This is because on our account anxiety is what motivates worry – indeed, as we claimed in Chapter One (see section 1.3), worrying can simply be understood as the mode of cognition that anxiety motivates. Identifying the beliefs that inform our anxiety will thereby be to identify the beliefs that inform our worrying.

We've seen that anxiety is a negatively valanced emotion that responds to uncertain future threats. On Miceli and Castelfranchi's (2005) account of anxiety, there are a number of beliefs to which it is responsive. Firstly, there is the belief that the threat we're anxious about involves the 'thwarting of goal g'. This is the belief that if what I'm anxious about were to occur, then a particular goal of mine would be thwarted. For example, failure in an important job interview would mean that my goal for career progression would be thwarted. This seems plausible. However, I think we can, and should, construe this in more general terms than merely the 'thwarting of goals' – it seems that many cases of anxiety and worry don't necessarily involve any clear goal(s) being thwarted as such, and unnecessary complexities may be introduced through using such a term. If I'm anxious about climate change altering the world's temperature irreversibly, for example, it is hard to identify any single *goal* that I have that such a threat jeopardises. Therefore, for the sake of simplicity, I propose

that we should interpret this belief in the following terms, where p refers to the uncertain threat that we're anxious about:

(1) if p, then negative consequence(s) $c^1,\ldots, c^n$

So, when anxious about p, I have the belief that if p were to occur, negative consequence c would obtain. If I'm anxious about the job interview going badly for example, one of the background beliefs that informs that anxiety is the belief that if the job interview goes badly, then a negative consequence – such as increased chances of a failure to secure the job - will obtain. This belief is essentially what substantiates the anxiety I have about something and gives a reason why that thing is perceived as a *threat*.[29] It should be noted that the evaluative term 'negative' is meant in an agent-specific sense here; that is, negative consequence c is negative *for me*. This is likely why Miceli and Castelfranchi interpret this belief in terms of 'thwarting of goals', since use of the term 'goals' implies what makes p undesirable is relative to the agent and the goals they have. Even though we aren't interpreting this belief in the same terms, this subjectivity is something we also want to preserve, since it allows us to be charitable when coming to assess the rational status of these beliefs. We don't want the rational status of such a belief to hinge on whether c is indeed a *negative* consequence or not, according to some objective, externalist standard. What's negative, or undesirable, for one, may not be for another, given that each everyone will have different values and cares with varying levels of subjective importance. And we want to allow for this, since fundamentally what determines whether I take c to be 'negative' or not will rely on what I, the worrier, take to be important and care about, which is beyond the reach of the kind of objective rational appraisal I want to subject these beliefs to.[30]

[29]For Gordon (1973), a belief like this would be treat as grounding the 'desire' element of anxiety; that is, it provides a reason as to why we have a *desire* that p not obtain.

[30]Some, like Frankfurt (1982) believe that *cares*, which seems to be the kind of attitude that determines whether or not c is a *negative* consequence, are not strictly subjective and *are* subject to a form of rational appraisal. However, the standard by which he claims such cares should be evaluated is simply whether or not such a care is 'important to the person'. And what determines whether or not something should be important to us, in a rational sense, is something he leaves unaddressed. The standard of rational of evaluation thus does not go beyond what the agent finds important, which is of course not an objective standard. Consequently, whether or not a care is rational, and thus whether or not c is a negative consequence, still remains something that can only be evaluated on a subjective level, as I claim here.

The next belief identified by Miceli and Castelfranchi (2005) as informing anxiety is the belief that 'p is possible or likely (but possible is enough)'. Now, as Fritz (2021a) identifies, this seems to yield some unattractive theoretical consequences. Namely, it would suggest that belief in the mere *possibility* of any future event, whose occurrence would have negative consequences, is sufficient for anxiety towards it to be fitting. This means that there are countless possible objects of anxiety available to us at any time, given the ocean of events that are possible and have negative consequences; as Fritz states, 'the norms of fitting emotion demand a great deal of anxiety' (Fritz, 2021a, p.8555). Why then, one may ask, does the apparent wide-scope fittingness of anxiety therefore not correlate to its actual issue in real life? Why are we not in constant states of anxiety, given that at any given time we have the apparent requisite dispositional beliefs that there are possible future events that would have negative consequences?

In order to circumnavigate this issue, I propose that it is more accurate to treat the aforementioned belief posited by Miceli and Castelfranchi as a belief about the *likelihood* of p rather than the *possibility* of p. We need to account for the fact that we simply don't feel anxious about any and all possible future events that would have negative consequences for us. Rather, I propose that we only feel anxious about something if it breaches some sort of threshold of subjective likelihood, such that we'll only feel anxious about uncertain threats that we've assigned some notable degree of likelihood to. To illustrate: we feel anxious about the job interview going wrong precisely because we believe the likelihood of such a possibility is high enough to treat seriously, not simply because this is merely possible. This can be proven by the fact that a reduction in the likelihood we assign to a threat will presumably reduce our anxiety about it. If, for example, we find a way of accessing the interview questions we will be asked, we'll presumably feel less anxious precisely because we can now assign a lower likelihood to the possibility of the interview going badly. Interpreting such a belief in this way thus allows us to avoid the issues that arise by simply saying that it is enough that the threat is *possible* for anxiety to issue. Further, this means we needn't include any belief about a threat's possibility in our picture, since such a belief is implicit in the fact that a likelihood estimate has been

assigned to it - saying that something is likely to some degree implies a belief that it is possible. So, let's say that in addition to belief (1) above, anxiety is also informed by following belief:

> (2) p is likely to degree x (where x surpasses some subjective threshold of likelihood that determines when p is likely enough to be a salient threat)

We can trace a connection between my account so far of the beliefs that inform anxiety and the psychological account of threat appraisal in worry given by Tallis and Eysenck (1994). Here, it's claimed that our perceptions of possible threats in our environment are informed by various factors, most notably the 'cost' and 'likelihood' of future events.[31] On this account, our appraisals of these factors determine whether or not a future event is one to be worried about; if a future possibility is deemed as sufficiently costly and likely, we will perceive it as a threat and ultimately worry about it. This clearly mirrors the view I've developed so far. This is also a notion posited by Fritz, who suggests that perhaps 'the threshold for demands to feel anxiety is set by a function of an outcome's badness and it's epistemic probability' (Fritz, 2021a, p.8572). There is thus clearly plausibility to the view that our belief about the 'cost' (as Tallis and Eysenck would say) or 'badness' (as Fritz would say) of an uncertain threat and our belief about the likelihood of that threat converge in a meaningful way when anxiety is elicited, which is what our account so far has suggested. But are these sufficient for anxiety to be elicited?

No: a further, final belief is identified by Miceli and Castelfranchi (2005) in their account of anxiety. This is the belief that 'the available information about p's likelihood is insufficient to establish whether g will be thwarted or not'. Since, as stated, we aren't using the terminology of goals being thwarted here, let's simplify this to:

> (3) the available information about p is insufficient to establish whether p.

This belief, I propose, is a fundamental element of anxiety – and thus worry - insofar as it grounds our *uncertainty* about the threat we're anxious about. That is, in having such a belief, we cannot be certain

[31]Tallis and Eysenck also include an appraisal of 'imminence' in their schema, however, whilst relevant, I don't believe such an appraisal is as salient as cost and likelihood in determining whether a future event is threatening or not.

as to whether the threat - and thus its negative consequence(s) - will obtain or not, given the information we have available. And, as we saw in Chapter One (see section 1.2.2), anxiety is an emotion that is specifically responsive to uncertainty (Vazard, 2022; Kurth, 2018; Miceli and Castelfranchi, 2005).[32] Believing that the available information about some threat is insufficient to establish whether it will happen or not is just to say that we're uncertain about it, an uncertainty to which our anxiety is responsive as we've seen.

Now, clearly this is a belief that is closely related to our likelihood belief just established, insofar as each will influence the other. The degree to which we believe a threat is likely must be high enough that it surpasses the threshold of subjective likelihood that makes that threat salient, but remain low enough so that we believe that there is insufficient information to reasonably establish whether or not it will happen. And, further, both beliefs will presumably be responsive to the same epistemic considerations; the body of evidence that tells us that a threat is likely to degree x is the same body of evidence that we take to be insufficient to reasonably establish whether it will obtain. However, these are notably separate beliefs in content: our likelihood belief is our subjective assessment of how likely a threat is, whereas our uncertainty belief is our belief concerning our epistemic situation regarding that threat. Whilst they will bear on each other, then, it still makes sense to say that they are separate beliefs that we hold simultaneously.

I propose that the three beliefs I've described give us a picture of the system of background beliefs that inform our anxiety about something, which is as follows:

(1) if p, then negative consequence c.
(2) p is likely to degree x.
(3) the available information about p is insufficient to establish whether p.

[32]This relates to Fritz's (2021b) view that worrying about p is fitting when it is rational to suspend judgement as to whether p. That is, the epistemic conditions for worry to be fitting are simply when we can rationally suspend judgement as to whether p. And we can rationally suspend judgment as to whether p when we have a belief that the available information about p is insufficient to establish whether p. Having such a belief is thus a prerequisite for fitting anxiety on Fritz's view. This will support my claim further on that this belief must be epistemically rational in order for our worry to be rational.

For simplicity, and to adopt some partial terminology from Tallis and Eysenck, let's call these our (1) *cost,* (2) *likelihood,* and (3) *uncertainty* beliefs. Under our cognitivist assumption, these, I propose, are the beliefs that inform anxiety. And since, as stated, worrying is motivated by anxiety, these beliefs can thereby be understood as the background beliefs that inform our worrying.

Let's illustrate this with the example we gave in the last chapter: suppose you've heard from a reliable source there are going to be redundancies in your place of work, and you begin to worry about losing your job. Now, according to the account we've just given, we can identify the following beliefs that inform your worrying. Firstly, you have the *cost* belief that losing your job would have negative consequences - this would mean financial hardship, for example. Secondly, you have the *likelihood* belief that the possibility of losing your job is likely to some notable degree; your source is reliable and so the likelihood of you being made redundant is enough to treat such a possibility as a salient threat. And thirdly, you have the *uncertainty* belief that the available information about your possible redundancy is insufficient to establish whether this will obtain or not; you correctly believe that you have no means available to you of determining whether you will be made redundant. These beliefs, I propose, converge to elicit the anxiety you experience, the anxiety that causes you to worry about losing your job, which is constituted by reasoning that is informed by those beliefs.

I'll now show that in many cases of worry we can identify irrationality within the worrier by attributing to them a cost, likelihood or uncertainty belief that fails to satisfy a basic requirement of epistemic rationality.

3.2.3 Attributing Irrational Background Beliefs

As we've seen, according to Broome (2013) we reason 'with our attitudes'. This is what I have in mind when I talk of our beliefs 'informing' our worrying. Our background cost, likelihood and uncertainty beliefs inform the anxiety that motivates our worrying, and so those beliefs are expressed in the reasoning that constitutes that worrying. In other words, these belief are *in play* when settling the question of how to act in order to avoid or prepare for the threat, or how likely or plausible the

threat is, through worrying. And this thereby means those beliefs are in play within the process of forming either a new intention or a new belief through worrying. Indeed, as Broome says elsewhere, reasoning can be characterized as 'a process whereby some of your attitudes cause you to acquire a new attitude' (Broome, 2013, p.221).

Given a case of worry, then, I propose we can attribute cost, likelihood or uncertainty beliefs to an agent by virtue of their worrying. These are the beliefs in play within their worrying. I now want to show how the locus of irrationality in many cases of irrational worry is the rational status of one or more of these beliefs. That is, we can identify irrationality in a worrier by attributing to them an irrational background belief, by virtue of their being engaged in worry. Cases of worry that are informed by one or more irrational beliefs in this way are what I am labelling 'ill-informed worry'.

The form of irrationality I have in mind here is epistemic irrationality. This is to say that the worrier has beliefs that are not responsive to the available evidence. Bortolloti takes the kind of requirement of epistemic rationality we have in mind to be as follows: '[b]eliefs ought to be well-supported by evidence and responsive to the evidence available to the subject' (Bortolloti, 2010, p.16). When a belief is irrational in this respect, then, it is thus formed in a way that is *not* supported by, or responsive to, the evidence available to the subject. On the balance of evidence available, it is a belief they shouldn't have. Given a case of worry, then, we can identify irrationality in the agent if one of the background beliefs that informs their worry fails to satisfy this epistemic requirement. I'll now give some examples to illustrate this claim, before going into more detail about what kind of implications this may have for the rational status of the worry more broadly.

Let's first consider a case of worry that is informed by an epistemically irrational *cost* belief. Suppose your friend is the best man at your wedding. He tells you he is worrying about messing his best man's speech up. You ask why he would be worrying about such a possibility - no one will be particularly bothered if he did, and at worse he embarrasses himself for a second or two. He tells you, however, that he is worrying precisely because he believes that if he messes the speech up, the entire wedding day will be ruined, and you'll no longer be his friend. Let's also assume that this is the *sole* negative consequence of messing the speech up that he has identified. Now, assuming that you, and

the attendees at the wedding, are not of highly unreasonable temperaments, something you remind him of when reassuring him, we can plausibly say that his worrying is informed by a cost belief that is not appropriately responsive to the available evidence. His belief that ruining the wedding day would be the negative consequence of messing the speech up is a somewhat radical belief to hold. He certainly has no reliable evidence that would suggest as much, and the testimonial evidence that he has through your reassurance is certainly good counterevidence to this belief. Thus, his belief about the cost of messing the speech up is not epistemically rational to have. It's not responsive to, or supported by, the available evidence. And we can attribute such an irrational belief, and thereby epistemic irrationality, by virtue of him worrying about messing the speech up because of this.

As we stated earlier, when assessing the rational status of this cost belief 'if p, then negative consequence c', the concern is not with the evaluative component of the belief, i.e. whether or not c is indeed a negative consequence. We're simply concerned with whether the inference 'if p, then negative consequence c' is epistemically justified; that is, whether my belief that c follows from p is responsive to evidence. This is because, as stated, whether c is indeed negative will not entirely boil down to epistemic considerations but will also largely be determined by the subjective values and cares of the worrier and what they find important. The evaluation of c *as negative to the worrier* is thus not something that can be reliably epistemically assessed. For instance, we gave the example earlier of worrying about how our peers view us and what their opinion of us is; our cost belief here would be something like 'if my peers have bad opinions about me, then I'll be less popular'. Now, the 'negativity' of becoming less popular is purely relative to what I, the worrier, find important and value. To someone who cares little for what others think of them, a decline in social status will likely not be as negative. But this difference in values does not render my cost belief irrational because the starting point in assessing rationality is the worrier's values, and our assessment then looks at the justification of the worrier's beliefs with these values assumed. Thus, since we're here evaluating rationality along a specifically epistemic axis – i.e., the worrier's beliefs – we will hold fixed the worrier's evaluative framework, meaning we won't subject that framework to any kind of rational scrutiny. This is not to suggest that doing so is not possible: we can imagine plausible cases where the

worrier may value totally absurd things and worry about them, in a way that may seem irrational. However, in the interests of not being drawn into a debate about the normativity of value, I'll remain neutral and relativist about values when considering the rational status of the cost belief. As stated, we're merely concerned with whether the condition 'if p, then negative consequence c' is epistemically justified, *not* whether c is indeed negative – we can simply just assume that, for the worrier, it is.[33]

Now let's consider a case when a worry is informed by an epistemically irrational *likelihood* belief. Suppose your friend is afraid of flying, and before the flight they are worrying about a plane crash. Perhaps they tell you that they genuinely believe that there is a danger of the plane crashing; they take this to be likely enough to treat as a salient threat (although not enough to motivate them to miss the flight entirely). As per our cognitivist assumption, their worrying is directly responsive to their background beliefs about such a possibility. Now, in this case, again we can say that your friend's worrying is informed by an epistemically irrational likelihood belief. Their belief about the likelihood of the plane crashing is not supported by, or responsive to, the evidence available to them. Obviously, all things being equal, the evidence available to them is hugely stacked against there being any notable likelihood of a plane crash. It is thus an irrational belief to hold. Again, we can attribute epistemic irrationality to the worrier here by considering the background beliefs that inform their worry.

Finally, we can think of cases where the worrier's *uncertainty* belief fails to satisfy the requirement of epistemic irrationality we've highlighted. Suppose your friend has been awaiting test results from the GP, the results of which may be that they have a serious medical condition called worryitis. They have been informed that they will be sent the results via text message. One day, they finally receive a text message from their GP, and the results say that they are negative for worryitis. However, they continue to worry; they think that the results may have been sent to them in error, and

[33]Of course, our evaluation of c as negative may rely on further epistemic considerations, which are subject to objective rational scrutiny. I may believe 'if my peers have bad opinions of me, then I'll be less popular' because of my belief about how loyal my friends are – this may be evaluated for accuracy. However, this is still captured by our view; the belief that 'if p, then negative consequence c' is epistemically justified only if the beliefs it relies on are epistemically justified too.

so they are still uncertain as to whether or not they have, in fact, got worryitis. This appears to be an irrational worry to have. Your friend's uncertainty belief – the belief that the available information about the threat is insufficient to establish whether the threat is true or not – seems to be unresponsive to and unsupported by the evidence available. The GP's text, we would think, is ample evidence to establish that, in this case, that they do not have worryitis. Thus, their worrying is informed by a belief that fails to satisfy the requirement of epistemic rationality I've highlighted, meaning the worrier is exhibiting epistemic irrationality.[34] [35]

What these cases show is that, given a case of worry, we can identify irrationality in the worrier if one of the background beliefs we can attribute to them, by virtue of their worrying, is not supported by, or is unresponsive to, the available evidence. Their worrying, therefore, is *ill-informed*. The idea underlying this is that a given case of worry gives us interpretive access to the worrier's beliefs, thus providing us with means to make ascriptions of rationality or irrationality to them based on whether those beliefs are rational or not. In other words, their worrying *tells us something* about their doxastic state - and indeed their rational status too. In the next section I'll consider whether worrying in a way that is informed by an irrational background belief in the way described also renders the activity of worrying itself irrational too, over and above the beliefs the worrier holds.

[34]As stated earlier, both our uncertainty and likelihood belief are closely related insofar as both beliefs will generally be responsive to the same epistemic considerations; the body of evidence that tells us that p is likely to degree x is the same body of evidence that we take to be insufficient to reasonably establish whether p will obtain. What this means, then, is that ordinarily if your likelihood belief is epistemically irrational, so will your uncertainty belief be, and vice versa; given that these beliefs are closely connected and influence one another as outlined, if one is not supported by or unresponsive to the evidence, the same will generally be true of the other. For example, in both the case of the worrying about a plane crash and worrying about the GP's test results, the worrier has both irrational uncertainty *and* likelihood beliefs.

[35]The idea that worry can be irrational by virtue of an epistemically irrational uncertainty belief is similar to claims made by Fritz (2021b), who claims that worry (undefined in his account) is only fitting when it is rational for the worrier to suspend judgement as to whether p. This is simply to say that worry is only fitting when the worrier cannot be certain as to whether p. We can infer from this that a necessary condition of rational worry is thus having a rational uncertainty belief in place, as we're here claiming.

3.3 The Irrationality of Ill-informed Worry

3.3.1 Beliefs At Play

We've seen how we can attribute irrational beliefs to a worrier by virtue of their worrying. But to what extent does worrying in a way that's informed by an irrational belief make worry*ing* itself irrational? What I haven't addressed so far is whether the irrationality that we've identified in cases of ill-informed worry is limited to the worrier's doxastic state - i.e., their background beliefs - or whether we can describe *their worrying itself* as irrational too. I am, after all, concerned with delineating the boundaries of rationality in worry.

On the one hand, there's a case to be made that engaging in ill-informed worry is a quite rational response in the cases we've looked at, given the worrier's set of background beliefs. For instance, if our friend genuinely believes that there is a notable likelihood of their plane crashing, their worrying seems to be a wholly rational response given this. It could be argued that the rational status of that likelihood belief is irrelevant to the rational status of their worrying itself. They are simply responding to the beliefs they have. This would likely be the view held by Parfit, who argues for the dictum that 'we act rationally when our acts depend on beliefs whose truth would give us sufficient reasons to act in these ways' (Parfit, 2011, p.114). For example, he suggests that should I have the irrational belief that smoking would protect my health, it would be rational to act on this belief by smoking. Or, if I falsely believe that we're meeting for dinner at 5pm, when really we arranged to meet at 6pm, Parfit would argue that it is rational for me to arrive at the restaurant at 5pm.

I'll remain neutral on Parfit's general view. What's relevant to our project is whether this kind of consideration applies to cases of ill-informed worry. Is worrying a rational response given the worrier's set of background beliefs in cases where one or more of those beliefs is irrational? It seems not. There does seem to be something irrational not only about the worrier's background beliefs, but *the worrying those beliefs inform* too. One way we could support this view is by suggesting their worrying must be irrational because, as we've seen, their irrational belief 'participates' in the reasoning involved as 'part of the process […] of forming new attitudes', to borrow Broome's (2013) terminology. We might argue that the irrational background belief that informs their worrying is not

merely operationally inert with respect to the reasoning involved; it is a belief that is *at play* within the process of the reasoning involved. And, since that belief is one that rationally they *ought* not to have, we could thereby say that their worrying is one that they *ought* not to be engaged with in the same way.

To illustrate, consider the following: when worrying about his best man's speech, our friend may be engaged in practical reasoning aimed at preparing for what to do if he messes the speech up. We can say that his cost belief that 'if I mess the speech up, then the wedding day will be ruined', is at play in his worrying by virtue of him worrying in a way that is informed by it. His worrying may involve him deliberating about what to do if the day is ruined, how he will apologise to you, or how to get his speech memorized perfectly; here his irrational belief is providing the content for his practical reasoning and ultimately determining the trajectory of it, and it seems plausible that his worry*ing* is irrational precisely because his irrational cost belief is at play in this way. The same could be said if the reasoning that constitutes his worry is epistemic, rather than practical. In this case, he would be engaged in resolving the uncertainty of the threat in a way that is influenced by, and dependent on, his irrational belief about how costly that threat is. Thus, in either case, whether our worrying be constituted by practical reasoning or epistemic reasoning, the fact that it's informed by one or more epistemically irrational background beliefs seems to render the reasoning itself irrational, since these beliefs are *at play* within it. On the balance of the available evidence, we shouldn't have such a belief, and so we also shouldn't be worrying in a way that is informed by it. Indeed, this view is argued for by Mueller, who claims, contra Parfit, that 'relying on an epistemically irrational belief in practical reasoning makes one's practical reasoning irrational, and also the actions based on it' (Mueller, 2011, p.141).

This view would seem to provide a basis for claiming that, in cases of ill-informed worry, our worrying itself is certainly irrational, not merely our background beliefs. And the form of irrationality attributable to our worrying would be epistemic - it is the fact that, within the process of worrying, there is a belief *at play* that is not supported by, and is not responsive to, the available evidence. This means we're worrying irrationally. In other words, it would be the epistemic irrationality of one or

more of the informing beliefs that renders the worry in which they participate epistemically irrational too.

3.2.2 Acceptances At Play

However, the view that ill-informed worrying is epistemically irrational in this way can be thrown into question by considering the views of Bratman (1992), which I'll briefly outline before discussing the implications they may have for our account. Contrary to Broome, on Bratman's view beliefs are *not* the attitudes at play when we engage in reasoning. Rather, the attitudes at play are *acceptances*, propositional attitudes that are similar to belief, but merely involve us '*treating* p as true'. Bratman claims this because, he points out, our doxastic attitudes towards propositions involved in reasoning often fall short of full-blown belief in them. For example, when engaged in practical reasoning about when to get a taxi to the train station to catch a train, I *treat it as true* that there will be traffic en route, allowing me to err on the side of caution - this acceptance is at play in my reasoning about when to get a taxi. But I don't necessarily *believe* there will be traffic. Bratman cites cases like these to argue against the assumption that full-blown beliefs are the attitudes at play within our reasoning. Rather, he claims, we merely *treat* propositions as true – accept them - when we engage in a piece of reasoning.

For Bratman (1992) and Cohen (1992), the content of our acceptances is very often the same as the content of our beliefs; as Cohen says, 'if you believe that p, it is normal for you also to [accept p], and if you accept that p it is normal for you to [believe] that p' (Cohen, 1992, p.17). The only difference is that accepting p involves *treating* p as true whereas believing p involves *taking* p to be true. So, whilst acceptances, rather than beliefs, are the attitudes at play within our reasoning, these acceptances will often simply reflect the background beliefs we have. But this does not necessarily have to be the case: in cases such as accepting that there will be traffic en route to the station when reasoning about when to get a taxi, it is often necessary to accept propositions we don't believe or have evidence for. It may make instrumental or prudential sense to treat as true the proposition 'there will be traffic' within my reasoning even if I don't believe it to be true. This is because, as Bratman says, 'what we reasonably [accept], in contrast with what we believe, can vary across different

contexts and be in part shaped by various practical considerations' (Bratman, 1992, p.04). What is a reasonable acceptance to make within a piece of reasoning thus depend on the context of that reasoning and what we're reasoning about, rather than the evidence we have. And this means that acceptances do not carry with them the same commitment to truth that beliefs do. That is, an acceptance that p is not normatively or rationally regulated by the truth or falsity of p in the way a belief that p is.[36]

Thus, unlike beliefs, there is no nothing epistemically irrational about accepting a proposition that is not supported by, or is unresponsive to, evidence, since the context of our reasoning may mean it is necessary to do so for practical purposes. My acceptance that 'there will be traffic en route to the station', for instance, is reasonable even though I have no evidence for this, because my doing so allows me to err on the side of caution. Acceptances thus aren't subject to requirements of epistemic rationality – the requirement that we have evidence for them - in the way that beliefs are. Where a rational belief must be supported by, and responsive to, the available evidence, rational acceptances don't need to be.

If Bratman is correct in his view, then our claims in the previous section would seem to be undermined. Remember, we suggested that perhaps what makes the act of worrying irrational in the cases we've surveyed, beyond simply the fact that we have epistemically irrational background beliefs, is the fact that these beliefs are *in play* within the reasoning process, making our worrying itself epistemically irrational. However, this wouldn't be the case on Bratman's view. For him, it would be *acceptances* that are the attitudes in play within the reasoning that constitutes our worrying, not beliefs, even if the content of these acceptances are the same as our background beliefs that inform our worrying. But the epistemic irrationality of our background beliefs doesn't apply to the acceptances at play within our worrying, because acceptances are not subject to requirements of epistemic rationality in the way beliefs are, as we've just seen. Consequently, our worrying itself therefore can't be understood as epistemically irrational in the way we proposed. That is, *accepting* –

[36]See Shah and Velleman (2005) for further discussion of this distinction.

treating as true - something like 'if I mess up the best man's speech the wedding day will be ruined' isn't epistemically irrational if we have no evidence to support that acceptance, which Bratman would say is what is happening when we worry. So, if it is true that acceptances, rather than beliefs, are the attitudes at play within our worrying, we thus can't say that there is anything epistemically irrational about our worrying itself in the way we proposed, even if we can still be said to have irrational background beliefs.

However, I propose that we can still identify irrationality in the reasoning that constitutes our worrying – in an arguably more precise manner - if we accept Bratman's view (no pun intended). This is because, despite not being subject to requirements of epistemic rationality, acceptances are subject to requirements of *practical* rationality. In the words of Cohen (1992, p.12), taking an attitude of acceptance towards p is a 'voluntary mental act', meaning acceptances are something we *do* mentally. They are not dispositional doxastic states like belief; rather, they involve us treating a proposition as true for the purposes of effective reasoning, as we've seen. This thereby makes them candidates for rational evaluation along a practical axis, rather than an epistemic axis as with beliefs. And the requirement of practical rationality that acceptances are subject to is that they must be *responsive to reasons*: we must have a *reason* for accepting something as true in the same way that we must have reasons for our other rational actions, overt or mental.[37] Such reasons may be epistemic – we may have evidence in favour of p that makes it rational to accept p as true. Or such reasons may be practical – the context of the situation may make it necessary to accept p as true, such as accepting that there will be traffic in order to err on the side of caution when determining when to get a taxi. To accept something as true *without* a reason, however, would essentially be to *act* despite having no reasons to. And this is irrational in a purely practical sense.

According to this view, the reasoning involved in the cases of worry we've looked at is irrational. The form of irrationality at stake is just practical, rather than epistemic as we previously thought. This is because when our worry is informed by an irrational background belief, *we have no*

[37]See Lehrer (1979), Engel (1998) and Ullman-Margalit and Margalit (1992) for further discussion on this requirement of rationality that acceptances are subject to.

reasons for accepting certain proposi tions within the reasoning involved that worrying. We can explain this as follows. Since, under our cognitivist assumption, the worrying in the cases we've considered is informed by anxiety that is responsive to our background beliefs, we can assume that the acceptances at play within our worrying will reflect those beliefs. As we've seen, this is the case with much of our reasoning. For example, if our worrying best man's background cost belief is 'if I mess up the speech, then the wedding day will be ruined', then the reasoning involved in his worrying will involve him *accepting* – treating as true - 'if I mess up the speech, then the wedding day will be ruined'. As we've seen, his cost belief is epistemically irrational. But his acceptance is not epistemically irrational since it is not subject to the same requirement of epistemic rationality as his beliefs are. However, it *is* subject to the requirement that there is an epistemic or practical reason for it.

Now, we already know that there are no epistemic reasons for this treating it as true that messing up the speech would ruin the day, since there is no evidence for this. But further, because this acceptance reflects a background cost belief that he shouldn't have, he has no practical reasons for this acceptance either. There are no practical considerations within the context of his worrying that gives him a reason for treating it as true that messing up the speech will ruin the day - he simply does so because his worry is motivated by an anxiety that is informed by an irrational cost belief. As we've seen, accepting propositions we've no evidence for can be rational if we have good practical reasons to – accepting 'there will be traffic en route to the station' in order to err on the side of caution, for example. But our worrying best man does not have such a practical reason for treating it as true that messing up the speech will ruin the wedding day . Thus, given this absence of rationalising reasons, his acceptance is practically irrational.[38] On this view, in the cases I've surveyed, the locus of

[38]It could be argued here that one of the corresponding background beliefs that informs our worrying gives us a rationalising reason for such an acceptance, even if that belief is rational. So, our cost belief 'if p, then negative consequence c' would give us a reason for accepting 'if p, then negative consequence c'. This, again, would likely be what Parfit (2011) would argue. However, Cohen (1992) states explicitly that it is only in restricted set of 'offbeat' cases that a belief itself can be treat as a reason for an acceptance; most notably cases where there is no time or no opportunity to check that our belief-forming mechanisms are functioning accurately. This is because we need *independent* reasons for acceptances. Since this cannot be said of cases of worry (we can plausibly assume we *do* have time and opportunity to question whether our belief-forming mechanisms are working accurately), the cases we're examining do not fall into this set. Therefore, our irrational background belief cannot be treated as a rationalising reason for our acceptance.

irrationality in our worrying is *not* the fact that our irrational background beliefs are in play within our worrying, as I previously suggested, but rather the absence of reasons for the acceptances that are in play.

I find this a more plausible position than our suggestions in the previous section. As we've stated, it seems intuitive that there is something irrational about the act of worrying itself, beyond simply the rational status of the worrier's background beliefs we established earlier. We originally suggested that this irrationality is because irrational beliefs are *in play* within the reasoning that constitutes our worrying, making our worrying itself epistemically irrational. However, Bratman's view suggests that it is, in fact, *acceptances* at play within reasoning, rather than beliefs. And in order for an acceptance to be rational we must have a reason for it, since taking such attitudes can be considered, in Cohen's (1992) terms, a 'voluntary mental act'. In cases where our worry is informed by an irrational background belief, one we shouldn't have, then we lack reasons for the acceptance within our worrying that reflects that belief. This makes us practically irrational. In cases of ill-informed worry, then, the kind of irrationality at stake in the activity of worrying itself is thus captured along a practical axis, rather than an epistemic axis.

This switch from the epistemic to the practical captures the rational failing of such cases more accurately, I think, because when worrying is informed by an irrational belief, it seems that the act of worrying itself involves a form of irrationality that is different to the irrationality of the beliefs that inform it. That is, it seems that the worrier is *behaving* irrationally (practical irrationality) in engaging with this worry, not merely *believing* irrationally (epistemic irrationality). In other words, they are *doing* something that an ideally rational agent would not. This is captured by our proposal – in engaging in ill-informed worry they are doing something irrational by treating something as true without a reason. Of course, this isn't to suggest that the worrier is epistemically in the clear – we can still attribute to them irrational background beliefs. However, when we consider in what respect their *worrying itself*, beyond those beliefs, is irrational, it seems that capturing such irrationality in terms the practical rational error we've identified seems most plausible. The worrier is thus *both* epistemically irrational (they have epistemically irrational background beliefs) and practically

irrational (their worrying involves acceptances that lack rationalising reasons) in the case we've surveyed.

3.3.3 Irrational Worry, Irrational Consequences

The account I've offered has identified two forms of irrationality that are at stake when a given case of worry is ill-informed. On the one hand, there is the epistemic irrationality of the background belief itself, which we can attribute to a worrier by virtue of their worrying. On the other, there is also the practical irrationality in their being engaged with that worry; the acceptances that are involved in that reasoning lack the appropriate justifying reasons, given that their worrying is informed by irrational beliefs. This means that a necessary condition of rational worry is that the worrier's background beliefs are rational. In line with our project of delineating the boundaries of rationality in worry, we can thus establish the following requirement of rationality that worry is subject to:

When worrying about p, our worrying should be informed by rational beliefs about p.[39]

Before turning to the next chapter, I want to briefly highlight a further respect in which irrationality may emerge in the cases of worry I've surveyed, namely, the way such cases can generate further irrationality. Remember, Broome (2013) says that reasoning involves 'forming new attitudes' on the basis of our current attitudes, which as we've just seen are best understood as acceptances. On this view, if our worrying involves practical reasoning, we're in the process of forming new *intentions*, and if our worrying involves epistemic reasoning, we're in the process of forming new *beliefs*. It is plausible that if we were to form such attitudes through ill-informed worry, then it's likely that our newly formed attitudes will be irrational too.

To illustrate: suppose, for example, our friend who is worrying about having worryitis forms the intention, through worrying, to pay for a private GP appointment to get a second opinion, despite

[39]Of course, this requirement is not unique to worry. Much of what we do is subject to the requirement that it is informed by rational beliefs. However, what substantiates this requirement *is* unique to worry - violating it makes our worrying irrational in a very specific way as we've seen.

them having received negative test results from his NHS GP. Remember, we showed that in this cases their uncertainty belief was unresponsive to the available evidence, meaning that they continued to worry despite the test results. It's plausible that this intention to seek a second opinion is an irrational one to have, given the available evidence. Indeed, as mentioned earlier, according to Mueller *'*relying on an epistemically irrational belief in practical reasoning makes one's practical reasoning irrational, and thus *also the action based on it*' (Mueller, 2013, p.141; italics added for emphasis). And the same is true of the beliefs we may form through worrying too if our worrying involves epistemic reasoning rather than practical. This is precisely because the new attitude we may form, be it an intention or a belief, will be the output of worrying in an irrational manner as described. What this shows is that not only is the worrier both epistemically and practically irrational in being engaged with worries such as this, but their worrying also has the potential to generate further irrationality through the new attitudes it may cause them to form too.

Conclusion

In this chapter I've established a requirement of rationality that worry is subject to: *when worrying about p, our worrying should be informed by rational beliefs about p.* I did this by demonstrating the rational failings that ensue when this requirement isn't met. Firstly, there is the fact that the worrier has an irrational background belief itself. Secondly, there is the way in which this belief causes the act of worrying to be irrational; it means that the acceptances at play within the reasoning that constitutes that worrying lack rationalising reasons. Thus, according to this view, when a case of worry fails to satisfy the requirement of rationality established, the worrier exhibits both epistemic and practical irrationality. On top of this, we also saw how ill-informed worry will likely lead to further irrationality, insofar as the attitudes it causes us to form will presumably also be irrational too.

Our discussion here has been subject to the cognitivist assumption we initially established; this was the assumption that the cases of worry under consideration are those that are responsive to, reflective of, and proportionate to the background beliefs held by the worrier. It was necessary to do

this in order to properly examine how the root cause of irrationality in many cases of worry can simply be the worrier's background beliefs. In the next chapter, we will remove this assumption. This will allow us to consider how irrationality may arise in cases of worry where the worrier's beliefs are completely rational, meaning the locus of irrationality is located in the way they worry *relative to* those beliefs.

Chapter 4: Recalcitrant Worry

In the last chapter we identified a requirement of rationality that worry is subject to: *when worrying about p, our worrying should be informed by rational beliefs about p.* We saw that when a given case of worry fails to meet this requirement, the worrier is irrational in both an epistemic and a practical sense. I now want to identify a second requirement of rationality that worry is subject to by providing an account of another form of irrational worry, one that many will be familiar with. I'll call such cases 'recalcitrant worries'. These are cases where irrationality emerges through the degree to which, or the intensity at which, one worries. They are those cases where we might accuse someone of worrying 'too much'. Of course, in some respects a worrier who engages in ill-informed worry may also be accused of worrying 'too much', however as we will see the form of irrational worry I identify here is notably different in many key respects.

The main distinction between recalcitrant worry and ill-informed worry is the rational status of the worrier's background beliefs. We saw in the last chapter how worry is irrational when one or more of the beliefs that informs it is irrational. I now want to consider how worrying may be irrational in a way in which those beliefs aren't implicated, where the worrier has perfectly rational background beliefs. More precisely, I'll show what's irrational about worrying about some possible future threat in a way where the intensity of that worry is *out of proportion* to the worrier's beliefs about that threat.

The chapter will go as follows. First I'll describe the form of irrational worry I want to examine. Such cases, I'll claim, are characterized by disproportionality between two separate elements of worry: (1) the worrier's *appraisal of threat*, which I'll explain in terms of the background beliefs I established in the previous chapter, and (2) the *intensity* of the worry experienced, which I'll suggest should be understood in both cognitive and affective terms. I'll then argue that cases of worry that involve this kind of disproportionality are irrational. In particular, I'll propose that such disproportionality amounts to a unique form of 'emotional recalcitrance', a phenomenon widely understood to involve irrationality on the part of the agent. I'll supplement this claim by appealing to accounts of emotional recalcitrance from the literature. Doing so will draw attention to the respect in

which such cases of worry are irrational, thereby shedding light on a second requirement of rationality that worry is subject to. This requirement is as follows: *when worrying about p, the intensity of that worry must be in proportion to our appraisal of the level of threat posed by p.* This account will thereby build on the work we started in Chapter Three by further delineating the boundaries of rationality within worry.

4.1 Worrying 'Too Much'

4.1.1 Worrying By Degrees

We can worry at varying degrees of intensity. Sometimes we may worry in a niggling, lingering sense, accompanied by a dull, mild anxiety. In other cases, our worries may be all-consuming, our attention held in a tight grip by our worrying as we experience acute and crushing feelings of anxiety. And, generally, the intensity of our worry will be determined by our beliefs about what we're worrying about. The more costly or likely we believe something to be, for instance, the more intensely we'll worry about it. As Tallis and Eysenck say in their psychological account of worry: 'an individual with a fatal illness is more likely to experience intense and frequent worry compared to an individual who has mislaid an important document' (Tallis and Eysenck, 1994, p.43). This is intuitive. It's thus uncontroversial to suggest that by and large there's a strong connection between our beliefs about what we're worrying about, and the intensity of our worry about it. However, sometimes the intensity of our worrying can be inappropriate or unfitting to our background beliefs. We might, for example, worry intensely about something we believe to be highly unlikely. I here want to suggest that such cases of worry involve irrationality. I'll now give an example of these cases, before going into more detail about how we should understand the irrationality that manifests within them.

Suppose, for example, one day a friend informs you over lunch that they are worried that their home is going to be broken into. There's been a spate of break-ins to houses in the neighbourhood they live in lately, and they're concerned that theirs will be next. You agree that this is something to be worried about. Further, suppose their beliefs about the cost, likelihood and uncertainty of the possibility of a break-in are all formed appropriately in light of the available evidence. Unlike in the

cases we looked at in the last chapter, your friend thus has perfectly rational background beliefs. Suppose, then, a week later you meet them again, and notice dark bags under their eyes. They look clearly out of sorts. In response to your expression of concern, they tell you they have hardly slept a wink of sleep in the week since your last meeting. Their worry about their house being broken into has grown in intensity – it's preventing them from sleeping and is affecting their day-to-day life dramatically, and they are unable to stop worrying about the prospect of their house being broken into. Now let's assume that, despite the intensity of their worry growing in this way, there are no new epistemic considerations that have influenced your friend's background beliefs about the possibility of a break-in since your last meeting. There's been no increase in the regularity of the break ins, there's nothing different about the security status of their home, etc. Their background beliefs haven't changed, even though the intensity of their worry has increased considerably.[40] As such, it seems that something is amiss about the intensity of the worry they are now experiencing. We get the sense that our friend ought not to be worrying as intensely as they are in the second meeting, given what they believe about the possibility of a break-in. We might say that our friend is worrying 'too much'.[41]

I propose that our friend is worrying irrationally in the second meeting. That is, in worrying 'too much', the intensity of their worry is *out of proportion* to their beliefs. Indeed, this is implied by terminology we often use: that we can worry 'too much' suggests there is some kind of normative constraint on the degree or intensity of our worrying. What's problematic about such cases, I propose, is that the degree to which we're worrying doesn't fit with what we believe. It's therefore by virtue of the intensity of our worrying that irrationality emerges in these cases. Indeed, the related idea that an emotional or affective state can be irrational on account of how *intense* it is has been discussed in the emotion literature. Fritz, for example, argues that an emotion – in particular anxiety – can fail to be fitting by virtue of its 'size' in relation to its object, if it involves 'a more intense reaction than is

[40]For now, I'll not provide an explanation as to how our worries may increase in intensity in this way: I'll simply assume that it can. Such an explanation will be the focus of Chapter Four.

[41]As stated in the introduction to this chapter, engaging in ill-informed worry may also be described as worrying 'too much' also. However, this would be from a purely externalist perspective. As I'll discuss in more detail detail later on, the notion of worrying 'too much' I'm concerned with here is strictly from an internalist perspective.

fitting' (Fritz, 2021, p.8563). And, in a similar vein, Broad suggests that there is a rational failing when emotions are 'inordinate' in relation to their object:

> […]an emotion which is fitting in kind to its epistemological object, may be unfitting in degree i.e., inordinate. A degree of fear which would be appropriate to what one took to be a mad bull would be inappropriate to what one took to be an angry cow. (Broad, 1952, p.209)

It's these kinds of consideration that I want to apply to worry, exposing the specific rational failing that occurs through worrying too much. As stated, I propose that these cases of irrational worry are characterized by a notable *disproportionality* between particular elements of worry. I'll now turn my attention to exploring this disproportionality.[42]

4.1.2 The Elements of Proportionality In Worry

i) Appraisal of Threat

In order to substantiate the proposal that worrying too much is irrational because of some kind of disproportionality, we need to consider which elements of worry might be out of proportion to one another in such cases. That is: what exactly is on either side of the disproportionate relationship being proposed?

On the one hand, I propose we have our background beliefs. As we saw in the last chapter, these are our cost, likelihood and uncertainty beliefs. These are the beliefs that inform our worrying. Recall that our *cost* belief has the content 'if p, then negative consequence(s) c^1,…, c^n', our *likelihood* belief has the content 'p is likely to degree x', and our *uncertainty* belief has the content 'the available information about p is insufficient to establish whether p'. Now, in their account of worry, Tallis and Eysenck (1994) claim that we can understand our cost and likelihood beliefs, taken together, in terms of a general 'appraisal of threat'. This means together our cost and likelihood beliefs determine the level of threat we believe what we're worrying about poses. In other words, how 'threatening' we take the worried about event to be is established by how costly and likely we believe it is. This makes

[42]It should be noted here that the claims I make in this chapter also apply to cases where we might be accused of irrationality by virtue of *not worrying enough*. That is, the disproportionality I'll identify, and which amounts to irrationality, can occur through not worrying enough about certain threats.

sense. However, on our account there is uncertainty belief in play too, meaning forming such an appraisal of threat may be difficult. Being uncertain about some future possibility may undermine our capacity to form an accurate appraisal of how likely and costly – and therefore threatening, for Tallis and Eysenck - it is. For instance, take the case we gave in Chapter One about the mother worrying about her son who is fighting in a foreign war; she may simply be unable to form any accurate belief about how likely it is he will be harmed, faced with the pure uncertainty of such a possibility.

Nevertheless, it seems that worry does involve such an appraisal of threat, and although worry is typically characterised by uncertainty, this uncertainty is often simply noise. Whilst it may make appraisal difficult, even deeply problematic as in the mother's case, presumably worry still starts from the kind of appraisal Tallis and Eysenck identify. Even while believing we don't have enough available information to establish whether something will happen, or how likely it is, we can still form justified beliefs – albeit potentially vague ones – about the likelihood and potential cost of such a possibility, thereby forming an appraisal of how threatening it is. So according to the framework of background beliefs established in the last chapter, it makes sense to say that worry *will* involve the worrier having some kind of appraisal of threat they believe the worried-about event poses as Tallis and Eysenck suggest, even given worry's characteristic uncertainty.

For instance, suppose you're worrying about test results you're awaiting to receive from your GP, which will reveal whether you have a serious medical condition. Your GP has told you that the condition is rare, but it's worth testing for anyway given how serious it is. In such a case, you have beliefs about the likelihood and cost of such a possibility, which are based on the GP's testimony, and perhaps your own internet research into the condition. This gives you an appraisal of how threatening the possibility is. However, you're also aware that you don't have sufficient information to establish whether or not you indeed have the condition – only the test results can reliably tell you this. So, in such a case you have an appraisal of threat, determined by your cost and likelihood beliefs, whilst also being uncertain (at least while waiting for the results) as to whether such a possibility will obtain. This shows how the characteristic uncertainty involved in worry still allows for an appraisal of threat to be formed.

So, we can say that our worry is informed by our background beliefs, and the function of two of these background beliefs – our cost and likelihood beliefs – determines our appraisal of threat, i.e., the level of threat we believe the worried-about even poses. As we saw earlier, this appraisal of threat will ordinarily determine the degree of worry motivated. If we believe what we're worrying about is highly costly and likely, we'll presumably worry at a higher intensity than we would if we believed it was only slightly costly and likely. If the test results, for example, we're waiting for from our GP are for a rare condition that only has mild symptoms, then we'd think we'd be less worried than if the test results are screening for a disease that poses a risk to life. The difference in the intensity of the worry in either case will thus be commensurate with differences in our beliefs about the cost and likelihood of what we're worrying about. And so, the intensity of our worry will be determined by our appraisal of threat.

In this chapter I'm concerned with cases of worry where this does not hold. In such cases, the intensity of our worry is *out of proportion* to our appraisal of threat, where we normally find it to be commensurate. Having established what we mean by 'appraisal of threat', we now need to establish what we mean by the notion of 'intensity of worry', which I'm proposing stands on the other side of this disproportionate relationship from our appraisal of threat in the cases I'm concerned with. Of course, we all have a sense of what it means to worry at varying degrees of intensity. However, we need a more robust account of what exactly 'intensity' means in order to demonstrate how irrationality emerges when it's out of proportion in this way.

ii) Intensity of Worry

Obviously, there are no clear means of quantifying the varying levels of intensity we may worry at, even though we've a good sense that some worries are more intense than others. The nearest we have within the extant literature are empirical studies in which worry is 'measured' in participants, such as the Penn State worry questionnaire conducted by Borkovec et. al (1990). Such studies, however, quantify worry based on the weighting of self-report items from participants about the general ways that worry influences their life, such as 'many situations make me worry' or 'I worry about projects until they are done', with each item being scored on a scale of 1-5. Whilst relevant for application to

more empirically centred psychological or therapeutic purposes, quantifying worrying in this way doesn't shed much light on the actual qualitative features of worry that determine its intensity, which is what we're here concerned with.

However, I propose that we already have the necessary tools available to us for this. Since 'intensity' would seem to be a specifically phenomenological property – that is, it is a property that determines *what it is like* to worry - we simply need interpret it in the same terms that we gave our characterization of the nature of worry in Chapter One - that is, in terms of both a *cognitive* and *affective* dimension (see section 1.2-1.3). As per our characterization then, let's interpret the varying levels of worry's intensity in terms of both cognitive intensity and affective intensity.

Understanding the affective intensity of worry seems rather straightforward: the higher the affective intensity our worry, the more acute the anxiety is that motivates it. That an emotion or affective state can be experienced at varying levels of intensity in this way is intuitive. With respect to the 'cognitive intensity' of worry, since the cognitive dimension of worry is understood as engagement with particular modes of reasoning, it seems plausible to simply say that cognitive intensity is determined by the degree to which we're engaged with that reasoning. But obviously 'engagement' with reasoning isn't easily quantifiable in degrees, if at all. It seems that we can either be engaged with a piece of reasoning or not. What is quantifiable, however, is the amount of attention our engagement with such reasoning captures and demands. A good, easily quantifiable proxy for engagement, then, might be how much of our attention this reasoning takes up, and understanding it in these terms gives us a straightforward and intuitively appealing way of understanding the varying degrees of worry's cognitive intensity. So, worries of a high intensity will see us being engaged with the constitutive reasoning to a great degree, which simply means that our worrying demands more of our attention, both in temporal terms and in terms of preoccupation. That is, we'll spend more time engaged with it and it will be more prominent in our minds. And, conversely, less intense worries will demand less of our attention in these respects. It thus seems that engagement with the reasoning that constitutes our worry – the cognitive dimension in worry - is plausibly quantifiable in terms of how much attention is captured by our worrying.

So, my proposal is that the notion of 'intensity of worry' is to be understood in both affective and cognitive terms, namely as being determined by the intensity of anxiety motivating our worry on the one hand, and the amount of attention captured by our worrying on the other. This is a picture that is supported by the psychological literature, on worry and on the emotions more generally. For one, as we saw earlier, Tallis and Eysenck (1994) state that worry will be more *intense* and *frequent* if its object is a fatal illness rather than a mislaid document, suggesting that acuteness of anxiety and amount of time paying attention to our worrying are the kind of phenomenological features of worry that determine its varying degrees of overall intensity.[43] This aligns with our own picture. Further, it's widely held in both the psychological and philosophical literature on emotion that there are close links between emotions and our capacity for attentional control, such that emotions will often significantly influence what we pay attention to and how much attention we pay to it, directing it towards objects of salience that are germane to that emotion's content.[44] This influence will occur to a greater or lesser degree depending on the intensity of the emotion, meaning in some cases a great deal of our attention will be captured and in others less attention will be captured. [45] In the case of worry, then, it thus makes sense to suggest that more intense worries will involve more acute anxiety, meaning more of our attention is demanded. This is exactly what our account states. Indeed, as suggested in the psychological accounts of worry given by Wells (1994), Hirsch et. al (2011), and Hirsch and Mathews (2012) a cardinal sub-personal feature of worry is the way in which our attentional control capacity is hindered (see Chapter Two, section 2.1.2). It's thus plausible that the degree to which this is true is commensurate with – and indeed determinate of - the overall intensity of our worry. Again, this will mean that the more intense the worry, the more of our attention is captured by our worry, as I'm suggesting.

[43]I'll assume that Tallis and Eysenck here use the term 'intensity' in a specifically affective sense: I use the term in a more general sense as described, referring to both cognitive and affective intensity.
[44]For empirical discussions of this relationship, see (LeDoux, 1996); for philosophical discussions of this relationship, see (Brady 2013; 2009), and (De Sousa, 1987).
[45]Note that this means that the intensity of worry is not determined by wholly independent variables. That is, the elements of proportionality to worry I am proposing – intensity of anxiety and amount of attention captured - are not necessarily independent from one another, since as I state here the intensity of motivating anxiety will often *determine* how much of our attention is captured. In Chapter Six I'll look more closely at how anxiety levels determine attention patterns in this way.

Beyond this support from the literature, our picture is intuitively appealing. As stated, it seems obvious that the most plausible way of understanding the intensity of worry is in terms of both the acuteness of the anxiety we experience and the amount of attention demanded by it. Consider the following example to illustrate: say, for instance, you have a job interview coming up for your dream job which you've been trying to land for years, and you find yourself worrying about the possibility of not getting it. Suppose, then, you find out through a peer that there is only one role available, where you previously thought there were five. Given this testimonial evidence, you now believe it's more likely that you won't land the job than you did before, which in turn causes the intensity of your worry to increase. The change in your likelihood belief thus causes your appraisal of threat to be influenced, thereby influencing the intensity of your worry. It seems clear that the phenomenological features of your worrying that will change as your worry increases in intensity are precisely the cognitive and affective elements of worry I've identified: presumably you will find that more of your attention is captured by your worry – in temporal terms and in terms of pre-occupation - and the anxiety that motivates your worrying will become more acute. We thus have good reasons to think that worry's overall intensity is best interpreted in terms of both these dimensions as described.

With this framework established, we've now got in place the two sides of the disproportionate relationship I'm positing: our *appraisal of threat* on the one hand, and the *intensity of worry* on the other. It's these elements, I propose, that stand in a disproportionate relationship to each other in cases of worrying 'too much'. In such cases, the agent worries about some future possibility at an intensity that outstrips their appraisal of the threat posed by that possibility. In the terms we've established, this means that the amount of attention captured by their worrying, and the acuteness of the anxiety they experience, is too great, given how threatening they actually believe that possibility to be. This is exactly what's happening in the second lunch meeting with our friend: in being consumed by their worry in the way they are, the *intensity* of our friend's worry is no longer in proportion to their appraisal of the level of threat posed by the possibility of a break-in, which it was in the first lunch meeting a week prior. This disproportionality, I propose, amounts to irrationality. Indeed, as I'll argue, it is rationality itself that establishes the apparent normative relationship between our appraisal of

threat and the intensity of our worry, insofar as when the intensity of our worry is 'too much', in the way described, the worrier is irrational.[46]

Note that in the cases we're concerned with I'll not be suggesting that irrationality necessarily emerges on account of the intensity of worry being out of proportion to the 'objective' level of threat posed by the worried about event, but rather the worrier's *beliefs* about the level of threat it poses. That is, it's only the disproportionality between the worrier's own subjective appraisal of threat and the intensity of their worry that I'll say is sufficient for irrationality. The rational evaluation I'm subjecting these cases to is thus an internalist one.[47] The reason for this is that as stated earlier, I'm here assuming that the agent has epistemically rational background beliefs that form their appraisal of threat, which means by and large this appraisal will accurately track how threatening the worried about event really is (unless one is a sceptic about the connection between justification and truth). Under such an assumption, then, the worrier can't be accused of irrationality in cases where the intensity of their worry is out of proportion to how threatening what they're worrying about really is, since they can only respond to the epistemically justified beliefs they have.[48] For instance, in worrying about the job interview in the case given above, when our friend tells us that there's only one position available, perhaps they forget to tell us that we're the only person being interviewed for the role, meaning we're more or less guaranteed to secure it. However, we've no way of knowing this. So, the likelihood of not securing the job is extremely low, meaning the objective level of threat posed by what we're worrying about is extremely low, and yet we worry at a high intensity given our friend's testimony. The intensity of our worry is thus greatly out of proportion to the level of objective threat posed by what we're worrying about. But we wouldn't think that we're irrational in worrying at the intensity we are, since, given the available evidence, we simply have no way of knowing that we're

[46]As stated in Footnote 2, one is also irrational if the intensity of their worry is too *low,* given their appraisal of threat.

[47]See Wedgwood (2002), Kolodny (2005) and Broome (2007) for detailed discussion of this interpretation of rationality.

[48]At this juncture one might object that this would be to suggest that Parfit's (2011) views we considered in Chapter Three are applicable to worry, which we rejected at the time. However, as we're here arguing, rational worry must be informed by an epistemically rational appraisal of threat, and the intensity of our worry must be in proportion to this. I think that Parfit's view, applied to worry, would suggest that worry is rational even if it responsive to epistemically *irrational* appraisal of threat; this is not consistent with our view.

the only one being interviewed. Thus, assuming an epistemically rational appraisal of threat, it's thus not plausible to suggest that, rationally, we're necessarily required to worry at an intensity that's in proportion to how *objectively* threatening the worried about event is. All that's required is that we shape our background beliefs according to the available evidence as we saw in the last chapter, and, as I'm now arguing, proportion the intensity of our worry to the appraisal of threat that our cost and likelihood beliefs form.[49]

With this picture in place, we can now proceed to demonstrating how the kind of disproportionality we've identified involves irrationality. I'll do this by showing that such cases exhibit a unique form of a phenomenon known in the emotion literature as 'emotional recalcitrance'.

4.2 Emotional Recalcitrance

4.2.1 Recalcitrant Emotion and Recalcitrant Worry

Emotional recalcitrance is where an emotional response to an object or event occurs in tension or conflict with our evaluative beliefs or judgements about it (Döring, 2015; Brady, 2009; D'Arms and Jacobson, 2003). If, for example, you experience fear of flying whilst sat on an aeroplane despite believing that you're completely safe, your fear is recalcitrant. Or, to use an oft-cited example given by Greenspan (1988), suppose at your friend's house you encounter their old, toothless dog Fido, and, despite believing Fido poses you no danger, you feel afraid of him. Your fear in this case is recalcitrant. Emotional recalcitrance is thus characterized by this kind of tension or conflict that may occur between an agent's emotional responses and their beliefs or judgements.

[49]Of course - shelving our working assumption that the worrier's background beliefs are epistemically justified for a moment - someone may be said to be worrying 'too much' because the intensity of their worry is in proportion to an epistemically *ir*rational appraisal of threat, and therefore out of proportion to the objective level of the worried about event's threat. But the agent in this case would simply be irrational in the sense we described in the last chapter i.e. by virtue of the irrationality of their background beliefs and accepting things as true in their worrying without justification. Further, I also recognise that there may be certain 'Gettier' cases in which we may worry at an intensity that is out of proportion to our epistemically justified appraisal of threat, yet *in* proportion to the objective level of threat posed by what they are worrying about. However, since such cases are so far-fetched, I'll not examine them here.

I propose that the cases of worry that involve the disproportionality I've described involve a unique form of emotional recalcitrance. This is because, when the intensity of our worry is out of proportion to our appraisal of threat, the tension that is characteristic of emotional recalcitrance is present, however rather than between an emotion and our beliefs it is between our worrying and our beliefs. Our anxiety is *too great*, and we thus commit *too much attention* to our worry, given our appraisal of threat - we shouldn't be worrying as intensely as we are in the same way that we shouldn't be afraid of Fido in the way we are in Greenspan's case. Indeed, as Brady (2009) identifies, the fact that recalcitrant emotions seem to involve some kind problematic lack of harmony between our emotions and our beliefs seems indicative of a normative connection between these, such that our emotional responses to the world ought, where possible, to be aligned with our beliefs about the world. Feeling afraid of spiders, for example, seems inappropriate if we believe that spiders aren't something to be afraid of. This is akin to the kind of normative constraint I've suggested is breached in cases of worrying too much, such that the intensity of our worry ought to be in proportion to our appraisal of threat. Worrying about our house being broken into at a high intensity seems inappropriate if our believed likelihood of it happening isn't high enough to warrant such intense worrying, for instance. And, as Brady goes on to suggest, the fact that such a normative connection doesn't hold true in cases of emotional recalcitrance seems to suggest that the emotional agent is irrational: 'we have an intuitive sense that there is something wrong, from the standpoint of rationality, when fear persists in the face of the subject's judgement that she is in little or no danger' (Brady, 2009, p.414). As I'll argue, the same is true of worrying too much.

Naturally, despite the parallels I draw here between cases of worrying too much and cases of emotional recalcitrance, there are some respects in which these phenomena differ. For one, theories of emotional recalcitrance tend to assume that the belief or judgement which is in tension with the emotion is specifically an evaluative one, i.e., the belief or judgement that Fido is *dangerous* or *fearsome*. In the cases of worry being considered here, our worrying is in tension with a function of multiple beliefs i.e., our appraisal of threat, which may include an evaluative belief – our cost belief – but also includes our non-evaluative likelihood belief, as shown. Further, as stated in Chapter One,

worry isn't merely an emotion - rather, it's a form of affectively motivated reasoning on our account. Emotional recalcitrance, on the other hand, is generally understood specifically as a 'raw' emotion that doesn't align with our beliefs or judgements. And further still, the cases of worry we're here concerned with don't occur in tension with our beliefs in terms of a direct conflict in content, but rather as a matter of degrees. As we saw, for example, our friend's worry about their home being broken into is not necessarily problematic merely in terms of *what's being worried about*; given the circumstances, we'd think some degree of worry is appropriate in such a situation. What *is* problematic is the fact that the intensity of their worry is out of proportion to their appraisal of threat posed by such a possibility. So where ordinarily emotional recalcitrant is understood to involve a direct conflict between an emotion's content (Fido is dangerous) and the content of a belief or judgement (Fido is not dangerous), the kind of conflict that occurs in worrying too much is notably less direct.

It's because of these differences that I propose that worrying too much is a *unique* form of emotional recalcitrance. Indeed, this is reflective of the taxonomic distinction we drew in Chapter One between emotions and worry - applying the phenomenon of emotional recalcitrance to worry, rather than emotion, will thus inevitably involve some deviations in its formulation. As stated though, what seems to qualify the cases of worry we've been examining as unique cases of emotional recalcitrance is that the characteristic tension that defines the phenomenon is present. It is simply tension between our worrying and our beliefs, rather than between an emotion and our beliefs.[50] In worrying in such a way, we're doing so in a way that it would seem we shouldn't be, given our appraisal of threat. That is, the intensity of our worrying is *recalcitrant* to our appraisal of threat. I thus believe it's plausible to claim that worrying too much, in a way that involves the kind of disproportionality I've identified, can reasonably be interpreted as a unique form of emotional recalcitrance. Therefore, from hereon I'll refer to cases of worrying 'too much' - worrying about something at an intensity that is out of proportion to our appraisal of how threatening it is - as cases of *recalcitrant worry*.

[50]One might argue that the cases of worry I'm considering do involve 'true' emotional recalcitrance since the anxiety that motivates that worry is too great relative to what we believe. Indeed, this is a claim I'll explore in Chapter Six.

4.2.2 Irrationality Within Recalcitrant Emotion: Brady's View

As stated, it seems there's something irrational about the agent who experiences a recalcitrant emotion. Feeling afraid of flying, despite wholeheartedly believing that flying is safe, would seem to make us irrational in some sense. However, identifying this irrationality is not as straightforward as it may appear, since it's not altogether clear what kind of rational violation occurs in experiencing an emotion that's in tension with what we believe. What kind of irrationality is at stake? Are we practically irrational in experiencing a recalcitrant emotion, or epistemically irrational? What exactly is it about such an experience that we can pinpoint as the locus of that rational failing? A point of debate within the literature on emotional recalcitrance is delineating this irrationality by answering questions such as these. We can appeal to this literature in order to help shed light on the respect in which recalcitrant worries involve irrationality, specifically the account given by Brady (2009).

Brady (2009) claims that we're irrational in experiencing a recalcitrant emotion by virtue of certain features of that emotional experience. As he explains in his account, when in the grip of an emotion, the motivational tendencies of the emotion are such that we become 'primed' to act in ways that correspond with our emotion's evaluative appraisal, and we become 'inclined' to endorse that appraisal through being in a state of sensitivity to environmental stimuli relevant to it.[51] For example, when afraid, our emotional state entails us being primed to engage in 'fight or flight' behaviour, and inclined to endorse the view that we're in danger through being 'on the lookout' for possible features of our environment that may be indicative of threat. Indeed, as we saw earlier, emotions tend to direct our attention towards salient features of our environment that are germane to the content of that emotion. Where our emotional state is recalcitrant, however, this amounts to irrationality for Brady, in both an epistemic and practical sense.

[51]Brady mainly uses the term 'assent', rather than endorse, however in explicating his view it seems he uses these terms interchangeably. I'll use the term 'endorse'.

Given the features of emotion he highlights, Brady claims that recalcitrant emotions make us epistemically irrational because, without good reason, they make us 'inclined' to endorse an emotional appraisal that we've already deemed to be false. That is, in being in a state of heightened sensitivity to environmental stimuli that are relevant to our recalcitrant emotional appraisal, we're essentially looking for features of our environment that confirm that appraisal, thus being inclined towards endorsing - and perhaps believing – an evaluative view that we've deemed to be erroneous or false. Experiencing a recalcitrant fear of flying, for instance, makes us inclined us to endorse the idea that we're in danger, insofar as we're in a state of heightened sensitivity to signs of danger in our environment, and we remained inclined towards such an endorsement despite having already settled the question of whether we're in danger. To be inclined towards endorsing an evaluative appraisal that conflicts with our belief in such a way, for Brady, violates a 'substantive epistemic norm', thus making us epistemically irrational (Brady, 2009, p.427).

Brady says that experiencing a recalcitrant emotion also makes us practically irrational, since it primes us to *act* in accordance with that emotion, again despite having already deemed the evaluative appraisal it gives as erroneous. In the case of recalcitrant fear, for instance, this will mean we're inclined to engage in fight or flight behaviours, i.e., preparing to either flee from, or defend ourselves against, danger. For Brady, this means we're essentially priming ourselves to act in a way that, according to our own beliefs, we shouldn't be, akin to 'preparing for a race that [we see] no need to run' (Brady, 2009, p.427). This may also mean that valuable motivational and cognitive resources are allocated towards unnecessary behaviours, meaning that such resources are not allocated elsewhere towards pursuit of the agent's actual goals. For these reasons, Brady claims that recalcitrant emotions can be understood to involve practical irrationality too. Thus, for Brady, simply experiencing a recalcitrant emotion makes us irrational in both an epistemic and practical sense because, without good reason, we're inclined to act in accordance with, or endorse, an appraisal that we've deemed to be false.

There's a possible argument to be made that the conditions for irrationality Brady posits here are rather weak. As both Helm (2015) and Benbaji (2013) suggest, the claim that there's a rational

violation in being merely inclined towards acting in line with, or endorsing, our emotion's evaluative appraisal in such a way is disputable. It could be argued that being merely inclined towards such irrationality does not imply one is irrational. Moreover, it could be argued that being inclined in such a way and yet refraining from 'giving in' to such an inclination - as Brady allows the emotionally recalcitrant agent does – would make us a candidate for rational praise, rather than criticism. We might very well be exhibiting all-things-considered rationality through resisting such an inclination. When experiencing recalcitrant fear of flying, for example, we might say that we're wholly rational in resisting our inclination to endorse, or act in ways demanded by, our emotional appraisal of danger. Of course, as Brady identifies, to adjust one's beliefs, actually endorse our emotion's evaluative appraisal or act on such inclination would certainly be irrational. But an implicit premise of Brady's argument is that irrationality doesn't hinge on us doing these things. Being merely inclined towards doing so is sufficient for irrationality on his view. And yet one might argue that the irrationality of the actions or endorsements we're inclined towards isn't something we find in that mere inclination towards them.

I'll remain neutral on whether this objection poses any real threat to Brady's view. After all, I'm here concerned with the irrationality of recalcitrant *worry*, not emotion. Regardless, Brady's account is valuable either way since it draws attention to the respect in which recalcitrant worry is irrational. This is because recalcitrant worry entails engagement with reasoning, thereby qualifying as form of mental activity that goes beyond the mere inclinations that Brady identifies. We can thus employ the resources of Brady's account to expose the irrationality of recalcitrant worry in a way that's not threatened by the kind of objections raised by Helm and Benbaji. As I'll argue, when engaged in recalcitrant worry, we go beyond mere inclination towards irrational action, belief or endorsement. We actually *accept* an evaluative view that we shouldn't, and, as we saw in the last chapter, in doing so we're *acting* in a way that we shouldn't. And this makes us irrational.

4.3 The Irrationality of Recalcitrant Worry

Brady (2009) says that recalcitrant emotions involve us being inclined to endorse an evaluative appraisal that doesn't align with our beliefs. On his view, this makes us epistemically irrational. I

propose that, when we engage in recalcitrant worry, we don't merely experience such an inclination to endorse an evaluative view that's inconsistent with our beliefs. By virtue of worrying at the intensity we are, we're actually treating such an evaluative view as true: that is, we're *treating it as true that what we're worrying about is of a level of threat that warrants us worrying as intensely as we are* – a higher level of threat than we actually believe it poses. This is because, in worrying, we don't merely experience the kind of emotional inclination Brady describes. We're actively engaged in reasoning aimed at determining how to either deal with the worried about event in a practical sense or resolve the uncertainty of it in an epistemic sense. In engaging with this reasoning to the extent we are – i.e. worrying at the intensity we are – we're therefore treating it as true that what we're worrying about poses a level of threat that demands us worrying so intensely. This means we go beyond the kind of inclination that Brady posits. As I'll show, this makes us irrational not in an epistemic sense, but a practical sense.

An analogy can be drawn to illustrate this proposal: suppose you're working on a paper, and you come across a particularly tricky philosophical problem that you need to grapple with in order to proceed your argument. You consequently spend the entire afternoon trying to get your head around it. It's plausible to say that by virtue of you spending the afternoon grappling with the problem, you're treating it as true that the problem is something worth all the time you are spending working it out. That is, it's important enough to warrant the degree to which you are engaged in the activity of solving it. Indeed, a third party would be justified in making such a presumption about you, given your actions. The same, I propose, is true of worry: in worrying about something at a high intensity, we spend a great deal of time engaged with it and a great deal of our attention is committed towards this engagement. By virtue of this, I propose, we're treating it as true that what we're worrying about poses a level of threat that warrants us spending so much time engaged with it, i.e., worrying at the intensity we are.

Now, as we saw in the last chapter, to treat something as true in this way is to take an attitude of acceptance towards it (Bratman, 1992; Cohen, 1992). Thus, by virtue of us worrying at a high intensity, we can say that we're *accepting* that what we're worrying about poses a level of threat that

demands us worrying at that intensity. But given that our worrying is recalcitrant in the cases we're concerned with – that is, at an intensity that is out of proportion to our appraisal of threat – this means we accept this *despite* believing that the level of threat is much lower. So, through worrying in the way we do, we take an attitude of acceptance that's inconsistent with our beliefs i.e., our appraisal of threat. As we saw in the last chapter, there's nothing inherently irrational about this. However, recall that acceptances are subject to requirements of practical rationality, such that a rational acceptance must be supported by either a practical or an epistemic reason. Remember, as we saw in the last chapter, Cohen (1992) states that acceptances are 'voluntary mental acts', meaning that acceptances must be adequately responsive to reasons in order to be rational, in the same way other actions must be.[52] As stated, I propose that when engage in recalcitrant worry, we accept - treat it as true - that what we're worrying about is more threatening than we actually believe it is. But we do so without adequate reasons. This therefore makes us practically irrational.

To illustrate, take the case of our friend we've been considering, who's worrying about the possibility of break-in. By virtue of him committing the amount of attention he is to his worrying, attempting to determine how to deal with such a possibility or resolve the uncertainty of it, he's treating it as true that the possibility of a break-in is threatening enough to warrant such an intense worry. He thus *accepts* this evaluative view. However, he does this despite believing that the possibility of a break-in actually poses a much lower degree of threat, according to his appraisal of threat. I propose that this makes him irrational because the attitude of acceptance he takes in worrying at such an intensity is not adequately supported by reasons: he has *no reason* to treat it as true that the possibility of a break in poses such a high level of threat, more than he believes it does. There are no epistemic reasons for such an acceptance: since we're assuming a background of epistemic rationality, the available epistemic considerations are already informing the background beliefs that form his appraisal of threat, which his acceptance is inconsistent with. This means there are no epistemic considerations that would support or justify that acceptance. And we can plausibly assume there are

[52]See Lehrer (1979), Engel (1998) and Ullman-Margalit and Margalit (1992) for further discussion on this requirement of rationality that acceptances are subject to.

no practical reasons to accept this either - there is nothing in the context of the situation that can be treated as a reason for him to accept this by worrying at such a high intensity. That is, there are no practical considerations that count in favour of him treating the possibility of a break-in as posing more of a threat than he believes it does. Given this absence of justifying reasons, he is therefore practically irrational in worrying as such, in a similar way to how we saw in the last chapter.

So, where Brady (2009) says recalcitrant emotions are irrational since they involve us being inclined towards endorsing an evaluative view that's inconsistent with our beliefs, on my view recalcitrant worries involve us going beyond mere inclination, namely by taking an attitude of acceptance towards an evaluative view that is inconsistent with our beliefs without adequate reason for doing so. Indeed, recall that on Brady's account he says that the agent who experiences a recalcitrant emotion is irrational because, *without good reason*, they are inclined to endorse or act in accordance with an evaluative view that's inconsistent with their beliefs. Brady's account thus also posits a lack of justifying reasons as part of the locus of irrationality in such cases, as we're here arguing is the case with the attitude of acceptance we take in engaging in recalcitrant worry.

On my account, then, we're thus irrational in a specifically *practical* sense in engaging with recalcitrant worry – as we saw in the last chapter, taking an attitude of acceptance without good reason entails a form of practical irrationality. This claim is supported further by Brady's (2009) views on what makes recalcitrant emotions practically irrational, which also highlights a possible further form of irrationality in recalcitrant worry. Remember, Brady claimed that recalcitrant emotions involve us priming ourselves to act in accordance with our emotion's evaluative appraisal, 'preparing for a race that we see no need to run'. Nowhere, I propose, is this analogy more applicable than in the cases of recalcitrant worry we're here considering. In Chapter One, we saw that worrying will often include practical reasoning, aimed at determining how to deal with what we're worrying about in a practical sense, i.e. avoid, or prepare for it. In worrying recalcitrantly, we're treating what we're worrying about as being more threatening than we believe it is, meaning we're *accepting* this evaluative appraisal. This acceptance, as we saw in the last chapter, will therefore be an attitude that is at play within the reasoning involved in our worrying. So, if our worrying is constituted by practical

reasoning, we may thus very well end up forming intentions to act in ways that we ought not according to our beliefs. In other words, in being engaged with recalcitrant worry, we may essentially be working out how to act in ways that, according to our beliefs, we needn't be, which would seem to be irrational. Brady's analogy of 'preparing for a race that we see no need to run' captures such cases nicely.

For example, our friend, in engaging in recalcitrant worry about a break-in, may form the intention to spend thousands of pounds on a new home security system through the practical reasoning he's engaged with. This is so because in worrying he's treating it as true that such a possibility poses a level of threat that might demand such action. And yet according to what he believes about such a possibility, i.e. his appraisal of threat, this is a course of action he doesn't need to pursue. He doesn't actually believe the possibility of a break in poses a level of threat that requires him to do this. Thus, this is a further respect in which recalcitrant worry may involve practical irrationality: the practical reasoning we may be engaged with in worrying may involve us forming intentions or beliefs that, by our own lights, we shouldn't be forming.

Of course, as per our characterization of worry, not all cases of worry involve practical reasoning. Some, like the case of the mother worrying about her son fighting in a foreign war we saw in Chapter One, will involve strictly epistemic reasoning. Yet, in cases where our worrying is recalcitrant, there is still a form of practical irrationality at stake. In committing a great deal of our attention to engaging with the epistemic reasoning in worrying, attempting to resolve the uncertainty of what we're worrying about, as described above we're still treating it as true that what we're worrying about is of a level of threat that demands such a high intensity of worry. Where our worrying is recalcitrant, we do this despite believing that the worried about event poses a lower degree of threat. And as I've argued, taking such an attitude of acceptance in worrying is irrational since it isn't adequately justified by reasons. So, whether our worrying involves or epistemic or practical reasoning, it is irrational when it is recalcitrant in the way I've here shown.

As I claimed about the account given in the last chapter, what makes this account particularly plausible is that is remains in touch with our intuition that there is something irrational about what

we're *doing* when we worry too much. We get the sense that when we're worrying 'too much' it is not necessarily what we believe that makes us irrational, but rather what we're actually up to in worrying as intensely as we are. When we accuse someone of worrying 'too much', the normative implications of this accusation imply that some degree of worry would be appropriate given the circumstances, however the worrier is engaged with that worry at an intensity that is too great, or as Broad (1954) might say, to a degree that is 'inordinate'. There's thus something irrational about *how much* they are worrying. The root of the irrationality at stake is thus nothing to do with the with the worrier's background beliefs in these cases, but rather it's the actual activity of worrying that they are engaged in that's problematic. The account we've given accommodates this intuition. Namely, it shows that the failure of rationality at stake in such cases is a purely practical one, as we've seen. Thus, as per our intuition as described, it's not what the recalcitrant worrier *believes* that makes them irrational – or even what they are inclined to believe, as Brady might suggest – but rather what they are *doing* when worrying that makes them irrational.

4.3.2 Comparisons With Ill-informed Worry

On the account given above then, recalcitrant worry is irrational because it entails us accepting - treating as true - an evaluative view in a way that isn't adequately supported by reasons. And as we saw in the previous chapter (see section 3.2.2), since acceptances are something we do, a rational requirement on acceptances is that we must have a reason for them. This is something we're missing when we engage in recalcitrant worry, or when we worry *too much*. We have no reason to treat it as true that what we're worrying about poses a level of threat that demands us worrying as intensely as we are. As may be evident, the form of irrationality described here is notably similar to the form of irrationality described in the last chapter, i.e. ill-informed worry. That is, in both forms of irrational worry, the locus of irrationality is an acceptance that is not adequately justified by reasons. In the interests of clarity, it's important to note the differences between these.

In the last chapter we argued that when a worry is informed by one or more epistemically irrational background beliefs, the reasoning that is involved in our worrying will therefore involve an

acceptance that's not supported by reasons. As we saw, in cases like this, where we worry in a way that's informed by an epistemically irrational background belief, we're irrational because our worrying involves us taking an attitude of acceptance towards a proposition that we don't have adequate reason to. This is because one of the beliefs that informs our worrying in such cases is irrational i.e., not responsive to the available evidence. Consequently, there will be a corresponding acceptance at play within the worrying this belief informs that we have no good practical or epistemic reasons for. This makes us irrational in taking such an attitude. So, in cases of ill-informed worry, it's because our background beliefs are unresponsive to the available evidence – that they are epistemically irrational - that the kind of irrationality of an unjustified acceptance emerges in our worrying.

Take, for instance, the case we saw in the last chapter of our friend who is worrying about the best man's speech, given his belief that messing the speech up will ruin the day. We said that worrying in such a way is irrational because this background 'cost' belief is epistemically irrational. This means that engaging with the worry that's informed by this belief he will *accept* this as true - he will treat it as true that if he messes the speech up, the wedding day will be ruined. We argued that this acceptance is irrational because it's not adequately supported by reasons. We already know he has no epistemic reasons for treating this as true, since the background cost belief that informs his worrying is unresponsive to the available evidence, and so the corresponding acceptance within his worrying will also be unresponsive in the same way. And, all things being equal, there are no adequate practical reasons he has for treating it as true that if he messes the speech up, then the wedding day will be ruined either. There are no practical considerations within the context of his worrying that can be treated as a reason for accepting this. This thereby means that through taking such an attitude of acceptance, as part of his worrying, our friend is irrational.

Turning our attention back to recalcitrant worries now, I've argued that such cases are irrational because they also involve us taking an attitude of acceptance without adequate reasons. However, this is explained in a different way to cases of ill-informed worry. When we worry recalcitrantly, by virtue of the amount of attention we commit to the reasoning involved in our

worrying, we're treating it as true – accepting - that what we're worrying about poses a level of threat that warrants us worrying at that intensity. Here we're taking an attitude of acceptance by virtue of the activity of worrying we're engaged in. However, we take this attitude despite believing that what we're worrying about is not as threatening as the intensity of our worrying suggests. And again, we have no epistemic or practical reasons for accepting this, making us irrational, however this can be explained in a different way to cases of ill-informed worry. We have no epistemic reasons for such an acceptance since the available epistemic considerations are already informing our appraisal of threat (since we're assuming a background of epistemic rationality), which our acceptance does not align with. There are thus no epistemic reasons for such an acceptance. And we have no practical reasons either; there is nothing to gain, in a practical sense, from treating it as true that what we're worrying about poses a higher level of threat than we believe it does. So, where cases of ill-informed worry involve an irrational acceptance because our worrying is informed by an irrational belief, cases of recalcitrant worry involve an irrational acceptance because our worrying is of an intensity that does not align with our rational beliefs. In other words, the irrationality of ill-informed worry has its roots in what we believe, whereas the irrationality of recalcitrant worry has its roots in how we're worrying *relative* to what we believe.

Notably, it could be argued that both forms of irrational worry involve the worrier treating the worried about event as more threatening than they should. I'm happy to yield this. But the key difference between these cases is what explains this kind of irrationality. As stated, in cases of ill-informed worry this is because our worrying is informed by beliefs that are *not* rational to have, whereas in cases of recalcitrant worry this is because our worrying isn't appropriately responsive to (that is, out of proportion to) beliefs that *are* rational to have. The distinction between ill-informed worry and recalcitrant worry should thus now be clear.

This therefore reveals a further requirement of rationality that worry is subject to. Not only must rational worry be informed by epistemically rational cost, likelihood and uncertainty beliefs, as we saw in the last chapter, but it must also be of an intensity that is in proportion to those beliefs. We can thus understand this further requirement as follows:

> *When worrying about p, the intensity of that worry must be in proportion to our appraisal of the level of threat posed by p.*[53]

Thus, the irrationality we've identified emerges on account of the fact that in worrying 'too much', we treat what we're worrying about as posing more of a threat than we believe it to be. This involves taking an attitude of acceptance towards an evaluative view that's inconsistent with our beliefs without adequate reasons for doing so; it's this absence of reasons that is thus the locus of irrationality when we worry in such a way. Thus, as stated earlier, I propose that what gives the common-sense notion of 'worrying too much' its normative force is that worrying too much is irrational in the way I've identified. Thus, I propose that the demand to be rational is what establishes the normative connection between our appraisal of threat and the intensity of our worry, the very connection we refer to when we accuse someone of worrying 'too much'.

It's worth noting that this will often be a rational requirement that is hard to satisfy. This is because, as we stated earlier, the characteristic uncertainty involved in worrying will often make it difficult to form accurate appraisals about the likelihood or cost of the worried about event when worrying. The mother who worries about her son who is fighting in a foreign war, for instance, will struggle to accurately assign a likelihood to the possibility of her son's injury or death, meaning she may not be able to form any accurate appraisal of threat about such a possibility in the way I've described. This would thereby make it difficult to even have an awareness of what an appropriate intensity of worry would even be. Thus, it could be argued that in cases where uncertainty is high, the requirement of rationality I've here identified is particularly difficult to adhere to.

However, I think we should be charitable about such cases, and expect that even when the relevant details about the cost and likelihood of the worried about event are uncertain, worriers will by and large worry at an appropriate intensity. This is because we can still expect people to form epistemically rational appraisals of threat in such cases. That is, even if uncertainty makes it hard to form accurate beliefs, we can still maintain epistemic rationality and develop these beliefs in a

[53]Notice that unlike the requirement of rationality we identified in our account of ill-informed worry, this requirement *is* unique to worry, since it taps into the distinctive character of worry as we've described it.

rational way with the epistemic considerations we *do* have available. The mother, for instance, will be aware that the likelihood of her son being injured will be higher or lower depending on where he is stationed and what rank he is. So, even in the face of uncertainty, we can still expect worriers to form rational cost and likelihood beliefs, and thus worry at a proportionate intensity.

4.4 Possible Objections

One objection that may be raised against my account is as follows: in many cases of recalcitrant worry, we can, in fact, identify a practical reason for accepting – treating it as true – that what we're worrying is more threatening than we believe it to be. Perhaps doing so is an effective way of 'playing it safe'. That is, perhaps our friend might have a practical reason for accepting that the possibility of a break-in poses a greater threat than they believe, and so for worrying at a higher intensity than they 'should', because in doing so they are playing it safe. Sometimes it's judicious to be cautious. In accepting this, by worrying at a high intensity, perhaps our friend radically reduces the uncertainty of such a possibility (epistemic worry) and determines precisely how to deal with it (practical worry), in a way that perhaps wouldn't be possible had they simply worried in a way that is in proportion to their appraisal of threat. So, as the objection goes, perhaps a practical reason for such an acceptance can thus be found.

In response: no genuine justifying reason for the acceptance, or thereby for worrying, is identified here. This is because by 'playing it safe' our friend is simply double counting the level of threat they believe the possibility of a break-in poses. If they think such a possibility is high enough to warrant a 'play it safe' strategy, they have appraised the threat to be high. Their worry should then be a response to this serious threat. However, note that their appraisal of the level of threat has already been made in response to all available epistemic considerations. To then use 'playing it safe' as a reason to elevate the intensity of their worry further would be to reappraise the threat, or to double count their calculation of threat. And this would mean their appraisal of threat is no longer epistemically rational. Thus, in 'playing it safe' by worrying at a high intensity, one might claim they are at rational fault not by virtue of their worry being recalcitrant – they are worrying as they should, given their belief that what they are worrying about poses a level of threat that demands they play it

safe – but rather by virtue of their double counting of their threat appraisal, which amounts to epistemic irrationality.

Here the objector might in turn respond that there is no such double counting. Rather, playing it safe is simply the reason to *treat it as true*, i.e., accept, that what they are worrying about poses a level of threat that is greater than they believe. This would mean the worrier would be worrying recalcitrantly, and not double counting as the above response suggests. However, while this response is possible, it comes at a cost. If it's allowed that it can be rational to play it safe by accepting things in this way, we'd thereby have to allow that there's little or no rational constraint on treating something as more threatening than believed. That is, it would thereby always be rationally permissible to treat it as true that some possible danger poses more of a threat to us than we believe it does, provided that doing so allows us to 'play it safe'. This doesn't seem accurate. We would, for instance, be rationally justified in treating it as true that driving will certainly result in a car crash by never travelling by car, even though we believe car travel is rarely dangerous, since doing so allows us to remain as safe as possible with respect to such a possibility. Of course, we're 'playing it safe' by doing this – but this doesn't seem to be rationally appropriate, meaning analogous cases of worry in which we worry recalcitrantly to play it safe are presumably not rationally appropriate either.

Further still, recall that Brady (2009) suggests that recalcitrant emotion involves practical irrationality on account of involving a 'waste' of cognitive resources that could – and should – be put to better use elsewhere i.e., in pursuit of the agent's other goals. This is certainly the case with worrying recalcitrantly. In worrying at an intensity that's out of proportion to our appraisal of threat, treating it as true that what we're worrying about poses a level of threat that demands us worrying in such a way, we're thereby committing cognitive resources to reasoning that we don't need to be engaged with to such a degree, according to our beliefs. Our worrying may distract us from more pressing concerns, for instance. By our own lights, we're thereby wasting valuable cognitive resources, which as Brady suggests points towards a form of practical irrationality. Thus, for this reason, and the one outlined before it, I don't think the 'playing it safe' objection poses much of a

threat to the account I've offered. The worrier thus doesn't have a genuine reason for treating it as true that what they are worrying about is more threatening than they believe.

There is another possible issue that may be raised in response to my account. One might argue that we've not sufficiently exposed the 'whole' irrationality of recalcitrant worry because we've only addressed the irrationality of one dimension of it, namely the cognitive engagement with the reasoning that constitutes it. Whilst we've shown what's irrational about this cognitive engagement, it could be argued that we've not fully accounted for the irrationality at stake because we've not shown what is irrational about the *affective* dimension of our worry. That is, we've not provided an account of what's irrational about the *motivating anxiety* that's of an intensity out of proportion to our beliefs.

Whilst it may very well be true that our anxiety itself can be irrational in isolation from the kind of epistemic and practical axes of rational evaluation we're working along, I'm purposely not going to broach this issue here. This is because such a discussion would most likely boil down to a discussion about the rationality and normativity of values. What will very well make my anxiety about something irrational, independent of its epistemic or practical rational status, is the values of mine on which my anxiety is based. And, as stated in the last chapter, the rationality of the worrier's evaluative framework is a line of enquiry that I don't have space to discuss in this thesis (see Chapter Three, section 3.2.2-3.2.3). As such, I want to avoid discussion about the rational status of our affective state of anxiety, keeping the focus, as I've been, rather on the cognitive dimension of worry, the engagement with reasoning that this involves, and the irrationality that may manifest there.[54]

Conclusion

In this chapter I've identified a second requirement of rationality that worry is subject to: *when worrying about p, the intensity of that worry must be in proportion to our appraisal of the level of threat posed by p.* I've showed that when worry fails to satisfy that requirement, the worrier is practically irrational since their worrying involves accepting – treating as true - an evaluative view

[54]See De Sousa (1987) for a widely celebrated account of the ways in which emotions can be rational and irrational.

that they have no reason to. This is irrational. I've also showed how, despite also involving a form of irrationality that involves accepting something without adequate reasons, the irrationality identified here is of a different form to the kind of irrationality that manifests within ill-informed worry. As stated, in cases of ill-informed worry, the worrier is irrational because their worrying is informed by epistemically irrational beliefs held by the worrier. In cases of recalcitrant worry, on the other hand, the worrier has perfectly rational background beliefs, however they worry at an intensity that's out of proportion to those beliefs. The account given in this chapter thereby furthers the project of delineating the boundaries of rationality in worry.

So far, we've simply assumed that the cases of irrational worry we've considered are realistic, given that we can imagine plausibly scenarios to illustrate them. What we've not yet considered are the factors that might cause these cases of irrational worry to arise, or what exactly might cause us to worry in these irrational ways. That is, we've not yet seen how we might come to worry in a way that is informed by epistemically irrational background beliefs (ill-informed worry), or in a way that is out of proportion to epistemically rational background beliefs (recalcitrant worry). This will be the focus of the next chapter, where I'll explore further the nature of worrying itself and the sub-personal mechanisms that might be involved in the forms of irrational worry I've identified.

Chapter 5: What Causes Irrational Worry?

Over the past two chapters I've given accounts of two forms of irrational worry. One, 'ill-informed worry' is where our worrying is informed by epistemically irrational beliefs, thereby rendering our worrying itself irrational. The other, 'recalcitrant worry', is where our worrying about some future possibility is disproportionately intense, given our appraisal of how threatening that possibility is. These accounts both revealed respective requirements of rationality that worry is subject to. Some natural questions that come to mind when considering these forms of irrational worry are as follows: under what circumstances do ill-informed or recalcitrant worries arise? What causes us to worry irrationally in these ways? In this chapter I'll explore questions like these, furthering both our understanding of the nature of worry itself as well as the conditions under which worry is rational and irrational.

It's beyond the scope of this chapter – and indeed this thesis - to provide an exhaustive account of all the ways we might come to worry irrationally in the ways I've identified so far. Nevertheless, I here want to explore some of the most prominent ways that these forms of irrational worry might occur through the operation of mechanisms internal to worry itself. I'll thus provide accounts of two familiar and relatable phenomena that involve those forms of irrational worry occurring through the operation of such mechanisms. More precisely, the phenomena I'll describe implicate our use of the *imagination* whilst worrying as a mechanism that can often generate such irrationality.

The chapter will largely involve giving descriptive accounts of these phenomena, supported by relevant psychological literature on worry and the emotions more generally. It will go as follows. I'll first give a recap of the roles the imagination plays in worrying as we saw in Chapter One, going into more detail about how these roles are served (see section 1.2.3). This is relevant since, as stated, the imagination is the component of worry that's implicated within the phenomena I'll identify. With this in place, I'll then proceed to provide accounts of those phenomena. The first of these, which I'll label 'belief distortion', is where the operation of the imagination in worry influences our *doxastic*

state by causing certain cognitive heuristics and biases to negatively influence the rational status of our background beliefs. This means our worrying becomes *ill-informed*. The phenomenon of belief distortion as I'll describe it should accurately capture how many familiar cases of ill-informed worry come about. With this established, I'll then turn my attention to the second phenomenon I wish to identify, which I'll label 'feedback loops'. This is where the imaginative engagement involved in worrying influences our *affective* state such that the intensity of our worry grows out of proportion to our appraisal of threat, a disproportionality that is then maintained through our ensuing worry. This means our worry becomes irrational by virtue of being *recalcitrant*. Again, the phenomenon described should capture how many familiar cases of recalcitrant worry come about. Finally, with accounts of these two phenomena in place, I'll then draw attention to cases that may involve both belief distortion *and* feedback loops, meaning one form of irrationality is 'converted' into the other. This will show how a single case of worry can be irrational in more than one respect.

Where the previous chapters have shed light on some requirements of rationality that worry is subject to, this chapter will provide further explanatory context for these accounts - and our understanding of the nature of worry itself - by shedding light on some notable and familiar ways in which such irrationality can occur. As stated, presumably there are a multitude of reasons for why we may find ourselves worrying irrationally – an exhaustive account of all such causes would be near impossible to produce. What I'm interested in here is shedding light on how irrationality can emerge through some of the central mechanisms intrinsic to worrying itself, centring in particular around the imaginative engagement that worrying often involves.

5.1 The Imagination In Worry: A Recap

The claim that the imagination is involved in worrying is intuitive. Imaginative content is generally front and centre within the phenomenological experience of worry. I offered an explanation for why this is in Chapter One, where I suggested that the imagination plays a key role in worrying insofar as it is essential to the forms of reasoning that constitute it (see section 1.2.3). I'll start by giving a recap

of these claims, given the centrality of the imagination within the phenomena I'll be discussing in this chapter.

On my account, when we worry about some future threat, we're either engaged with practical reasoning, aimed at determining how to 'deal' with that threat - i.e., avoid or prepare for it - or epistemic reasoning, aimed at reducing the uncertainty of it. Both forms of reasoning typically involve the use of the imagination. On the one hand, engaging in practical reasoning involves using the imagination simply because imagining potential courses of action, and the circumstances surrounding these courses of action, is an integral part of determining how we should act (Williamson, 2016; Spaulding, 2016). For instance, to give Spaulding's example, deliberating about how to manoeuvre a sofa through a doorway will necessitate imagining the various ways you might do so beforehand. Or, working out how to avoid bumping into someone at a social gathering will involve imagining yourself manoeuvring through the crowd. In other words, we need to imagine scenarios in order to effectively work out how to act in them.[55] And, as we've seen, worrying is often constituted by practical reasoning. This gives a partial explanation for the role of the imagination in worry: it's an essential component of the practical reasoning we engage with when worrying. Worrying about a job interview going badly, for example, will likely involve you imagining yourself sat in front of your interviewers, or imaginatively pre-empting possible negative scenarios that might play out. The imagination is here being utilised to help you determine what to do in in these situations, or how to prepare for them, thus in principle avoiding the job interview going badly and thereby allowing for your worry's practical function to be served.[56]

I also stated that the imagination plays a role in the epistemic reasoning that can constitute worry too, a claim adopted from Vazard's (2022) account of anxiety. This is because, when engaged in this epistemic reasoning, we'll typically form imaginative representations of the worried-about state

[55]Similarly, it could also be argued that appealing to rational choice theory also highlights how essential the imagination is in working out how to act: if the most rational choice is the course of action with the highest utility, then working out what the rational choice is in a situation will necessitate the imagination since utility calculations are made by working out the subject values of different possible outcomes, a calculation for which the imagination is essential.

[56]I use the qualifier 'in principle' here to reflect how this practical function will not *necessarily* be served – we can only *attempt* to determine how to avoid the talk going badly.

of affairs in order to assess its plausibility, or imaginatively anticipate various ways the threat might occur in order to assess its likelihood. We use the imagination in these ways in an attempt to improve our epistemic perspective of how likely and plausible the worried about state of affairs is, thereby reducing the uncertainty surrounding it as per worry's epistemic function. The mother worrying about her son who is fighting in a foreign war, for instance, will likely imagine him in various situations on the battlefield as she tries to determine the likelihood and plausibility of his injury or death, in an attempt to reduce the subjective uncertainty surrounding these possibilities. Or she may use the imagination to determine details about his situation that are relevant to her likelihood estimates. Like practical reasoning, then, the imagination is thus utilised as part of epistemic reasoning in worry too.

As we can see, the imagination plays essential roles in the effective functioning of both the forms of reasoning involved in worry. The presence of imaginative activity in worry can thus be explained in terms of these roles. Notably, however, it makes sense to suggest that part of the serving of such roles will involve *changing how we think* about the threat we're worrying about. That is, when using the imagination within the practical or epistemic reasoning involved in worry, we may find that we must adjust our appraisal of threat posed by the worried-about state of affairs accordingly, since the imagination may yield important epistemic considerations that bear on our beliefs about how likely or costly that state of affairs is i.e., the beliefs that form our appraisal of threat (see Chapter 4, section 4.1.2). As Williamson (2016) states, the imagination is the faculty of mind that allows us to 'raise possibilities' in our day to day lives, and this accurately describes the kind of role that it plays within the practical and epistemic reasoning we're engaged in when worrying. That is, when we worry, we use the imagination to *raise possibilities* about the threat that are relevant to the reasoning we're engaged in. And these imagined possibilities may have a bearing on our background beliefs about the worried about state of affairs, since they may reveal to us, or remind us of, considerations that we ought to factor into those beliefs. This is obviously the case when it comes to the epistemic reasoning that worry may involve. In such cases we're using the imagination as part of our reasoning precisely in order to improve our epistemic perspective on the threat i.e., improve the accuracy of our beliefs about it. Yet this may also be the case when we use the imagination as part of the practical

reasoning in worry too. In determining how to act in order to deal with the threat, we'll also have to raise certain possibilities and considerations that may cause us to change our background beliefs about that threat in the same way.

For example, suppose that you're worrying about the possibility of an important upcoming conference talk not going well, and in doing so you're trying to determine how likely it is this will happen, how to avoid this occurring or what to do if it does. Your worrying thus involves engagement with both epistemic and practical reasoning. In engaging with this epistemic reasoning, you may imaginatively 'raise' various possibilities about how it might go wrong. For instance, you may imagine members of the audience showing visible signs of perplexity, suggesting your arguments are not being received well. Or you may imagine yourself muddling your words, or drawing a blank on a key section of the presentation. In doing so, you're imaginatively raising these possibilities in an attempt to assess the likelihood and plausibility the possibility of the talk going badly, thereby reducing the uncertainty surrounding it. You may also engage in practical reasoning in an attempt to determine how to act in order to avoid these possibilities, or what to do if they were to occur, imaginatively pre-empting further possibilities such as what the consequences of you acting in these ways would be. These considerations may factor into the utility calculations you make when determining which courses of action would be optimal as part of your practical reasoning.

What's notable is that as part of both the practical and epistemic reasoning involved in your worrying, when you imaginatively pre-empt these various possibilities the background beliefs that inform your worrying may be adjusted in light of them. Through worrying in such a way, your imagination may reveal that it is, in fact, more likely that the talk will go wrong than you originally thought, perhaps if it was to raise possible reasons for why this might happen that you hadn't considered previously - a possible question you might be asked that's outside your area of competence, perhaps. Or, in the same manner, your belief about how *costly* it would be may be influenced, since the imagination may reveal possible consequences of the talk going badly. You may come to think that your reputation as an academic may be tarnished if you mess the talk up, thereby causing you to treat the possibility as being much more costly than you previously considered it to.

Indeed, this may work in the other direction too: the imagination may reveal certain considerations that make your appraisal of threat *lower* in the same way. Thus, when serving the kind of roles it does in our worrying as I first described in Chapter One, the imagination may very well yield epistemic considerations that allow us to tune and adjust our beliefs about the worried about state of affairs, and thus our appraisal of the level of threat it poses. Indeed, all things being equal, this will ideally make your appraisal more accurate, so long as the imaginative content that you take into account is sensitive to available evidence.[57] Through raising possibilities in this way, the imagination can thus be understood to often serve a positive epistemic role in these respects, whether it be a part of the practical or epistemic reasoning involved in worrying, since it may improve the accuracy of our appraisal of threat by raising certain considerations relevant to the beliefs that form it.

As we can see then, the imagination plays an important role in worrying. It's an essential part of both the constitutive practical and epistemic reasoning by which worry's functions are served, and when assuming these roles it may help to improve the accuracy of our appraisal of threat. However, I propose that there are plausible cases where the role it assumes can *negatively* influence the rational status of our worry. This is due to some of the effects our imaginative engagement can have on us when assuming the kinds of roles described. One of these effects is doxastic, and the other is affective. Such cases are captured by the phenomena I'll now go on to discuss.

5.2 Belief Distortion

As we've seen, when we worry we raises possibilities about the worried-about state of affairs via the imagination. Often this can serve a valuable epistemic role since it may allow us to tune and adjust

[57]One might point out the following about these cases: if the imagination were to 'reveal' considerations that were sensitive to the available evidence, thereby causing us to adjust our beliefs accordingly, then the worrier must have been epistemically irrational prior to this, since their beliefs, pre-adjustment, can't have been sensitive to the available evidence. That is, their imagination revealed epistemic considerations that their background beliefs had previously not been sensitive to. But this simply proves further the kind of positive epistemic role the imagination can serve in worry; it can improve our general epistemic situation with respect to the threat by improving the accuracy of our beliefs in this way. It could also be argued that the agent is, in fact, epistemically rational since they are clearly 'in the process' of improving their epistemic situation, which I think vindicates them from accusations of irrationality.

our appraisal of threat. But this can't be assumed of all cases. I now want to consider cases of worry where our appraisal of threat is influenced by the imagination in way that *isn't* epistemically rational, leading to our worry becoming ill-informed. More precisely, I propose that raising possibilities via the imagination may lead us to develop irrational background beliefs, meaning our worry thereby violates the rational requirement that *when worrying about p, our worrying must be informed by rational beliefs about p*. This, I'll argue, is because the use of the imagination in worry may have a *distorting* influence on our those beliefs.

We thus need to distinguish cases where the imagination in worry plays a positive epistemic role from cases where it distorts our beliefs. Although presumably our imaginative engagement in worry will by and large lead to an improved epistemic perspective as described, I propose that belief distortion can occur in some cases because this engagement can cause us to employ certain cognitive biases and heuristics within our belief formation. This can mean we may neglect to consider important epistemic considerations and thus develop background beliefs about the worried about state of affairs that are epistemically sub-par. More precisely, I propose that this is because the role the imagination plays in worry may initiate *availability bias*.

Availability bias is a cognitive heuristic first identified by Tversky and Kahneman (1973), described as where 'a person judges the frequency of classes or the probability of events by the ease with which relevant instances come to mind'. That is, it involves forming beliefs about the probability of certain events merely on the basis on how available or present to mind certain reasons and considerations in favour of it are. They illustrate this in the following way:

> […]one may assess the divorce rate in a given community by recalling divorces among one's acquaintances; one may evaluate the probability that a politician will lose an election by considering various ways in which he may lose support; and one may estimate the probability that a violent person will 'see' beasts of prey in a Rorschach card by assessing the strength of association between violence and beasts of prey. In all these cases, the estimation of the frequency of a class or the probability of an event is mediated by an assessment of availability. (Tversky and Kahneman, 1973, p.208)

Take the first example: you may plausibly believe that divorce is more common than it really is if three out of the six married couples you know have ended up divorced. The concept of availability

bias thus picks out the way we often form beliefs - generally about likelihood – about an event based on how available to mind certain considerations are that support or undermine that event's plausibility. But this can lead to epistemically irrational beliefs. When we form beliefs in this way, we may not be doing so through reasoning on justified beliefs and evidence. That is, forming beliefs in a way that involves availability bias may mean neglecting to consider important epistemic considerations that ought to be taken into account. Consequently, the beliefs that are formed may very well be epistemically irrational, involving 'severe and systematic errors' (Tversky and Kahneman, 1974, p.1124).

There is psychological literature that suggests availability bias is often used in worrying, leading to an over-estimation of the likelihood of threats (Raune et al, 2005; Brown et al, 2002; Macleod et al, 1991). For instance, both Brown et al. and Macleod et al. found that often worriers can develop erroneous beliefs about the likelihood of a worried about event because of a tendency to identify more reasons for why it would happen than why it wouldn't whilst worrying. With more of these reasons available to mind, the worrier may thus come to believe that the worried about event is more likely than it is. This may cause them to have an epistemic irrational likelihood belief, which as we saw in Chapter Three may influence the rational status of their worry itself (see section 3.2.2). But what explains the tendency to use availability bias in worry? The literature is rather vague on this question, simply showing that the bias is often present rather than explaining why. Considering the nature of worry as we've described it, my proposal is as follows: it is because of the utilization of the imagination in worry, and the way in which our attention is directed towards imaginative content, that the availability bias can distort our beliefs when worrying, in a way that leads to epistemic irrationality. Indeed, Nanay (2016) claims that availability bias is simply a bias in imaginability; that is, a bias towards *imagining* certain things and not others.

We can give two reasons in support of this proposal. The first is that when worrying we'll likely use our imagination to bring more reasons to mind for why the worried about event *will* occur, than why it *won't* occur, precisely because such reasons are more relevant to the functional role our worry assumes. We've seen that worrying involves either determining how to deal with threats (i.e.,

avoid or prepare for them) in a practical sense, or reduce the uncertainty of threats in an epistemic sense. In doing so we utilize the imagination by raising relevant possibilities about those threats. It thus makes sense to suggest that the imagination will predominantly yield reasons *in favour* of the threat occurring, such as possible ways it might occur or what might cause it to occur, precisely because these are the reasons that we need to consider and pre-empt when determining how to deal with it or reduce the uncertainty surrounding it. For example: if, when worrying about your upcoming conference talk going badly you're attempting to determine how to prevent this occurring, you'll need to anticipate the various possibilities that might cause this in order to deal with them appropriately. And to do this you must utilize the imagination to bring to mind precisely the reasons *in favour* of the talk going badly - in a practical sense at least, you have no real need to consider reasons why the talk will go well. As stated, you'll thus likely imagine scenarios such as messing your words up, drawing a blank etc.; these are the considerations you need to pre-empt through worrying because these are the possibilities you need to work out how to prevent in order to avoid the talk going badly. The same will be true if your worrying involves purely epistemic reasoning; you'll most likely bring to mind reasons in favour of the worried about state of affairs occurring since these are the considerations you must consider when attempting to reduce the uncertainty surrounding it. That is, it's necessary to bring to mind the possible reasons for why the threat might occur, and what may cause it to occur, in order to get a clearer sense of how plausible the threat really is, thereby reducing its uncertainty through gaining an improved epistemic perspective on it.

Consequently, when worrying your imagination will presumably bring to mind more reasons for why the possible threat *will* occur than why it *won't* occur, as stated. And this may thereby lead to availability bias coming into play within your worrying, as the psychological literature cited above states can often be the case (Raune et al, 2005; Brown et al, 2002; Macleod et al, 1991). With more reasons that point towards the talk going badly available to mind, you may thereby come to believe that the likelihood of this is greater than it really is through availability bias. This will likely mean your likelihood belief is unresponsive to the epistemic considerations it ought to be, formed merely on the basis of the availability of reasons in favour of the worried about event occurring. And this makes

such a belief epistemically irrational, which renders the worrying this belief informs irrational too, as we saw in Chapter Three (see section 3.3). Thus, the use of the imagination in worry may lead to our background beliefs become *distorted* in an irrational way, rendering our worry *ill-informed*. Indeed, it seems intuitive that when worrying we often focus more on the reasons for why bad things will happen in this way, rather than taking stock of the full pool of evidence available. The above considerations provide a plausible explanation for this tendency to focus on such reasons, showing how it may distort our beliefs in a way that leads to irrationality.

The second reason why the imagination in worry may lead to belief distortion via availability bias is the following: in worrying about something, and thus imagining it, what might lead to it occurring, or possible negative consequences it may have, the imaginative content of your worries will likely be highly salient, given its likely negative and distressing nature. This means it will typically elicit an affective response in you.[58] Given this affective response, your attention will thus be drawn towards this imaginative content, since, as we've seen in earlier chapters, the anxiety that's elicited in worry has a significant influence on attention, as is characteristic of emotions more generally (Mitchell, 2023; Brady 2013; 2009; LeDoux, 1996; De Sousa, 1987).[59] That is, emotions draw our attention towards emotion-relevant objects and mental contents. So, when utilizing the imagination in worry, your cognitive attention will likely be focused on this imaginative content and the negative possibilities being raised by the imagination. Indeed, as Tallis and Eysenck claim in their psychological account of worry, 'arousal [in worry] will increase the narrowness of attention, making negative information more salient' (Tallis and Eysenck, 1994, p.46).

What this means, then, is that presumably reasons *in support* of the worried about state of affairs are more front and centre to your cognitive attention than reasons *against* it occurring - such supportive reasons are found precisely within the salient imaginative content that your attention is focused on when you worry, e.g. what might cause the worried about event to occur. And, in focusing your attention on these negative possibilities, you may now be neglecting to consider the full range of

[58]I talk about this affective influence in more detail in section 5.3 – for now, I'll simply take it for granted.
[59]Again, I go into more detail about this influence on our attention in section 5.3.

epistemic considerations available. Indeed, this may include strong reasons for why the threat *won't* occur. This causes availability bias to come into play, distorting your belief about the likelihood of the threat. And consequently, your background likelihood belief is no longer adequately responsive to the available evidence, i.e. it is epistemically irrational. As a consequence, your worrying is *ill-informed*. This would be a direct consequence of the salience of the content raised by the imagination as part of your worry.[60] This is reflective of the tendency we often have when worrying to focus mainly on the reasons in support of what we're worrying about. Similar claims to this are made by Brady - speaking about the emotions more broadly, he recognises that often negative emotions can distort our epistemic perspective through the influence it can have on our attention, causing us to, in his words, 'fail to see the big picture' (Brady, 2013, p.169). This is essentially what I am proposing can often happen when we worry.

We thus have two ways in which the imaginative engagement involved in worrying may lead to availability bias within our belief formation, thereby influencing the rational status of our background beliefs and our worrying itself. We've mainly focused on our background *likelihood* belief in particular. But these considerations also apply to our *cost* belief too, since this cost belief will also hinge on assessments of likelihood in important respects; the likelihood of possible consequences of the worried about event may influence how costly we take that state of affairs to be. Indeed, recall that our cost belief has the content *if p, then negative consequence c* (see Chapter Three, section 3.2.2). Thus, if the availability bias is used in assessing the likelihood of these consequences, our cost belief may become epistemically irrational too, in the ways I've just outlined. That is, we may take such consequences to be more likely than we should, and thus the worried about state of affairs to be more costly than we should. For instance, suppose, as suggested, that you believe a bad conference talk would be highly costly precisely because you think a consequence of this is that your academic career would be ruined. Perhaps, through focusing on this possibility whilst worrying, availability bias gives you an inaccurate belief about how likely this consequence is, when it's quite obvious that

[60]See Brady (2013) for valuable discussion on how negative emotions more broadly can distort our epistemic perspective through the influence it can have on our attention, causing us to, in his words, 'fail to see the big picture'.

academia is not this cruel. Thus, you may believe such a consequence is more likely than you should, thereby giving you an erroneously elevated belief about how costly it will be if the talk doesn't go well. Again, this would entail epistemic irrationality in your background beliefs, meaning the worry those beliefs inform is irrational by virtue of being ill-informed.

For the reasons given, then, it's thus plausible that whilst the imagination can often serve a positive epistemic role in our worrying, it may also have a *distorting* influence on the background beliefs that inform our worry, through causing availability bias within our belief formation. This can ultimately mean that we believe the threat to be more likely or costly than we should, causing irrationality within our background beliefs and thereby rendering our worrying irrational too, as we saw in Chapter Three. The imagination is implicated in this error of rationality for two reasons: (1) it's through the imagination that we raise such possibilities, which given the function of worry will likely consist of reasons *in favour* of the worried about event occurring, potentially causing availability bias, and (2) the salience of that imaginative content may make the reasons in support of the worried about state of affairs, or its possible consequences, more present to mind than reasons against these, also potentially causing availability bias.

We can thus see how imaginative engagement, an intrinsic mechanism within worry, can lead to irrationality within our worrying. As I've stated, these considerations reflect the common tendency to focus more on the bad than the good when worrying - worrying about things you don't want to happen seems to often involve focusing more on reasons for why it might occur rather than reasons why it won't. When worrying we often neglect to consider all the available evidence in a calm, rational manner. The account given here aims to explain this tendency, showing how the imagination is implicated in the rational failing that can occur as a consequence.[61]

Of course, it must be kept in mind that there's no necessary irrationality in raising possibilities about the worried about state of affairs via the imagination and letting these influence your

[61]I purposefully make no claims here about whether the actual *use* of availability bias is irrational in itself – on this question I remain neutral. Rather, I merely limit such claims to the suggestion that it can lead us to irrational beliefs.

background beliefs in order to tune or adjust your appraisal of threat. Indeed, as stated in section 5.1 this is precisely the positive epistemic role that the imagination serves, not only in worry but in our day-to-day belief formation. But epistemic rationality requires that you form or adjust such beliefs in light of the possibilities raised by the imagination in a way that's sensitive and responsive to all the available epistemic considerations. And that means taking into account both reasons for why the possible threat or its consequences might occur *and* reasons for why the threat or its possible consequences might not occur. That is, the rational agent will form such beliefs based on all available relevant beliefs and epistemic considerations, not merely the ones that are most present to mind. Thus, if, for the reasons I've given, the worrier's background beliefs become influenced through the operation of imagination initiating availability bias, the worrier may likely be irrational in the way described.

What this demonstrates is a way that ill-informed worries can occur because of certain internal mechanisms within worry itself. That is, the imagination, an intrinsic component to worry, can lead to our worries becoming irrational through causing availability bias to distort our background beliefs. In the next section I want to consider cases where the imagination can lead to irrationality in a way in which our doxastic state is not influenced at all. Rather, as I'll show, the operation of the imagination can cause irrationality by having a strictly *affective* influence.

5.3 Feedback Loops

We saw in the last section how the imagination can lead to ill-informed worry by 'distorting' our background beliefs. I now want to show how the imagination can cause our worries to become irrational not by influencing our doxastic state in any way, but rather by influencing our affective state. More precisely, the phenomenon I'll identify here is where the operation of the imagination causes our worrying to get caught in what I'll call a 'feedback loop'. This is where, in short, our imaginative engagement within worry generates anxiety, causing the intensity of our worry to

increase, leading to disproportionality between that intensity and our appraisal of threat. Consequently, our worry becomes recalcitrant, and therefore irrational.

Consider the following case. You're awaiting the results of some medical tests, following a visit to your GP after experiencing mild chest pains. Your GP has informed you that there is nothing to be concerned about and the chest pains are probably a result of stress - the tests are merely a precautionary measure. You find yourself a little worried about the possibility of the results coming back positive, however your feelings of anxiety are only mild, and you're only slightly pre-occupied by your worrying. In both cognitive and affective terms, the intensity of your worry is moderate, at best. Let's therefore suppose that your worrying is proportionate to your appraisal of the level of threat posed by the possibility of positive results. Let's also assume that this appraisal of threat is epistemically rational. Your worry is thus rational on our account.

Suppose, then, that in worrying you find yourself attempting to determine what you ought to do if the results are positive. You imagine being told, despite the GP's assurances, that they've found something concerning, or that the chest pains are caused by something more insidious than stress. As we saw in the last section, this imaginative engagement is part of the practical reasoning you're engaged with. But suppose when imagining this, and the possible ways you might deal with this – telling your family the bad news, etc. - you find that your anxiety about such a possibility gets more intense. You also find yourself paying more attention to this imaginative content, and your worry of which they are a part. Your worry therefore grows in intensity - you eventually find that you cannot take your mind off the worrying thoughts and your anxiety grows to become extremely intense. This increase in intensity thus happens as a result of you imagining the possibility of positive test results and the possible consequences of this.

Cases such as this will be familiar to many. As stated, the intensity of your worry in this case has increased, such that what started as a worry of mild intensity is now one of high intensity. But let's assume that the imaginative engagement that caused this has not served the positive epistemic role we identified in section 5.1 and has not distorted your beliefs in any way as described in section 5.2. That is, it's not revealed any relevant epistemic considerations that influence your appraisal of threat, and

it's not distorted your beliefs by causing availability bias. Your appraisal of threat has thus remained uniform. You're still aware, from your GP's testimony, that the tests are merely precautionary, and so you still believe the level of threat posed by such a possibility is low. So, whilst the intensity of the worry has increased greatly, your appraisal of threat has not. On the account given in the Chapter Four, then, your ensuing worry is now irrational by virtue of being *recalcitrant* - the intensity of your worry is now out of proportion to your appraisal of threat.

Cases like this involve the imagination raising certain possibilities that cause no change in your beliefs, as per the epistemic role it often can assume, but nevertheless elicit a significant affective response in you. In such cases, even though your beliefs about the possibility of positive test results haven't changed by imagining such a prospect, you feel more anxious as a result. This is because imaginative content can often cause affective changes in us, both positive and negative, even if the content has no bearing on our beliefs about the world. Indeed, such an influence will be especially prominent when what we're imagining is something fearsome or distressing. This is illustrated by Walton's description of the sequence of events that takes place on an imaginary caving trip:

> Imagine going on a spelunking expedition. You lower yourself into a hole in the ground and enter a dank, winding passageway. After a couple of bends there is absolute pitch darkness. You light the carbide lamp on your helmet and continue. The passage narrows. You squeeze between the walls. After a while you have to stoop, and then crawl on your hands and knees. On and on, for hours, twisting and turning and descending. Your companion, following behind you, began the trip with enthusiasm and confidence; in fact, she talked you into it. But you notice an increasingly nervous edge in her voice. Eventually, the ceiling gets too low even for crawling; you wriggle on your belly. Even so, there isn't room for the pack on your back. You slip it off, reach back, and tie it to your foot; then continue, dragging the pack behind you. The passage bends sharply to the left, as it descends further. You contort your body, adjusting the angles of your shoulders and pelvis, and squeeze around and down. Now your companion is really panicked. Your lamp flickers a few times, then goes out. Absolute pitch darkness. You fumble with the mechanism . . . (Walton, 1997, p.39)

As Walton illustrates here, this description of a merely imaginary sequence of events elicits a real affective response: 'I imagined all of this, merely imagined it. Yet my imaginative experience was genuinely distressing, upsetting - loaded with "affect," as psychologists say. Even rereading the paragraph for the umpteenth time gives me the shivers' (Walton, 1997, p.39). Walton here highlights how our affective states can be sensitive to imaginative content even if we don't believe that content to be true, or even potentially true. That is, we can react with what seem to be *real* emotional

responses to imaginative content that we're fully aware is not reflective of any beliefs we have about the current or future world.[62] Indeed, I may never have even spelunking (i.e., caving), and may have no plans to, and yet real uneasiness is elicited when reading his description.[63]

As we've seen, this can happen whilst worrying. Imagining the state of affairs we're worrying about, or possible consequences of it, can increase our anxiety about it, even if that imaginative content has no bearing on what we believe is true or likely. For example, as stated, you will most likely experience acute anxiety when imagining having to break the bad news about your illness your family, despite the GP's testimony that the tests are merely precautionary. But since, as we're assuming, your appraisal of threat remains uninfluenced in such cases - the imagination hasn't raised any epistemic considerations that cause you to adjust your beliefs - this will mean that the anxiety that's generated in response will become *disproportionately* intense, relative to your appraisal of threat. In other words, since it is anxiety elicited by purely imaginative content, rather than any beliefs you have about the world, it thus becomes more intense than it should be in response to this imaginative engagement.[64]

So, my proposal is that the operation of the imagination in worry can have an affective influence on us, leading to our anxiety being disproportionately intense relative to our appraisal of threat. But not only will our worry increase in *affective* intensity when this happens, but it will also increase in *cognitive* intensity too. That is, we'd expect that as anxiety increases, our worrying will also demand more of our attention. This is because, as we saw in Chapter Four (see section 4.1.2), and as mentioned earlier, worry's affective and cognitive intensity are closely linked, given how emotional states like anxiety influence the focus of our attention (Mitchell, 2023; Brady 2013; 2009; LeDoux, 1996; De Sousa, 1987). In other words, as an emotion grows in intensity, we'll find that more of our attention is captured by it, and the cognitions it motivates. In the case of worry, then, as our anxiety

[62]Walton (1989;1997) actually argued that such emotional responses are to be considered as mere 'quasi-emotions', given that we lack any belief in the emotion's object in such cases. This view – and indeed whether or not it is accurate - has no bearing on my own account though.
[63]See also Stocker (1987) for useful discussion on phenomena like this.
[64]Indeed, this claim fits with more general theories about emotional recalcitrance, which, remember, is defined as an emotion that occurs in conflict or tension with our beliefs (Döring, 2015; Brady, 2009; D'Arms and Jacobson, 2003).

increases in response to imaginative engagement, we'll find that more of our attention is directed towards our worrying, meaning it pre-occupies us more and we spend more time engaged with it. In other words, an increase in our worry's *affective* intensity will generally entail an increase in *cognitive* intensity too. This means that the imagination's affective influence can thus cause a general increase in the intensity of worry overall. And, as in the case we've just considered, if what we're imagining has no bearing on our beliefs, the intensity of our ensuing worry may thus very well become out of proportion to our appraisal of threat in the cases we're considering. The imaginative engagement in worry, an intrinsic component of the forms of reasoning that are involved, can thus generate irrationality by causing our worrying to become *recalcitrant*, i.e., in breach of the requirement that *when worrying about p, the intensity of our worry must be in proportion to our appraisal of the level of threat posed by p.*

This is a relatively simple and intuitive picture. We often imagine the state of affairs we worry about, which can cause the intensity of our anxiety to increase, thus leading to an increase in the overall intensity of our worry. If the imaginative content we're responding to has no bearing on our background beliefs about the worried-about state of affairs, then this may very well lead to our worrying being disproportionality intense relative to our appraisal of threat, i.e., recalcitrant. The putative affective influence the imagination can have on us can therefore cause our worries to become irrational in this way. However, not only can this influence *cause* our worries to become irrational in this way, but it can also lead to this disproportionality being *maintained* through a 'feedback loop' effect occurring. This is because, as stated, when the intensity of our worry increases, more of our attention is demanded by it. This means that we will continue to worry, and thereby continuing to use the imagination as part of the reasoning that constitutes that worrying. Consequently, this may likely continue to generate or even increase the intensity of our worrying in the way just described. This may thereby *maintain* the disproportionate intensity of our worry, potentially elevating it further, consequently leading to further irrational worry, perhaps at a higher intensity, which will involve further utilization of the imagination, and so on. What we may find, therefore, is that our worrying may get caught in a 'feedback loop' - a perpetual, self-sustaining cycle of irrational worry whereby

the very act of worrying itself causes, maintains, and perhaps increases the disproportionality between our worry's intensity and our appraisal of threat, thus maintaining the rational error at stake.[65] The operation of the imagination in worry can therefore not only *cause* us to worry irrationally in this way, but may also serve to *maintain* such irrational worries too.

We thus have a proposal of how our imagination, an intrinsic component to worry, might be implicated in the causation and maintenance of irrational recalcitrant worry. Of course, the claims I've made are empirical, however my account is supported by psychological literature on 'pathological' worry, a term used often within such literature that can describe the kinds of irrational worry we've been discussing. For one, Davey et. al recognise that worry can often be caught up in a 'vicious cycle' whereby the act of worrying can 'further confirm the stressful nature of the situation', leading to a 'spiralling relationship between worry and anxiety' (Davey et. al, 1992, p.144). Here a similar kind of phenomenon to the one I've identified is highlighted, in which the act of worrying itself can re-emphasize how threatening the worried about state of affairs is to us, causing an increase in our anxiety and a 'spiralling' relationship of reactivity between that anxiety and our worrying. Also recognising a similar phenomenon, as stated earlier Tallis and Eysenck make the following claim in their account of the mechanisms involved in worry:

> [Affective] Arousal will increase the narrowness of attention, causing negative information to become more salient. The salience of negative information within the processing system may then result in increased arousal, and so on. (Tallis and Eysenck, 1994, p.46)

Here Tallis and Eysenck describe how affective arousal – an increase in the intensity of our anxiety, as I've described it – will direct our attention towards negative information about the worried about state of affairs, leading to further arousal, and further capture of our attention, consequently initiating a 'cycle' of worry. This is essentially the kind of phenomenon that I've identified in my account of feedback loops. Further still, in a slightly different respect, Wells' 'meta-cognitive' theory of worry

[65]The term 'feedback loop' has also been used elsewhere to describe a similar emotional phenomenon: LeDoux (1996), for instance, uses the term to describe how the processing of emotional stimuli in the brain causes further arousal of the amygdala, which is the part of our brain which is responsible for initially triggering emotional responses. This thereby causes further emotional arousal, and so the kind of feedback loop phenomena I'm describing here. Indeed, this neuroscientific explanation may very well help explain why feedback loops of *worry* occur.

suggests that often the higher-order beliefs we might have about our worrying itself may also lead to the maintenance of these kinds of worry cycles in a similar way (Wells, 2006). That is, through worrying we may form higher-order beliefs such as 'my worrying isn't getting me anywhere', 'I'll never stop worrying', or 'my worrying is making me lose my mind', which may cause affective arousal, meaning the intensity of our worry increases. This may therefore reinforce these higher-order beliefs, increasing the intensity of our worry further and thereby causing a similar kind of feedback loop effect to the one I've identified.[66]

As we can see, many psychological accounts of worry recognise the kind of feedback loop phenomenon I've identified. Indeed, many of us will presumably have experienced feedback loops – or, as Davey et. al, describe them, 'vicious cycles' - of worry, where the activity of worrying has the opposite effect to the functions it ought to serve, only serving to make us feel worse, worry further and perhaps cause further problems and negative possibilities to be raised. It could even be argued that such a phenomenon is so commonplace that we don't need psychological or philosophical theory to describe it for us. However, I've here proposed how the operation of the imagination should be regarded as central to such a phenomenon, given its centrality to the experience of worry and the putative influence it can have on us when utilized as part of it. This is notable given how integral it is to both worry's function and phenomenology.

My account thus provides an explanation as to how imaginative engagement, a key mechanism within the process of worrying, can lead to our worries becoming recalcitrant. Take the case we used to illustrate recalcitrant worry in the last chapter: our friend who is engaged in recalcitrant worry about his home being broken into, where a week before his worry was of a perfectly rational intensity. It seems plausible that his perfectly rational worry *became* irrational as a direct consequence of him *imagining* a break-in and responding in the ways I've highlighted. Like the

[66]It is worth noting that, unlike the other nearby phenomenon identified in the literature, and the one I've identified, the kind of phenomenon Wells identifies here is one that occurs on the meta, or higher-order, level, rather than in a way that is internal to worry. That is, such a cycle is initiated because of the worrier's beliefs *about* their worrying, rather than strictly by virtue of that is going on within their worrying itself. We'll consider some related cases in Chapter Six.

previous section, then, the account I've given here thus shows how this form of irrationality occur through the operation of mechanisms intrinsic to the process of worry itself.

I've thus identified two distinct ways in which imaginative engagement, a central and intrinsic mechanism within worry, can cause our worrying to become irrational 'from within', as it were. One way is via the influence it can have on our doxastic state, and the other is via the influence it can have on our affective state. Both of these capture familiar and relatable ways in which our worries can become rationally problematic. In the final section, I'll consider notable cases where one form of irrational worry is essentially 'converted' to the other via these influences, allowing for the possibility that the rational error at stake can change within a single case of worry.

5.4 Combined Cases

We've so far seen two ways in which the imagination can be implicated in rational failings when we worry. One, the phenomenon of belief distortion, is where the operation of the imagination causes availability bias to distort our beliefs, causing epistemic irrationality within our appraisal of threat. Consequently, our worrying becomes irrational by virtue of being *ill-informed*. The other, the phenomenon of feedback loops, involves the imagination influencing our affective state, leading to disproportionality between the intensity of our worry and our appraisal of threat. This means our worrying becomes irrational by virtue of being *recalcitrant*. As we can see, whilst both illustrate plausible ways in which mechanisms internal to worry can generate irrationality, the phenomena are notably different. To finish the chapter, I want to briefly consider some notable and realistic cases where we might find both these phenomena, and what this might mean for the rational status of the worry in question. Such cases, I propose, are worth drawing attention to since they involve one form of irrationality being essentially 'converted' into the other - or may even involve the worrier violating *both* the requirements of rationality I've identified at the same time.

Consider the following case: you're worrying intensely about your partner having an affair, even though you believe it's highly unlikely they'd do such a thing. Given this belief, the intensity of

your worry is out of proportion to your appraisal of threat, i.e., it is recalcitrant. Let's suppose this is a consequence of some imaginative engagement as described: imagining your partner with another lover may have generated anxiety that elevated the intensity of a previously mild worry to a level that is out of proportion with your low appraisal of threat. Your worry is thus irrational. Suppose, then, as you worry intensely, you engage the imagination to try and gain a better epistemic perspective on the idea and reduce the uncertainty surrounding it. You consider who they may be having the affair with, when and where they might be carrying it out, even why they might be doing it – you might even imagine that they no longer love you or feel unfulfilled. But as you raise such possibilities as part of your worrying, perhaps availability bias starts to come into play. In bringing to mind these things, you may very well start to develop the belief that such a possibility is, in fact, quite likely (at least, above your threshold of likelihood for thinking of the possibility as a genuine threat). You convince yourself of this through the raising of possibilities via the imagination, meaning your appraisal of threat is elevated in such a way to bring it *into proportion* with the high intensity of your worry, where these were previously out of proportion to one another. Your worry is thus no longer recalcitrant. Since you now believe that an affair is actually rather likely, having raised these various considerations via the imagination and caused availability bias to become operational, the intensity of your worry now seems quite appropriate in relation to your newly elevated appraisal of threat. The disproportionality between the intensity of your worry and your appraisal of threat is thus reduced. That your worry is no longer recalcitrant would seem to suggest that it is no longer irrational.

However, this isn't the case. The disproportionality within your worry is reduced at a cost, and your worry is, in fact, still irrational despite recalcitrance being reduced. This is because if your appraisal of threat is indeed changed because of availability bias, as suggested, then you now have an epistemically irrational appraisal of threat. You may have come to believe that there's a reasonable likelihood of your partner having an affair simply because you've been focused on reasons in support of this when worrying about it, neglecting to consider other relevant epistemic considerations. Thus, although now no longer *recalcitrant*, your worry is now *ill-informed*. It thus *remains* irrational insofar as the rational failing at stake in your worrying has thus been essentially 'converted' from one form to

another, again via the operation of the imagination. That is, the form of irrationality has changed from irrationality qua disproportionality - recalcitrant worry - to irrationality qua distorted beliefs – ill-informed worry. It's thus plausible for a given case of worry to involve *both* the phenomena I've described in this chapter.

Cases like these seem completely realistic. Of course, it's worth noting that there may be cases where our threat level is brought into proportion with the intensity of the worry in a way that doesn't involve irrationality in this way. We've seen how the imagination can play a positive epistemic role, and it may very well reveal to us important epistemic considerations that we'd previously not considered. It may be, for instance, that you really *should* believe that the likelihood of your partner having an affair is high, given the available evidence. There may be important and salient tell-tale signs that you've not recognised, which the imagination may reveal to you through raising possibilities in the way described, allowing you to thereby tune your appraisal of threat accordingly in a wholly rational way. This appraisal may then be brought into proportion with the intensity of your worry, meaning your worry is no longer recalcitrant, and thus the irrationality of your worry is reduced. But what determines whether this happens, as I've stated, is whether or not the imagination interacts with justified beliefs and raises possibilities in a way that's sensitive to the available evidence. Failing this and 'focusing on the bad', in a way that leads to availability bias in your belief formation, the adjustments you make to your appraisal of threat will most likely cause your worry to be ill-informed, as in the case above.

It's also equally plausible that, in the opposite direction, a worry may very well become recalcitrant *at the same time* as being ill-informed, in a way that could involve irrationality in both the respects I've highlighted. Say, for instance, you are worrying in a completely rational way about failing an upcoming exam. The intensity of your worry is in proportion to your appraisal of threat, and that appraisal is formed by epistemically rational beliefs. Suppose, then, that the imaginative engagement involved in your worrying initiates availability bias within your belief formation, causing you to form an epistemically irrational likelihood belief about the possibility of failure – you come to believe such a possibility is more likely than you should through belief distortion. Your worry is now

ill-informed. But suppose that, whilst engaged in this ill-informed worry, you then imagine receiving the exam script back and seeing the word 'FAIL' written on it, which causes the intensity of your worry to increase, leading to your worry being caught up in a feedback loop. It's completely plausible that this intensity may grow out of proportion to your appraisal of threat, thus generating recalcitrance. This can happen whilst your appraisal of threat remains epistemically irrational. This means your worry is now informed by an epistemically irrational appraisal of threat *and* is of an intensity that's out of proportion to that appraisal. In other words, you're irrational by virtue of having irrational background beliefs, and also worrying too much in light of these. Your worry has become recalcitrant *at the same time* as being ill-informed, thus simultaneously failing to satisfy both the requirements of rationality identified over the past two chapters.[67]

Cases like the above show that there are different ways in which the phenomena examined in this chapter, and the forms of irrationality identified over the past two chapters, can be found in a single case of worry. It's thus quite plausible that we can be irrational in more ways than one whilst worrying. Indeed, it seems intuitive that the affectively motivated reasoning I've described as worrying as is often a dynamic process that can change and be updated as we engage with it, attempting to settle various practical and epistemic questions in the way I've described. This will often mean that the forms of irrationality at stake within our worrying may often change too. What determines whether the imagination will have one influence or the other, or any of the influences identified at all, is obviously a question that lurks in the background. However, it will most likely be features unique to context of the worry, and indeed the worrier themselves, that will determine this. I've simply given accounts of some notable ways in which the forms of irrational worry I've identified can arise through mechanisms internal to worry. Moreover, both the phenomena I've described capture relatable cases of worry that many of us will be familiar with - when worrying it is common to focus on the bad or let our worrying spiral out of control.

[67]I recognise cases like this in Chapter Three, footnote 8.

Conclusion

It's important to keep in mind that the imagination is by no means a component of worry that necessarily leads to irrationality, or often hinders it from serving its function effectively. On the contrary, the imagination is instrumental in the serving of worry's function on my account. What I've aimed to show here, however, is how the forms of irrationality I've highlighted over the past two chapters can occur by virtue of internal failings within worry, where the imagination in particular is implicated in such failings. I've thus given accounts of two phenomena that may occur within worry - in particular through the operation of the imagination - that can cause our worries to become irrational. And what makes these phenomena notable is that such rational errors occur because of key mechanisms intrinsic to worrying itself, thus causing irrationality to occur 'from within', as it were. I've also suggested that a given case of worry may very well involve both these forms of irrationality at different points, or even at the same time.

This chapter should thereby provide explanatory context for the accounts of irrational worry I've given so far, furthering our project of understanding the boundaries of rationality in worry, as well as the nature of worry itself. In the final chapter, I'll bring considerations from all the previous chapters together, providing an account of a third form of irrational worry, one that relies on the worrier's self-reflective perspective in a way that separates it from the other forms of irrational worry identified so far.

Chapter 6: Weak-Willed Worry

I've so far offered accounts of the nature of worry, the intentionality of worry, two forms of irrational worry, and some internal mechanisms of worry that bring these rational failings about. In this sixth and final chapter I want to provide an account of a third familiar form of irrational worry that relies on considerations from all these accounts. I'll refer to this as 'weak-willed worry'.

Weak-willed worry is where we worry about something in a particular way *despite judging that we shouldn't be*. Such cases will be familiar to us all; I may find myself worrying intensely about missing an important deadline despite thinking that I am worrying too much, since I have plenty of time to complete the work. Or I may worry that a friend no longer likes me, despite judging that I shouldn't since there is nothing that would suggest this. Notice that both of these cases represent one of the forms of irrational worry identified in previous chapters, namely 'recalcitrant' worry and 'ill-informed' worry respectively. This is because weak-willed worry is a further form of irrationality that manifests in worry on top of one of these other failings, where we take our worry to be irrational, form the judgement that we shouldn't be worrying in the way we are, and yet continue to worry despite that judgement. As I'll propose, doing so means our worrying exhibits a phenomenon known as 'weakness of will'.

Weakness of will, or as it also commonly referred to as, 'akrasia', is where we act against our better judgement. In having another slice of cake despite judging that it would be better not to, my conduct is weak-willed. Although under this description weakness of will seems innocuous, it poses interesting philosophical problems. This is because many have argued that the intentional performance of some action y implies that on some level the agent judges y to be the best action available to them at the time of acting (Hare, 1952; Davidson, 1969; Bratman, 1979). On this view, the performance of y itself can be treated as a declaration that the agent judges y-ing to be best. Thus, we might infer from my reaching for another slice of cake that at the time of acting I deem eating cake to be the best thing to do on some level. Weak-willed actions, where we act *contrary* to what we judge best, would seem to be inconsistent with this idea. Moreover, even if you don't subscribe to the idea that y-ing manifests the judgement that it's best to y, cases of weakness of will still need explaining,

since the question remains of why and how someone would do something they have decided not to do. Weakness of will thus raises important questions about the relationships between our intentional actions and our better judgement. The nature and possibility of it has thus been, and still is, a widely debated topic (Hare, 1952; Davidson, 1969; Bratman, 1979; Mele, 1987; 1989; 2010; Holton, 1999; 2009; Haas, 2018).

As stated, in this final chapter I want to show how we can exhibit weakness of will in worrying. I'll structure the chapter as follows. I'll first provide an account of the features of worry that I am describing as weak-willed. Then I'll consider some established accounts of weakness of will in order to show how the cases of worry I describe qualify as a genuine instances of it. Appealing to these accounts will then provide a framework for describing the mechanisms at play within weak-willed worry, allowing for an account of why and how it occurs. This will also see me engaging with literature on the role of emotion in weakness of will. With this established, I'll then briefly discuss the respect in which weak-willed worry is irrational. This should provide us with a plausible picture of how worrying can be irrational by virtue of being weak-willed.

6.1 The Features of Weak-Willed Worry

As stated, weakness of will is where we act contrary to our better judgement – this may entail acting contrary to our judgement that an alternative action is better, or defying our judgement that we shouldn't do something. Weak-willed worry, I propose, is where we worry in a particular way despite our judgement that we shouldn't. Again, an example of this would be worrying intensely about missing an important deadline despite judging that I shouldn't be worrying as much as I am, since I firmly believe that I'll get the work done on time. I'll start this chapter by giving an account of the features of weak-willed worry, and the conditions under which it occurs. This will first involve accounting for the 'better judgement' that our worrying runs contrary to in such cases; that is, the nature of the judgement we make that we shouldn't be worrying the way we are, and what might lead us to make such a judgement.

As stated, in cases of weak-willed worry our worry runs contrary to our judgement that we shouldn't be worrying in the way we are. I propose that typically this judgement will be made in light of a more fundamental self-reflective judgement we make about our worrying, namely that our worrying involves one of the failures of rationality outlined in Chapters Three and Four. So, through self-reflection we will either judge that our worrying is *ill-informed* or *recalcitrant*.[68] Judging that our worry is ill-informed means judging that one or more of the beliefs informing our worry is not adequately justified. This means we judge there to be a fundamentally epistemic error - an error within our background beliefs.[69] Perhaps we come to think that our belief about the likelihood of the worried about event is poorly supported by evidence, for example, which will typically lead us to adjust how likely we then take that event to be. Judging that our worrying is recalcitrant, on the other hand, means judging that our worrying is too intense relative to our appraisal of threat (our general appraisal of how threatening the worried about event is, determined by our cost and likelihood beliefs). This means we judge there to be a practical error - this is an error not in our beliefs themselves, but an error in the way we're worrying, relative to what we believe. That is, we think that we're worrying too much (or possibly too little). Let's say, then, that judging that one of these errors is present within our worry entails judging that *what we're worrying about is not as threatening as we thought*, or at least not as threatening as the intensity of our worrying suggests.[70]

This means that weak-willed worry relies on a degree of self-reflection - it is through reflecting on elements of our worrying that we will judge there to be a failure within it, and thus that what we're worrying about is not as threatening as we thought. This highlights a notable perspectival

[68]The claim here is not that we necessarily judge there to be a rational error as understood in the technical terms used here to characterise this error; we don't, for instance, judge that our worry *exhibits the phenomenon of emotional recalcitrance*, since this is a theoretical concept. Rather in such cases we simply judge there to be that error, which this concept describes: we simply judge that we're worrying too much, for instance. Furthermore, the reasons I've given for why we make the judgement that we shouldn't be worrying in the way we are (judging our worry to be recalcitrant or ill-informed) are not necessarily exhaustive. We may, for example, simply be of the opinion that worry is *never* appropriate about this kind of thing, and so whenever we worry in a certain way we judge that we shouldn't. The claims I'll make in this chapter should apply to cases like this too.

[69]Of course, on the account I gave of ill-informed worry there is also a practical error at stake too, however the error we take to be present within our worrying will presumably be the epistemic error of not having adequate support for our background beliefs.

[70]From hereon I'll simply say we judge that what we're worrying about is not as threatening as we thought – in cases where we judge that our worry is recalcitrant, take this to mean we judge that 'what we're worrying about is not as threatening *as the intensity of our worrying implies*'.

distinction between weak-willed worry and the forms of irrational worry discussed in previous chapters. Both ill-informed worry and emotionally recalcitrant worry involve rational failings that can be present from a purely third-person perspective, since they can occur without the worrier judging there to be any error present. We can, for instance, engage in ill-informed worry without thinking that there's anything problematic about doing so. However, we can't be as blissfully ignorant in the case of weak-willed worry, where necessarily we'll have taken the kind of self-reflective perspective on our worry described. We might thus say that, unlike the other forms of irrational worry identified, weak-willed worry relies on a degree of initial rational *success*, since it relies on us exercising our capacity to be self-reflective and make judgements about the appropriacy and rationality of our worrying.

So, having judged there to be a rational failure in our worrying, and thus that what we're worrying about is not as threatening as we thought, I propose we'll then make the key judgement that we shouldn't be worrying in the way we are. We make this judgement because we now think there's something problematic about our worrying, which thus places a demand on us to adjust it accordingly.[71] Crucially, this is the judgement that renders our subsequent worrying weak-willed, since by continuing to engage in a worry that we've judged to be rationally problematic we're now doing something that we've judged we shouldn't. In other words, it is the judgement that our weak-willed worry runs contrary to.

The content of this judgement can be understood in one of two ways, depending on the context of the worry and the rational failure judged to be present within it. Either we'll judge that we shouldn't be worrying *at all*, or that we shouldn't be worrying *as much as we are*.[72] If, for example, we come to think that what we're worrying about poses no threat whatsoever, perhaps in light of a defeating piece of available evidence we hadn't previously taken into account (our worry is thus ill-

[71]Whether we're correct or not in our judgement that there is a rational failure or not has no bearing on my claims here; weakness of will is still exhibited even if our 'better judgement' is erroneous and there is, in fact, no rational failing within our worrying, even though we take there to be one. This is because in continuing to worry, our conduct still runs contrary to our better judgement, which is sufficient for weakness of will. This relates to the internalism/externalism debate that had a bearing on my account of recalcitrant worry in Chapter Four (see Chapter Four, p.95).

[72]See Chapter Four for an account of why the intensity of worry is an important determinant of worry's rational status.

informed), presumably we'll judge that we should stop worrying entirely - no worry is demanded. Or, if we judge that what we're worrying about still poses a threat, but just to a lesser degree than our worrying implies (our worry is recalcitrant), we'll consequently judge that we should be worrying *at a lower intensity* than we currently are. We think worry is demanded in this case, but less than we're currently engaged in. So, when we judge that we shouldn't be worrying in the way we are, we either judge that we should adjust the intensity of it accordingly or cease it entirely. In order to capture both these possibilities, then, let's say that the content of the judgement we make is something along the lines of 'I shouldn't worry *in this way*'.[73] It is in these terms that I propose we can understand the 'better judgement' that our worrying runs contrary to in weak-willed cases.

So, all things being equal, upon judging there to be a rational failing within our worry, and thus that what we're worrying about is not as threatening as we thought, we'll consequently make the key judgement 'I shouldn't worry in this way'. For example, suppose you judge that your worry is ill-informed when worrying about missing that important work deadline. You had previously believed that missing it was very likely, however you now judge that this isn't evidentially supported. It appears your likelihood belief was not justified, and so the possibility of missing the deadline is not as threatening as you thought. In fact, you now think that the available evidence would suggest that missing the deadline is, in fact, highly *un*likely. Judging this to be the case thus gives way to the key judgement identified: 'I shouldn't worry about missing the deadline in this way'.

It is at this point where your worrying may subsequently become weak-willed. Presumably, what ought to happen when you make this judgement is that you'll make an appropriate adjustment to the intensity of your worrying or stop worrying entirely. This is because, as stated earlier, such a judgement will demand a change in your conduct (your worrying) precisely because you've judged there to be something problematic about your conduct in worrying the way you are. The same would be true in any such case; if I think that I'm driving my car recklessly and erratically, thereby judging that I shouldn't be driving in such a way, the expected response is that I adjust my driving

[73]Obviously this will not be the exact content of the judgement in all cases. The claim here is that the worrier will make a judgement with *approximately* this content.

accordingly. The same is true when you judge that you shouldn't be worrying in the way you are. However, should you *not* stop worrying in the way you are having made such a judgement, continuing to worry at the same intensity, I propose your subsequent worrying exhibits weakness of will. In continuing to worry at the same intensity, failing to adjust that intensity or cease worrying entirely, your conduct now runs contrary to your judgement 'I shouldn't worry in this way' i.e. your better judgement.

We can claim that this is a case of weakness of will because worrying is something we do *intentionally.* Recall how we saw in Chapter Two that worry is intentional by virtue of its directedness - in being directed by us our worrying manifests intention in action, making it an intentional cognitive activity rather than a mere unintentional movement of thought. What this means is that when we worry in a way we judge to be problematic, despite our judgement that we shouldn't be, we're *acting* contrary to that judgement. This is an important premise, because weakness of will is almost universally understood to describe *intentional* actions and activities that run contrary to our better judgement (Davidson, 1969; Bratman, 1979; Mele, 1987; 1989; 2010 Holton, 1999; 2009). If such actions were compelled or unintentional, they wouldn't pose any kind of puzzle – we could simply explain them by saying the agent was forced to act by some external influence. Weakness of will is thus philosophically interesting because it involves us doing something intentionally despite a judgement that we shouldn't be. This kind of conflict between what we *intentionally do* and our judgement about we *should* do is the hallmark of weak-willed action. When framed in this way, it becomes evident why the cases of worry I've described above do seem to count as genuine cases of weakness of will: in engaging with worry in a certain way despite having judged that we shouldn't be doing so, we're intentionally doing something that we've judged we shouldn't.

We've now got a picture of what weak-willed worry involves: we judge there to be a rational failing in our worrying, and so what we're worrying about is not as threatening as we thought. This causes us to make the judgement 'I shouldn't be worrying in this way'. Nevertheless, we continue to worry in the same way, at the same intensity, despite this judgement. This is weak-willed worry. Notice that according to this picture, no matter which rational failing we judge there to be

present within our worrying, necessarily weak-willed worries will also be recalcitrant worries i.e. worries that are too intense relative to our appraisal of threat. This is either because (1) when a worry we judge to be *recalcitrant* becomes weak-willed through us continuing to worry at the same intensity, it *remains* recalcitrant or (2) when a worry we judge to be *ill-informed* becomes weak-willed through us continuing to worry at the same intensity, it *becomes* recalcitrant. Consider these cases in turn.

First, take the cases where we judge that our worry is recalcitrant. Suppose you are worrying about missing the deadline, and through self-reflection you judge that your worry is far too intense, relative to how costly you believe missing the deadline would be. You thus judge that your worry is recalcitrant since what you are worrying about is not as threatening as the intensity of your worry suggests. This causes you to make the key judgement 'I shouldn't worry about missing the deadline in this way'. If you continue to worry at the same intensity despite this judgement, your worrying is thus now weak-willed, by virtue of *remaining* recalcitrant.

Now, second, take the cases where we judge that our worry is ill-informed. Again, suppose you are worrying intensely about missing the deadline, however in this case you judge that your worry is *ill-informed*: you ascertain that you had misjudged how likely the possibility of missing the deadline is, and in fact such a possibility is extremely low. The deadline, you've realised, is later than you first thought. You thus adjust your appraisal of how threatening the possibility of missing this deadline is and having made this adjustment, you judge 'I shouldn't worry about missing the deadline in this way'. In then continuing to worry at the same intensity as previously, your worry is weak-willed – it runs contrary to your better judgement. But it is no longer ill-informed since you've now adjusted your appraisal of threat. Rather, it is now recalcitrant: it is now too intense relative to your newly updated appraisal of threat. So, what was previously an ill-informed worry now *becomes* a recalcitrant worry.

Your worry in this case is weak-willed. But it is also now recalcitrant because there's been an adjustment to your appraisal of threat.[74] And since you've adjusted your beliefs but failed to adjust the intensity of your worry, belief and worry are now in tension with each other in a way that amounts to recalcitrance – your worry is now too intense relative to your newly adjusted appraisal of threat. So where before the intensity of your worry was *proportionate* to your *unjustified* appraisal of threat (ill-informed), now the intensity of your worry is *out of proportion* to your *newly adjusted* appraisal of threat (recalcitrant). Because of this, your worry is no longer ill-informed, but it is now recalcitrant by virtue of the weakness of will it now manifests. As such, regardless of the rational error we judge to be present within our worry, if we fail to adjust our worrying in light of our judgement 'I shouldn't be worrying in this way', our worrying is both weak-willed *and* recalcitrant. Recalcitrant worries *remain* recalcitrant, and ill-informed worries *become* recalcitrant.

We now have an account of the features of weak-willed worry. Now we need to consider more closely how the cases of worry described do indeed exhibit weakness of will, and why such cases might come about. What exactly weakness of will *is,* however, is a widely debated question. As such, in the next section I'll consider and compare some established accounts of weakness of will, before attempting to square my picture of weak-willed worry with them. Doing so will not only show how the cases of worry I've described do indeed exhibit weakness of will, but will also allow us to shed light on why and how weak-willed worry occurs.

[74]It is perhaps possible that we fail to adjust our beliefs when judging there to be an error within them. That is, we may continue to hold such beliefs despite judging that these beliefs are irrational or not well-supported. This would allow for the possibility that our worry remains ill-informed despite our judgement that it is. But whether this is possible or not is a complex epistemic question that I do not have space to address here. As such, as stated here I'll simply assume that judging there to be an error in our beliefs always leads us to adjust our beliefs accordingly. I think we can comfortably claim that this will be true in most cases; indeed, doxastic involuntarism, often taken to be the standard view within these debates, tells us that a belief that p will automatically be dropped or adjusted when confronted with the falsity or erroneousness of p (see Shah and Velleman, 2005; Williams, 1973)

6.2 Understanding Weakness of Will

6.2.1 Davidson's Account

The nature of weakness of will and akrasia is by no means universally agreed upon. There have been many accounts that attempt to describe it over the years in different ways (see Davidson, 1969; Bratman, 1979; Mele, 1987; 1989; 2010 Holton, 1999; 2009), and indeed, the very possibility of it has been questioned by some (Hare, 1952). Further, more recently there have been attempts to understand weakness of will in terms of modern theories of mind (Haas, 2018). As we saw at the beginning of this chapter, the reason for this widespread attention is because the possibility of weak-willed action seems to raise difficulties for our philosophical understanding of action itself; if both action x and action y are available to me, and I judge action y to be the best, why would I then intentionally perform action x contrary to my better judgement? Understanding some different approaches to this apparent puzzle will help us see how the cases of worry described in the previous section count as genuine instances of weakness of will, as well as providing a framework for understanding the mechanisms at play within them.

Arguably the most famous account of weakness of will is given by Donald Davidson (1969), who poses his account as a solution to the puzzle just described. According to him, weakness of will – or as he calls it, 'incontinence' – is understood in the following way:

> In doing x an agent acts incontinently if and only if: (a) the agent does x intentionally; (b) the agent believes there is an alternative action y open to him; and (c) the agent judges that, all things considered, it would be better to do y than to do x. (Davidson, 1969, p.22).

For Davidson, this interpretation of weakness of will appears impossible, a view put forth by Hare (1952) nearly two decades previously. This is because, on his 'mildly internalist' view of action, our evaluative judgements about available actions are manifested in our intentional actions themselves, and are a necessary condition of our performance of them - if we perform either x or y, judging 'y is better than x' will necessarily mean that we y. Our intentional actions are therefore always the actions we take to be the best available at the time of acting: intentionally reaching for another slice of cake presupposes that, at the time of acting, I judge that having another slice of cake is the best action

available. Weak-willed actions, however, seem to violate this principle, since they involve acting intentionally *contrary* to our evaluative judgement about which action is best. But Davidson also recognises that weak-willed actions seem perfectly plausible and realistic, and so can't simply be rejected. His account thus purports to show how weak-willed intentional actions are compatible with his internalist framework of intentional action.

Davidson does this by drawing a distinction between different kinds of evaluative judgements we can make about actions available to us, namely 'all-out' judgements, and 'all-things-considered' judgements. 'All-out' judgements are the evaluative judgements such as 'y is better than x' just described, which are manifested in our intentional actions. As stated, assuming we're free to act, making such a judgement will mean that this is the action we perform. All-out judgements are, as Davidson claims, 'geared towards intentional action', giving an unconditional, outright verdict in favour of one action or another (Davidson, 1969). So, when we make an all-out judgement that y is better than x, and are free to do either, we'll necessarily do y if we do either x or y. Moreover, the implication of this picture is that we cannot intentionally act contrary to these judgements – making an all-out judgement that y is the best action available is a necessary condition of intentionally y-ing for Davidson.

On the other hand, 'all-things-considered' judgements are also judgements that give an evaluation about available actions. However, they are different in logical form to the all-out judgements just described. For Davidson (1969), an all-things-considered judgement gives an evaluation that's conditional on the sum of reasons considered by the agent, meaning they do not give any outright verdict about which action is preferable. They merely say that '*in light of these reasons*, y is better than x'. Or, as Tappolet puts it, 'they tell us not what we ought to do, but what our reasons indicate we should do' (Tappolet, 2003, p.100). Crucially, on Davidson's view this conditionality means that all-things-considered judgements are not causally connected to our intentional actions, as all-out judgements are. Unlike all-out judgments they are merely 'practical in their subject, not in their issue' (Davidson, 1969). This means while we cannot act contrary to what we judge all-out to be best, we *can* act contrary to what we judge is best all-things-considered.

For Davidson, rationality requires that our all-out judgements are formed on the basis of our all-things-considered judgements. Given that all-out judgements are causally connected to intentional action, this thereby entails a requirement that we *do* what our considered reasons say we should. This is indeed typically the case – we weigh up our reasons, form an all-things-considered judgement that y is best in light of them, and then form an all-out judgement in favour of y which causes our intentional act of y-ing. However, the weak-willed agent fails this requirement on Davidson's view. They form an all-out judgement that doesn't align with their all-things-considered judgment – what they judge their reasons say they should do. That is, they think that in light of the sum of their reasons they should y, and yet they form an all-out judgement in favour of x, and so consequently perform x. This may happen if their all-out judgement is formed on the basis of a reason, or set of reasons, that falls short of the total sum of reasons considered. For instance, I may judge that all-things-considered, I shouldn't smoke a cigarette, and yet purely on the basis of the expected satiating feeling that smoking one will give me, I judge that smoking one is best, thereby intentionally smoking the cigarette. The weak-willed agent thus fails to make the right evaluative judgement, and thus do what the sum of their considered reasons say they should. In other words, they do what they judge to be best, but they get this judgement wrong.

Notice that this doesn't violate Davidson's principles of intentional action sketched above. Since all-things-considered judgements aren't causally connected to our intentional actions in the way all-out judgements are, it's quite plausible that we can act contrary to them. And this is exactly what the weak-willed agent does on Davidson's view. Recall the definition of incontinence (i.e. weakness of will) he gives; according to this, the weak-willed agent acts contrary to a judgement of the form 'all-things-considered, it would be better to do y than x'. The use of the 'all-things-considered' clause signifies the key distinction Davidson wants to make: the weak-willed agent simply acts contrary to *what they judge their reasons say they should do*, not *what they judge to be best all-out*. The possibility of weak-willed action is thus preserved for Davidson. So too preserved is his principle of intentionality, which states in acting one manifests the all-out judgement that one is doing what one think is best.

6.2.2 Mele's Account

Whilst Davidson's account of weakness of will is certainly sophisticated, it has some unintuitive implications. As outlined above, Davidson develops his account to accommodate his internalist principle that intentionally y-ing implies a judgement that y is the best action available, i.e., an 'all-out' judgement in favour of y. So, when reaching for a cigarette through weakness of will, in spite of my decision to quit, I judge that smoking is the best available action even though I think that I should refrain *according to the sum of my considered reasons*. I do what I judge best in that moment, however I get this judgement wrong - this is the failing of weakness of will as Davidson sees it. But whilst this may certainly be possible, it seems incorrect as a characterisation of weakness of will in general. This is because clearly weakness of will often seems to involve acting *contrary* to what we think is best. When intentionally reaching for the cigarette, we would think that on *no level* do I judge that this is the best option available (I might hate myself for doing so). This is an explanation that Davidson's account cannot allow for.

Mele highlights this concern, pointing out that 'sometimes what we do, at the very time at which we are doing it, seems to us to be, without qualification, rather distant from the best available option' (Mele, 1987, p.44). For Mele, it seems quite plausible that we can act contrary to our judgement about which action is best on all levels, and that many cases of weakness of will can and should be characterised as such. He thus offers an alternative account to Davidson's that seeks to capture this intuition, in which he claims that often weakness of will simply involves acting contrary to what we judge to be best*,* not merely to what our considered reasons conclude is best, as Davidson proposes. This paints an arguably more intuitive picture of weak-willed action that avoids the above concern. It doesn't have to be the case that the weak-willed agent judges that their weak-willed action is best – rather they might judge that y is the best available action in every sense, and yet intentionally x through weakness of will. To allow for this, Mele thus rejects Davidson's internalist principle, which would rule out this possibility; that is, Mele rejects the idea that intentionally y-ing implies that we judge (all out) y to be the best action available. In allowing for our intentional actions to become detached from our evaluative judgements in this way, we arrive at a more intuitive understanding of

weakness of will, where we simply act contrary to what we judge best, rather than doing what we judge best but getting that judgement wrong in light of our considered reasons.

To illustrate this, Mele gives the case of John, who is in Biology class at school. He has been instructed to prick his finger with a needle to draw blood, allowing him to test his blood type. He weighs up his reasons and judges that he should prick his finger. He thus forms the intention to prick his finger and proceeds to do so. As he draws the needle close to his skin, however, he's unable to perform the task, pulling the needle away at the last second. He tries again without looking, yet once he feels the needle touch his skin he pulls it away again. John is weak-willed in not going through with the task. Notably, as Mele emphasises, his pulling the needle away is intentional (as we saw in Chapter Two, his being in control of the needle shows that there is an intention-in-action involved).

Davidson would explain John's weakness of will in the following way: at the point at which he intentionally pulls the needle back, he judges (all-out) that refraining is the best option available, even though he thinks that his considered reasons say he should go through with it. In doing so, his all-out judgement now conflicts with his all-things-considered judgement, making him weak-willed. This is how Davidson understands weakness of will. However, for Mele this case should be explained differently: he proposes that John's weakness of will plays out without any conflict in judgment at all. That is, throughout he judges (all-out) that pricking his finger is best and there's no change in that judgement even when he intentionally pulls the needle back. Moreover, as Mele notes, this interpretation is supported by the fact John tries a second time – it stretches plausibility to say he judges one thing, then another and then changes judgment again as he tries to draw blood, pulls the needle back and then tries again, as Davidson would have to propose. Rather, throughout he simply judges it best to prick his finger but doesn't act in accordance with this judgement through weakness of will. The problem of Davidson's account is thus the internalist principle which prevents him from accepting this more plausible explanation – that we can *intentionally act contrary to what we judge best on all levels*.

Mele's explanation seems decidedly more plausible and highlights how often our intentional actions can simply run contrary to our judgements about what is best to do. He thus argues that cases

like this give us good reason to dispense with Davidson's internalist principle. This thereby means weakness of will can involve us acting contrary to what we judge best *on all levels*, not merely to what our considered reasons say is best. As Mele highlights (correctly, I think), it seems plausible that cases like John exist and demonstrate weakness of will, meaning weakness of will should often be understood in such terms. Indeed, this interpretation is also endorsed by McDowell, who states that 'there is no need to strain, as Davidson does, to find a sense in which [the agent] judges her weak-willed action preferable to the course, better supported by her reasons in her own view, that she does not take' (McDowell, 2010, p.427).

Mele takes this approach by emphasising that what motivates us to act is often disconnected from how we evaluate our available actions. For him it's quite plausible that motivational factors outside of our evaluative 'ranking' of available actions can influence what we intentionally do, our conduct thus becoming detached from our evaluative judgements about what's best: 'the connection between better judgments and the balance of an agent's motivation is more complex than Davidson thinks' (Mele, 1987, p.49). The weak-willed agent, then, at the time of acting, may simply be *more motivated* to perform some evaluatively weak action x, perhaps abandoning their initial intention to y and forming a new one to x, despite judging that y is the best available on all levels.[75] This would explain John's case: presumably his fear or squeamishness is what motivates him to pull the needle back, despite still judging that he should go through with it.

Weak-willed action, interpreted in Mele's way, thus involves the following: the weak-willed agent considers their reasons, and having weighed them up, makes the evaluative judgement that y is better than x. However, some motivational force causes them to intentionally x, even though they maintain their judgement that y-ing is best - their evaluative judgements do not have to change at all. In acting on this motivation, they are thus acting contrary to what they judge is the best available option. When reaching for a cigarette despite having decided to quit, for example, it is purely the

[75]Mele does not rule out cases of weakness of will in which the agent 'changes their mind' in the way Davidson proposes i.e. change their judgement about the best course of action available – such cases are certainly possible. However, unlike Davidson, his view is that we should not restrict our understanding of weakness of will to these cases, and extend the definition to cases like John's where the agent does not change their mind about what is best and still acts contrary to that judgement.

motivational force of the expected satisfaction that is operative, meaning I end up smoking despite my judgement that refraining is the best option available (and this is why, in smoking, I hate myself.) This is something Davidson's account cannot accommodate, where what we're motivated to do is tied to our evaluative judgements, such that what we intentionally do is necessarily what we judge to be best - even if we think that the sum of our considered reasons says otherwise.

I propose that understanding weakness of will in Mele's terms provides a framework for explaining how it manifests in worry, as suggested. That is, when we engage in weak-willed worry, something motivates us to continue worrying in a way that we think is problematic, despite us decisively judging that we shouldn't be. Since worrying is something we do intentionally, as we saw in Chapter Two, this can thereby be framed as intentionally acting contrary to our better judgement. Interpreting weak-willed worry in terms of Davidson's understanding would lead to an unintuitive picture, since we'd face the same concern that Mele identifies. That is, by virtue of worrying being intentional, we'd have to accept that the weak-willed worrier judges that worrying in the way they are is the best course of action, despite judging that according to their reasons it's not. This doesn't seem accurate – again, like reaching for a cigarette, presumably on no level do you judge that continuing to worry, in a way you judge to be problematic, is the best course of action, even though it's something you do intentionally.

Interpreting weak-willed worry in Mele's terms allows us to avoid this issue. That is, we judge on all levels that we should cease worrying, or at least adjust its intensity in light of the rational failing we've judged to be present, and yet we continue worrying in the same way, at the same intensity. This maps onto the picture of weak-willed worry we developed in the previous section, where we carry on worrying despite our judgement 'I shouldn't worry in this way'. Moreover, as we've seen, Mele appeals to the idea of 'motivational forces' beyond our mere evaluation of available actions in order to explain why we act weak-willed, performing actions that 'seems to us to be, without qualification, rather distant from the best available option' (Mele, 1987, p. 44). As I'll argue in the next section, it is because of the influence of such a motivational force that we engage in weak-willed worry.

6.3 Understanding Weak-willed Worry

6.3.1 The Role of Anxiety

Mele's account of weakness of will provides a framework for understanding weak-willed worry. For Mele, weakness of will involves acting on a motivation that runs contrary to our better judgement. In cases like weak-willed smoking, for example, the motivation to act comes from the anticipated satisfaction that smoking will give me, despite my judgement that I shouldn't smoke since doing so is unhealthy. The same is true in other cases: I'm motivated to cut an extra slice of cake precisely because I know the cake tastes delicious and I desire to eat more, even though on all levels I judge that I shouldn't since I'm on a strict diet. In both cases I'm moved by a motivational force that runs contrary to my evaluative judgements about what is best to do, and in acting on this motivational force I'm weak-willed. I propose that weak-willed worry can be understood in these terms. What, then, is the motivational force that moves us to engage in weak-willed worry?

This is a question that we already have the answer for. Recall that worry is a form of *affectively motivated cognition* on our account; that is, we're motivated to worry by anxiety (see Chapter One). We've no reason to think that this isn't also true of weak-willed cases – weak-willed worries only differ from 'regular' worries simply by virtue of the way they diverge from our self-reflective better judgement as described. They are just worries that we think we shouldn't we be engaged in the way we are; otherwise, there's no difference between a weak-willed worry and any other worry. As such, what motivates weak willed worries will be what motivates worry in general: anxiety. Indeed, Mele (1987, p.37) recognises that our emotions and affective states will often be what motivates us in cases of weakness of will. But of course, anxiety doesn't always motivate us to worry in a weak-willed way, in a way that diverges from our better judgement. In many cases, anxiety motivates us to worry in a way that we would fully endorse, should we be self-reflective. There's thus

something amiss in cases of weak-willed worry, where this endorsement is absent.[76] Why does our anxiety motivate worry that runs contrary to our better judgement in these cases? How, if at all, is the role our anxiety assumes in these cases different to cases of 'regular' worry?

I propose our anxiety motivates weak-willed worry when that anxiety fails to track the change in perspective that comes with judging there to be a rational failing in our worrying, meaning it continues to motivate us to worry in a way that we now think is problematic. As we said earlier, judging there to be a rational failing within our worrying means we judge that what we're worrying about isn't as threatening as we thought. This, we can say, entails a *change in perspective* on that threat, which is what places the demand on us to adjust our conduct by adjusting the intensity of our worry accordingly or ceasing it entirely. Weak-willed worries, as we've seen, are those where we fail this demand – we continue worrying as we were, at the same intensity, contrary to our judgment 'I shouldn't be worrying in this way'. The reason for this, I propose, is that the anxiety motivating our worry has not tracked our change in perspective on the threat in the way we would expect. By this I simply mean our anxiety remains at the same intensity, where this intensity should have been adjusted given our judgement that what we're worrying about is not as threatening as we thought. In remaining at the same intensity, it continues to motivate the same intensity of worry, which we now take to be problematic given the self-reflective judgements we've made.

It's not unusual for emotions to occur in tension how we take the world to be in this way. We may experience fear of flying when on a flight despite firmly believing that we're completely safe, for example. This also means our emotions may fail to track changes in our perspective or beliefs; suddenly realising the angry, snarling dog in front of you is attached to a chain that is bolted to the wall may not alleviate your fear in the way you might expect. As we've seen, emotions are *recalcitrant* in these cases, and the kind of tension that defines emotional recalcitrance is often found

[76]Here must be careful; I don't want to claim that anxiety *compels* us to worry – this would mean such worrying does not qualify as weak-willed, given that weakness of will describes actions that are free and uncompelled, as stated earlier (Davidson, 1969; Mele, 1987). This would also undermine our established claim that worrying is a fully intentional cognitive activity, under our control. Rather, my proposal is that our anxiety merely motivates us to continue worrying in the way we've judged to be problematic, despite us being free to cease worrying or adjust it in the way we've judged we should.

in anxiety and, in turn, worry. Indeed, as others have recognised, this often seems to be a characteristic feature of anxiety - both Levy (2016) and Vazard (2022), for example, discuss the familiar anxiety one might feel about the possibility of having left the stove on at home, despite firmly believing that such a possibility is extremely unlikely. In such cases there is tension between our anxiety and how we take the world to be.

This is the kind of anxiety that I propose motivates weak-willed worry, which I'll label *recalcitrant* anxiety.[77] That is, if our affective state fails to track the change in perspective we get through judging that we're worrying about is not as threatening as we thought, meaning our anxiety remains at the same intensity, that anxiety is recalcitrant since it's now in tension with how we take the world to be. Note that this is a recalcitrance that is borne through the very self-reflective judgement we make in the first place, which weak-willed worry relies upon: it's through judging that what we're worrying about is not as threatening as we thought that we get a new perspective on the possible threat, to which our anxiety is now recalcitrant in remaining at the same intensity. This recalcitrant anxiety will thus continue to motivate the same intensity of worry, which we now judge to be rationally problematic. The weak-willed worry we're now engaged in is therefore motivated by our recalcitrant anxiety.

This answers the question of what the kind of motivational force is at in play weak-willed worry. But in order to fully account for the mechanics of weak-willed worry, we now need to consider *how* our recalcitrant anxiety motivates us in such a way. That is, how does it motivate us to do something that we've decisively judged we shouldn't, i.e. worry in a way that we think is too intense, or even totally unnecessary? As we'll see, my proposal is that the actual mechanics of how recalcitrant anxiety motivates weak-willed worry is the same as in any case of worry – the motivational

[77]This is a liberal use of the term 'recalcitrant'. Some may object to such a use, since recalcitrance is a term that ordinarily describes emotions that occur in conflict or tension with our beliefs or judgements – fearing that p whilst believing that not-p, for instance. And anxiety is an emotion that is specifically responsive to uncertainty; that is, neither believing that p or that not-p, meaning there is no clear belief with which anxiety can be in conflict or tension with in a way that amounts to emotional recalcitrance proper. That is, one may object that anxiety does not have the propositional structure that allows it to be accurately described as recalcitrant in the way other emotions are. However, I here simply use the term 'recalcitrant' to capture the way our anxiety can occur in tension with how we take the world to be, such as in the case given by Levy and Vazard as described. Indeed, it has been used by others in this way before (see Noggle, 2016).

mechanism remains the same. However, this is something we've only briefly looked at in Chapter One when we gave our account of the nature of worry. A closer look at the mechanics of this motivation will thus allow us to see more clearly what exactly is going on in cases of weak-willed worry and the kind of role our recalcitrant anxiety assumes in such cases, whilst simultaneously shedding further light on the way worry is motivated in general too.

6.3.2 Emotions and Attention

The ideas developed above can be explained in terms of the influence that emotions have on our attention, and how this can generate motivations to act. More specifically, emotions influence our attention in ways that are relevant to their evaluative content – this is something we've discussed in previous chapters (see Chapter Five, section 5.2, 5.3; Chapter 4, section 4.1.2). Anger, for instance, will direct our attention towards features of the situation that we're angry about, and sadness will direct our attention towards features of the situation that make us sorrowful. This is a widely recognised and discussed feature of emotion across both the philosophical and empirical psychological literature (Mitchell, 2022; Brady, 2009; 2013; Eysenck et al., 2007; LeDoux, 1996; De Sousa, 1987). Importantly, not only does this influence pertain to what we pay attention to in our surrounding environment, but it also pertains to the direction of our *cognitive* attention too, i.e., which thoughts we attend to (Baumeister, 2017; Deonna and Teroni 2012; Tappolet, 2009; Schwarz and Clore, 2007; Clore, 1994).

As many recognise, this influence can play a role in motivating weak-willed action (Tappolet, 2003; De Sousa, 1987; Bratman, 1979). This is because having our attention drawn towards emotion-relevant features of the situation may motivate us to act in accordance with that emotion's evaluative content, and this motivation may not always align with our evaluative judgements about what is best for us to do. This is intuitive: focusing my attention on what makes me mad may motivate me to seek revenge, but the means of revenge I become motivated to seek may be pernicious and ill-judged. This fits with the broader theory that emotions are closely connected to our action tendencies in general

(Moors and Fischer, 2019; Scarantino, 2017; Brady, 2009, 2013; Tappolet, 2009; Baumeister et al., 2007; Clore, 1994; Frijda, 1994).

Different explanations have been offered for how weak-willed action can be motivated in this way. De Sousa (1987) does so from a Davidsonian perspective. For him, emotions, understood as 'patterns of salience among objects of attention', are what 'tip the balance' of our evaluative judgements in favour of actions that are weakly supported by reasons. This is because, as we recognised above (and in previous chapters too), emotions can direct our attention towards emotion-relevant thoughts or environmental features, which may well be reasons in favour of acting in accordance with that emotion (see Brady, 2013). De Sousa claims this can cause us to make an error in reasoning, whereby our evaluative judgement about which action is best is formed purely on the basis of the subset of reasons our emotion draws our attention to. This may mean that this judgement is not made on the basis of all our considered reasons. By consequently doing what we think is best, we thus perform an action that is weakly supported on the balance of those reasons – we are weak-willed. However, this explanation presupposes Davidson's notion that weakness of will involves doing what we think is best yet getting that judgement wrong, an interpretation we rejected. De Sousa's account does not help us.

A similar yet alternative account is given by Tappolet, who like us rejects Davidson's internalist framework, stating that 'even though the agent surely judges that, in some respects, action x is better than action y, she does not wrongly infer that the akratic [weak willed] action is better than the envisaged alternative' (Tappolet, 2003, p.107). Instead, Tappolet claims that our emotions can motivate weak-willed action by influencing our attention such that 'the reasons in favour of the akratic action are in the foreground', by which she simply means we're *more motivated* to act on those reasons and perform the akratic (weak-willed) action, in a way that has no bearing on our evaluative judgments about what is best as De Sousa would suggest. [78] To illustrate this, Tappolet cites the case

[78]Tappolet (2003) stresses that she is not claiming that emotions *necessarily* play a role in weakness of will, just that they will often be a factor that explains it. This is also a view that is at odds with De Sousa, who claims that emotions are the 'best candidate' for explaining why we would act akratically in *any* given case.

of the adulterous lovers Francesca and Paolo in Dante's *Inferno*, specifically Francesca's deliberation about whether she should act against her better judgement and have sex with Paolo:

> It seems plausible that given Francesca's passionate love, her attention is focused on certain aspects of her situation—Paolo's charms, the expected pleasure of sexual intercourse with Paolo, and so on. More precisely, her attention will be focused on the positive traits of the akratic action. No wonder she will fail to [do what she judges best]; thoughts about danger or duty are surely not salient in her mind (Tappolet, 2003, p.105).

Francesca judges that refraining from her temptations would be best. But, as is characteristic of emotion, her lust directs her attention to reasons in support of giving in to it. Those reasons thus become particularly salient (recall in Chapter Five we claimed that this same salience can play a role in belief distortion too – see section 5.2). De Sousa (1987) would say that this salience causes her to erroneously judge that giving in to temptation is the best action available, even though the sum of her reasons says otherwise. However, following Tappolet, I propose instead that this salience will simply make the reasons in support of performing the weak-willed action more *motivationally potent.* In other words, these are the reasons she becomes most motivated to act upon and are thus most likely to become operative in her conduct. This will be compounded by the fact that the stronger reasons she has in favour of refraining are not taken into consideration to the degree they should be, since her lust is diverting her attention *away* from these. In being motivated in this way, Francesca is thus less likely to do what she thinks is best overall. Her lust motivates her weakness of will.

Of course, this isn't to say that emotions necessarily cause weakness of will – often our emotions accurately track what our reasons say we should do, and the actions we judge to be best. But cases like Francesca's show that often emotions can motivate actions that run contrary to this judgement, by making salient reasons for action that are highly emotion-relevant yet evaluatively weak. Those weak reasons are thus made motivationally potent, eclipsing the stronger reasons we have in favour of acting otherwise. This doesn't influence what we judge is best, as De Sousa would suggest, however it certainly influences what we're motivated to do.

Moreover, presumably the kind of influence that Tappolet highlights will commonly be found cases where our emotion is recalcitrant. If our emotion is in tension with how we take the world to be,

then the actions it motivates will inherit this tension, meaning what we become motivated to do will likely diverge from our judgements about what to do. If I feel fear despite believing that there is nothing to be afraid of for instance, the methods of escape or defence I'll be motivated to seek will therefore run contrary to my evaluative judgements about what I should be doing. Indeed, this is a feature recognised to be common to recalcitrant emotions in the literature (Döring, 2015; Brady 2009).

We can thus see how emotions can often play a motivational role within weak-willed action, and the mechanics of this motivation. In short: the influence of our emotion on our attention means emotion-relevant reasons for action become salient, and thus motivationally potent. These reasons, however, may be evaluatively weak, and so the course of action these reasons favour may run contrary to our evaluation of what is best to do - this is particularly likely to be true if that motivating emotion is recalcitrant. As such, what we're motivated to do may become detached from our better judgement, which is precisely the kind of idea that Mele proposes in his account of weakness of will. Applying this idea to weak-willed worry will give us way of understanding the motivational mechanisms involved, i.e. how our recalcitrant anxiety motivates us to engage in it.

6.3.3 Weak-willed Worry

Notice that the above considerations are parasitic on a more general explanation of how emotions motivate action. Tappolet's claims are not restricted to cases of weak-willed action; they show how emotions motivate us to act in a general sense, something which she then uses as an explanation for how emotions can play a role in weakness of will. That is, in drawing our attention towards emotion-relevant contents, our emotion is drawing our attention towards reasons in favour of acting in accordance with that emotion. If those reasons are ones we take to be weak, the motivated action may very well be weak-willed. If those reasons are ones that we judge to be the strong, however, the motivated action may very well be perfectly rational.

We can take the same approach here when showing how the kind of recalcitrant anxiety I've identified motivates weak-willed worry. In applying Tappolet's claims to the case of weak-willed worry, then, what we actually get is a general explanation for how anxiety motivates worry, one which can then be applied to weak-willed cases. This will allow us to see how recalcitrant anxiety motivates us to worry in a way that diverges from our better judgement, and thus the kind of motivational role that anxiety plays in such cases. In doing so, it will also elaborate the background claim we've been working with throughout the thesis, namely that anxiety is what motivates worry.

In the case Tappolet gives, Francesa's lust directs her attention towards thoughts about emotion-relevant features of the situation, such as the pleasurable aspects of being with Paulo. These are reasons in favour of her performing the weak-willed action. In the case of anxiety then, by the same token our emotional state will direct our attention towards negative thoughts relevant to that anxiety: thoughts about the possible threat, possible negative consequences that will ensue if it occurs, what it would be like to experience such possibilities, etc. We recognised this in previous chapters (see Chapter 5, section 5.2 in particular). Crucially, these thoughts about negative, anxiety-eliciting features of the situation are *reasons for worrying*, since worry is how we respond to the prospect of such negative possibilities; that is, on our account, worrying is how we attempt to determine how to deal with such possibilities or gain epistemic clarity on them. That missing the deadline will possibly result in me being fired from my job, for instance, is a reason for me to worry about missing the deadline. This proposal fits with the more general claim that emotions will draw our attention towards reasons in favour of acting in accordance with them.

In drawing our attention towards these thoughts, then, we can say that our anxiety is drawing our attention towards reasons for worrying. These reasons thus become salient to us, motivating us to act on them and respond accordingly by worrying. Moreover, it makes sense to suggest that the intensity of the worry motivated will be prescribed by the intensity of the anxiety. A highly intense anxiety essentially signals to us that there is an urgent possibility of threat that we must pay attention to (Vazard, 2022; Kurth, 2018a, 2018b ; Miceli and Castelfranchi, 2005). As such, as we've seen in previous chapters it will capture more of our attention, potentially identifying more possible negative

consequences or scenarios and thus generating greater salience than a more moderate anxiety would (see Chapter 4, section 4.1.2; Chapter 5, section 5.3). Thus, the more intense the anxiety, the more salient our reasons for worrying are, and potentially the more reasons for worrying we have. This will prescribe, and motivate, a more intense worry. This fits with our claim in Chapter Four that the intensity of worry is determined by both the degree of attention we commit to it and the intensity of the anxiety motivating it.[79]

As noted above, this therefore gives us an explanation of how anxiety motivates worry in a general sense. In cases of weak-willed worry, however, as proposed this motivating anxiety is *recalcitrant*, in the sense that it has not tracked the change in perspective that comes from our judgement that what we're worrying about is not as threatening as we thought. This means that our anxiety remains at the same intensity, where this intensity ought to have been adjusted. As such, it will continue to make negative thoughts about the threat salient to the same degree, meaning it continues to make salient reasons for worrying at the intensity it prescribes. These reasons continue to be as motivationally potent, and so we continue to be motivated to worry at that prescribed intensity.

This happens despite our having made the key judgement 'I shouldn't worry in this way'. That is, we now think there are *stronger* reasons in favour of adjusting the intensity of our worry or ceasing it entirely, and so this is what we think we should do, i.e. what our *better judgement* dictates.[80] Yet given that our recalcitrant anxiety is continuing to make negative thoughts about the threat salient, we neglect to pay appropriate attention to these stronger reasons, meaning they aren't as motivationally potent as the thoughts our anxiety is drawing our attention to. In the same way that Tappolet (2003) states that 'thoughts about danger and duty are not salient to [Francesca's] mind', thoughts about the irrationality of our worrying are not salient to ours. Indeed, whilst worrying it can be difficult to take seriously the reasons why we should stop worrying or worry less - the judgement

[79]This explains why, as claimed in Chapter Four (see footnote 43) the elements that determine the intensity of worry (intensity of anxiety and amount of attention we pay to it) are not independent in the way one might assume: the intensity of anxiety that motivates our worry will directly determine how much attention we pay to that worry through the salience it generates in this way.

[80]Of course, this assumes that what we judge is best to do, and what we judge we should do, tracks what we judge our reasons say is best.

that what we're worrying about is highly unlikely or not important, for instance.[81] This means it is the weaker reasons that are most likely to become operative in our conduct, meaning we continue to worry in the same way, at the same intensity. In doing so, we're intentionally worrying in a way that we've decisively judged that we shouldn't, because of the motivation generated by our recalcitrant anxiety. Our worrying, therefore, is weak-willed.

As we can see, anxiety motivates weak-willed worry in the same way as it motivates any worry. The reason it motivates us to worry in a way that goes against our better judgement is because it is recalcitrant. The root of the error at stake in weak-willed worry, then, is not any kind of malfunction in our motivational or evaluative states themselves. Our anxiety motivates us to worry at a certain intensity, and in worrying in that way we're pursuing the course of action we're motivated to do, even though doing so is weak-willed since we judge we have stronger reasons for acting otherwise. Rather, the root of the issue is, a la Mele, the *disconnect* between our motivational and evaluative states, which is inherited from the failure of our motivating anxiety to respond appropriately to how we take the world to be.

We thus have a plausible explanation for the mechanisms at play in weak-willed worry, which can be illustrated in the following way:

(1) At time t1 you worry about p at x intensity.
(2) At time t2 you judge there is a rational failing withing your worrying, and thus that p is not as threatening as you thought at t1.
(3) In light of (2), you make the judgement 'I shouldn't worry in this way (at intensity x)'.
(4) You continue to worry about p at intensity x
(5) (4) is motivated by a recalcitrant anxiety, a recalcitrance that comes from its failure to track the change in perspective across t1-t2.

We can illustrate this picture with an example. Take the case of worrying about missing the work deadline we looked at earlier. Your worry is highly intense, but at some point you come to judge that the possibility of missing the deadline is actually extremely low - maybe you realise that the date is actually further away than you anticipated, meaning you have more time than you thought to get the

[81]Again, this is a similar claim to the one we made in Chapter Five, where we said that salient imaginative content can lead to us ignoring reasons why the worried about event won't happen, thus leading to availability bias within our worrying.

work done. You thus judge that your worrying is ill-informed – the possibility of missing the deadline is not as threatening as you thought – and so you judge 'I shouldn't worry about missing the deadline this way'. This places a demand on you to adjust the intensity of your worrying accordingly.

However, suppose your anxiety remains as intense as it was before making this judgement – it is now recalcitrant. What this means is that, as is characteristic of emotions in general, your anxiety will continue to draw attention towards thoughts about the possibility of missing the deadline and what the consequences of this might be. In doing so, it continues to make these thoughts salient to you, meaning it continues to make salient reasons for worrying at the intensity it prescribes. This salience makes these reasons motivationally potent, causing you to neglect to pay attention to the stronger reason you now have in favour of worrying less, namely your new judgement that missing the deadline is extremely unlikely. In acting in accordance with that motivation generated by your recalcitrant anxiety, you continue to worry at the intensity prescribed, contrary to your self-reflective judgement 'I shouldn't worry about missing the deadline in this way'. By virtue of worrying being a mode of reasoning that you engage with intentionally, your worrying is weak-willed.

Crucially, this demonstrates how the cases of worry I'm describing as weak-willed do indeed qualify as genuine instances of the phenomenon, since they map onto the framework of weak-willed action we adopted from Mele. As Mele says, weakness of will involves performing an action that we've judged we shouldn't through the operation of a motivational force that runs contrary to our evaluative judgments. That is, what we're motivated to do runs contrary to what we judge we should do. We can now see that this is what happens in cases of weak-willed worry: our recalcitrant anxiety makes it such that we're motivated to continue worrying at the intensity that anxiety prescribes, despite our self-reflective judgement that we shouldn't be worrying in such a way.

A merit of this this account is that it captures the ubiquitousness of weak-willed worry. The core claim I've developed is that weak-willed worry is motivated by recalcitrant anxiety - an anxiety that occurs in tension with how we take the world to be. And as noted earlier, this kind of tension seems to be somewhat characteristic of anxiety, something recognised within the literature on it (Levy, 2015; Vazard, 2022). Indeed, when considered against the backdrop of the wider spectrum of

emotions, anxiety in particular seems to be often at odds with how we take the world to be. Perhaps this is because of its responsiveness to *uncertainty*, a somewhat amorphous emotional stimulus. Indeed, as Fritz (2021) recognises, this means that there should be a countless number of things that we could be anxious about at any given time, given the limitless number of possible negative uncertainties we face. But to a notable extent it seems that anxiety simply often doesn't work in this way: the occurrence of anxiety is often unrelated and unresponsive to epistemic or circumstantial considerations in the way that our emotions tend to be. Many of our anxieties have their roots in the deep-seated cares and values that are simply part of our individual makeup and will often have sub-personal roots too - the experience of past trauma, for instance. As discussed in Chapter Three (see section 3.2.2-3.2.3) and Chapter Four (section 4.4), the normativity and rationality of these highly subjective interpersonal factors is an area of rational evaluation that I've purposefully chosen not to pursue. But what this means is that what we're anxious about may *often* be at odds with how we take the world to be, meaning often our worries may become weak-willed in the way I've described. This explains the fact that weak-willed worry is far from any kind of arcane philosophical possibility. Rather, it is a real and familiar phenomenon to many of us and that occurs often for some.

Of course, the cases of worry I've described as weak-willed may seem disanalogous to some of the paradigmatic instances of weakness of will we've considered, such as smoking a cigarette, eating another slice of cake, or sleeping with someone we shouldn't. There's one clear reason for this. The latter cases, as with many cases of weakness of will, seem to involve performing a weak-willed action that is, in some way *desirable*. In Tappolet's example, for instance, Francesca's lust draws her attention towards Paulo's charms, the expected pleasure of intercourse, etc.; these, we might say, are desirable aspects of the weak-willed action that act as the motivationally potent reasons we act on. And even though emotion may not be involved in such a case, the same is true of smoking a cigarette; the satisfaction we expect from smoking the cigarette is something we desire. This doesn't translate to the case of weak-willed worry. We've seen that we're motivated to continue worrying because our recalcitrant anxiety draws our attention towards negative thoughts about the threat, which it motivates us to address by worrying at the prescribed intensity. But on no level is this motivation rooted in any

desires we have. Does this disanalogy cause a problem for our claim that the cases of worry we're considering are genuine instances of weakness of will?

I don't think it does. Desire, whilst often clearly an important part of what motivates us to act against our better judgement, doesn't seem to be a necessary requirement for doing so. We can certainly be motivated to do something that we don't desire *and* we don't think is best. Think back to Mele's case, for example; John doesn't necessarily *desire* to refrain from pricking his finger, and he's not giving in to any kind of temptation in the way that other cases are often framed. He simply refrains out of fear or squeamishness, despite judging that it would be best to go through it. Similarly to weak-willed worry, his fear is a motivational force that moves him to act contrary to what he judges best, not some desirable characteristic about that action. Take another case: suppose you are a musician who is backstage, an hour away from playing to the largest crowd of your career. However, you suffer from crippling stage fright. Ten minutes before curtains, your nerves become too much, and you flee from the venue. Here you're clearly weak-willed; you certainly judge that performing is a better option than fleeing, and yet your feelings of nervousness motivate you to flee. More importantly, though, you don't *desire* to flee; you know that doing so will bring about feelings of shame and regret within you. Quite the contrary, you desire to play your music for the audience. You simply don't have the courage to do so. Again, this shows us that desire for the weak-willed action is not a necessary component of weakness of will. Given this, I think the cases of worry I've described thus still qualify as genuine instances of it.

6.3.4 Empirical Support

Not only is this account supported by more general theories of emotion as we've seen, but it also enjoys support from the empirical and psychological literature on 'pathological' worry we've cited in previous chapters (see Chapter 5, section 5.3). Many accounts within this literature look closely - as we have - at the role anxiety plays, specifically the way it influences our attention. Hirsch and Mathews (2012), for instance, claim that it's because of the way anxious thoughts capture and occupy

our attention that worry often has a persistent phenomenological character, whose content is difficult to ignore. Similarly, Tallis and Eysenck (1994) propose that whilst worrying, emotional arousal can 'increase the narrowness of attention' which renders negative thoughts about threat salient, which, combined with a hindrance of our 'attentional mechanisms', contributes towards the maintenance of pathological worry. Eysenck et al. (2007) also discuss the way that anxiety can significantly disrupt our attentional control systems, and how this can be a central element within 'pathological' worry. These accounts all fit with the claims I've made and support my proposal that weak-willed worry is motivated by the way our attention is influenced by our recalcitrant anxiety, drawn towards thoughts about the possible threat. It also helps shed light on why it can be difficult to cease or adjust our worrying in these cases too.

Also supportive of our account is Davey's (2006) 'mood-as-input' theory of pathological worry. Based on findings from studies ran by Davey and colleagues, this essentially proposes that worry is often preserved and maintained by the worrier treating their negative mood or affective state as an indicator that worry is still demanded, even if this isn't the case (Startup and Davey, 2001; 2003). That is, worriers will often treat the fact that they are anxious or in a low mood as suggestive that they have something to worry about, meaning their worry is maintained in cases where it should have abated. This view supports my earlier claim that the intensity of anxiety will prescribe and motivate a commensurate intensity of worry, perhaps contrary to our better judgement. Recall that we claimed that when our anxiety fails to track the change in perspective we get from the self-reflective judgement we make, it continues to signal to us that there is a threat that demands worry of a given intensity, even though we've judged we shouldn't worry in such a way. This is essentially Davey's proposal - it makes sense to suggest that to some degree we'll treat the fact that we're still highly anxious as an indicator that a highly intense worry is still demanded. And this will feed into the motivation generated by our recalcitrant anxiety which moves us to continue worrying at the intensity prescribed, contrary to our judgement that we should cease worrying or adjust it accordingly.

6.4. The Irrationality of Weak-willed Worry

We now have in place an account of weak-willed worry. To finish, I want to show how it's irrational. Of course, at least from an internalist perspective, such cases are necessarily irrational since they involve us initially judging that our worrying is ill-informed or recalcitrant. So, at least according to our judgement, our worry will already be irrational to begin with. What I want to now show is what is irrational about the weakness of will that can be exhibited in our worrying, where we worry in a particular way contrary to our better judgement. Unlike the other forms of irrational worry I've identified in previous chapters, I won't posit any requirement of rationality that's violated in cases of weak-willed worry. This is simply because whatever requirement that governs such cases is presumably simply the same requirement that governs all our actions i.e., the requirement not to be weak-willed.[82]

I propose weak-willed worry involves irrationality regardless of whether you subscribe to a 'reasons-responsiveness' account of rationality, or an 'internal coherence' account of rationality. I'll not here to commit to either, but rather merely outline how this is so on either picture. The former explanation is obvious; reasons-responsiveness accounts of rationality say that rationality requires that we respond appropriately to reasons (for example, see Kolodny, 2005; Parfit, 2001; 2011). This entails acting on the strongest reasons we have available. In engaging in weak-willed worry, we fail to meet this demand. Through continuing to worry despite judging that we shouldn't be, we're not responding appropriately to reasons, since continuing to worry in the way we are is weakly supported by them. That is, the reasons why we continue to worry in a way we've judged to be problematic are merely the thoughts about the possibility of threat that our anxiety is directing our attention towards. Our attention is thus fixed on these thoughts, which are our reasons for worrying. Yet we have stronger reasons in favour of ceasing worrying in the way we are – we judge that worrying in that way is

[82]It could be argued that this is also true of the requirement that is violated by ill-informed worry, i.e. 'when worrying about p, our worry must be informed by rational beliefs about p' - indeed, I recognised that this requirement isn't unique to worry, since much of what we do is subject to the requirement that it is informed by rational beliefs (see Chapter Three, footnote 39). However, what substantiates this requirement of rationality *is* unique to worry – violating it makes our worrying irrational in a very specific way. This is not the case with weak-willed worry, as we'll see; what makes the weakness of will exhibited in weak-willed worry irrational is the same as any other case of weakness of will.

irrational, and thus that what we're worrying about is not as threatening as we thought. In worrying, our conduct is thus not adequately responsive to reasons. This makes us irrational.

An internal-coherence account of rationality, on the other hand, states that rationality demands that we keep our attitudes consistent with one another (for example, see Broome, 2007; 2013). We can see how weak-willed worry entails a failure of rationality in these terms by appealing to Broome's (2013) notion of the 'enkratic principle', which states that we should intend what we believe we ought to do. So, if we believe that we ought to y, then rationality demands of us that we intend to y; the enkratic principle thus demands consistency between our intentions and our beliefs. When we perform weak-willed actions, then, we're irrational insofar as the intention-in-action contained with our weak-willed action does not correspond with our judgements about how we ought to act - this is just another way of saying we're acting contrary to our better judgement. The locus of irrationality is thus a conflict in our attitudes. Indeed, Broome states that the enkratic principle just is a requirement that we're not akratic, which as we know is simply another way of describing weakness of will.

To engage in weak-willed worry is irrational on this view. This is because the directed reasoning involved in worrying manifests an intention in action, as we saw in Chapter Two, which conflicts with our judgement that we shouldn't be worrying in the way we are. In other words, by virtue of being engaged in worry at intensity x despite judging that we shouldn't be, we have an intention-in-action to worry at intensity x, and a judgement that we shouldn't be worrying at intensity x. This amounts to a conflict within our attitudes, making us irrational.

One might oppose this by suggesting that, in fact, when we're engaged in weak-willed worry what we actually intend to do is cease worrying in the way we are, which would correspond with our judgement 'I shouldn't worry in this way'. Perhaps, despite the worrying we're engaged with, we harbour an intention to stop. However, as we saw in Chapter Two, when engaged in worrying we do so *intentionally* – at the time of worrying the content of our intention-in-action is therefore to be engaged in worry. And so, when we're engaged in weak-willed worry, our intention (in action) is just to be engaged in that very reasoning. This intention is thus one that is inconsistent with the judgement we've made 'I shouldn't worry in this way'. Perhaps whilst we're not engaged with worry our

intention changes, namely to an intention not to *continue* worrying, but at this point we're not engaged in worry anyway. Whether we're rational or irrational at this point is thus of no concern to us. Thus, as described, whilst engaged in weak-willed worry the content of our intention (in action) is in conflict with our judgement about how we ought to act. This amounts to a conflict within our attitudes, making us irrational.

As we can see, on both a reason-responsiveness account of rationality and an internal coherence account of rationality, weak-willed worry is irrational. It is worth noting that these ascriptions of irrationality can be made despite there being sub-personal mechanisms at play in weak-willed worry. One might very well argue, for example, that since it is our anxiety that generates salience and ultimately a motivation to worry, something that the worrier themselves is not responsible for, we should give the worrier some slack when it comes to determining their rational status. How, one might ask, can we be accused of irrationality if our conduct is partially influenced by factors beyond those we can control? However, I'd argue that despite this the agent is still acting *intentionally*, even though there are causal mechanisms at play in motivating them. Whilst such mechanisms might allow us to be more charitable in our ascriptions of irrationality, they do not vindicate the worrier entirely.

To illustrate, we can again compare weak-willed worrying with the case of the smoker who is trying to quit, and yet reaches for a cigarette. Obviously, there are sub-personal causal mechanisms at play in their reaching for a cigarette - nicotine addiction is mainly neurological. However, this doesn't totally get them off the hook, so to speak. We'd still say their act of smoking, insofar as it's intentional, is a paradigmatic example of weakness of will, since they decisively judge that they should refrain and yet, exercising total agency, reach for a cigarette. They are still *acting* contrary to their better judgement. Indeed, an appeal to sub-personal causal mechanisms in order to vindicate weak-willed agents of irrationality comes with a cost, namely the agency of the weak-willed agent. Such deterministic explanations may portray the agent to be rational, but in doing so makes them less agential than is accurate. In other words, such a perspective buys rationality at the cost of agency. As such, by virtue of the need to maintain accountability on the part of the agent, as well as their agency,

the weak-willed worrier is thus still irrational.

Conclusion

In this final chapter I've given an account of a third form of irrational worry, one which stands apart from the other forms of irrational worry outlined in previous chapters, in the sense that it is through the worrier's capacity to be self-reflective that weak-willed worry occurs. Without this capacity and without the reflective perspective it gives us, there would be no 'better judgement' for our worrying to run contrary to do. This separates weak-willed worry from the other forms of irrational worry I've identified in previous chapters – these may occur without the worrier taking any such self-reflective perspective.

Our worrying becomes weak-willed when we fail to adjust it appropriately in light of our judgement that there's a rational error within it, carrying on worrying in the same way, at the same intensity, against our better judgement. My proposal is that this happens because the anxiety that motivates that worry is recalcitrant, in the sense that it can fail to track the change in perspective that comes from judging that what we're worrying about is not as threatening as we thought. This means it continues to motivate us to worry at an intensity that we now judge to be problematic. This proposal fits with Mele's account of weakness of will, which states that weakness of will can be explained by the idea of our motivational state diverging from our better judgement.

This means, then, that the question of why exactly we'd ever engage in weak-willed worry turns on some more fundamental questions: why do emotions occur in tension with how we take the world to be? Why do recalcitrant emotions occur? Or, more pertinently to the case of worry, why do we feel anxious about things we don't believe pose us any real possibility of threat, such as the possibility of leaving the stove on when we've left the house? This is to some extent addressed in recent work on anxiety (Vazard, 2022; Kurth, 2018a, 2018b; Miceli and Castelfranchi, 2005). However, given the evidently anomalous nature of anxiety within the broad spectrum of emotions and affective states, there's still much to be learnt about it. Since, ultimately, worry is something we *do*

that is motivated by how we *feel*, shedding light on the nature of anxiety will help shed important light on the why the forms of irrational worry I've outlined over the course of the thesis might occur, and, perhaps more importantly, how they can be managed and coped with.

Hopefully this thesis has brought us further towards understanding what worry is, and the circumstances under which it is rational and irrational. The first part of it developed a picture of the nature of worry and what kind of function it serves, as well as providing insight into the level of agency involved in worrying. Here I argued that worry is a form of affectively motivated cognition that serves a function of processing anxiety, one we engage with intentionally. Then the focus turned to identifying ways in which worry can be irrational, and how some internal mechanisms within worry might generate such forms of irrationality. This allowed us to see clearer what exactly it means to worry irrationally, thereby shedding light on the boundaries of rationality within worry and the conditions under which worrying can be rationally problematic. The forms of irrational worry identified were as follows:

(1) worry can be *ill-informed,* meaning the beliefs that inform it are irrational, a form of epistemic irrationality which causes practical irrationality within our worry itself. Our account of this allowed us to reveal the following requirement of rationality that worry is subject to: *when worrying about p, our worry must be informed by rational beliefs about p.*

(2) worry can be *recalcitrant*, a form of practical rationality in which our worrying is disproportionately intense relative to how threatening we believe the worried about event is. Our account of this allowed us to reveal the following requirement of rationality that worry is subject to: *when worrying about p, the intensity of our worry must be in proportion to our appraisal of the level of threat posed by p.*

(3) worry can be *weak-willed*, meaning the way we're worrying runs contrary to our better judgement. Our account of this showed us that worrying can count as a genuine instance of weak-willed or akratic action and is irrational when it is.

The upshot of the accounts I've given should be a clearer understanding of what worry is, what we're doing when we worry, why we worry, and when worrying is rational and irrational. As stated in the introduction, the aim was by no means to provide a fully exhaustive account of when worry is and isn't irrational. As should now be evident, there are a vast number of moving parts and mechanisms within worry, spanning many different elements within our cognitive, affective, doxastic, and motivational states, and these all interact with each other in often complex ways. As such, there are likely going to be more ways that worrying can be irrational than I've been able to identify and discuss here, across various axes of rational evaluation. But I'm happy to yield this: as stated, what this thesis has aimed to do is simply bring us further towards understanding worry and the boundaries of rationality within it, bringing these into focus in a way that hasn't happened before within the relevant philosophical discussions. I'd argue that it has been successful in this aim. Furthermore, given how problematic worrying can be for some, and how excessive worry is often regarded as a core feature of some mental health issues such as anxiety and depression (in particular in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V), American Psychiatric Association, 2022), the conclusions drawn within this thesis may very well have potential for application outside of philosophy. In particular, I believe the discussions within have relevance to debates within clinical disciplines such as psychiatry and psychotherapy. At the very least, knowing more about what worry is, why we do it, and when it is and isn't appropriate can only be beneficial in many respects.

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