6

The Task of Explanation (and the Beginnings of Treatment)

3e Psychopathology, as developed across previous chapters, conceptualizes mental disorders as dysfunctional patterns in sense-making. These patterns are seen to be constitutionally complex multi-scale process structures spanning brain, body, and environment. Further, these patterns are deeply entwined within the striving of meaning-driven individuals, turning their very striving against them, and are defined as disorders/dysfunctions on this basis. The intent of the current chapter is to begin extending 3e Psychopathology from a conceptual model of mental disorder alone, to a burgeoning epistemological framework for the study and treatment of psychopathology. This will be achieved by exploring what explanatory strategies consilient with the 3e conceptualization may look like. In other words, the current chapter asks the question 'if this is what mental disorders are, how then should we seek to explain them?'. This question will be explored at both research and clinical levels. First however, it is worth briefly considering what exactly an explanation is and on what basis I am distinguishing between research level and clinical level explanations. Following this, Sect. 6.2 will consider the development of explanatory theory under a 3e

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Psychopathology perspective. Section 6.3 will then consider the role and development of tailored explanations—i.e., formulations—in clinical practice.

6.1 What Does It Mean to Explain?

Explanation, generally speaking, is a complex and contested epistemological and practical task. In this section I briefly assay some important recent insights about explanation relevant for discussion in later sections. I also justify why I make a distinction between explanation as undertaken by researchers and explanation as undertaken by clinicians. While it is not my intention to address the question 'what does it mean to explain?' in all of the complexity that such a question entails, it is worth briefly expanding on what I mean by explanation in this context.

An explanation, on my view at least, is an explicit or implicit postulation—usually in the form of a set of premises, a model, a theory, a narrative, or a causally informative classification—that *accounts* for the origin or continued existence of a *phenomenon* or set of *phenomena*. This understanding of explanation draws on the philosophical work of Haig (2014) and Thagard (2017). By 'account' I mean 'to make sense of', 'to make less surprising', or 'to offer insight into the workings of'. By 'phenomenon' I mean a regularity or pattern inferred from our data and observations about the state of the world (Bogen & Woodward, 1988). For example, within psychopathology we may consider the phenomena of social anxiety, low mood, or auditory hallucinations. As examples from physics we might consider the phenomena of red-shift in the light coming to earth from stars or the gravitational attraction between objects with mass.

It is also important to note that, in being inferred, phenomena are themselves contested and socially constructed. In other words, deciding how to best delineate and describe a phenomenon so that we might then explain it is an important process in itself (Haig, 2014). For example, the description and construal of gravity—via a complex interplay between available data, technology, theory, and social context—has changed and developed across time from early natural philosophy, through Newton, to Einstein and modern debate (Papaspirou & Moussas, 2013). The things

we seek to explain, across the sciences, are moving and contested targets; we do not seek to explain the world so much as our ever-developing representations of it (Bokulich, 2018). This is important to recognize for our purposes as it again draws attention to the importance of conceptual and theoretical work, including analysis and refinement of the things we are trying to explain, as a vital and normal part of scientific enquiry (Bringmann et al., 2022; Wilshire et al., 2021).

Another important point when considering the task of explanation within psychopathology, is that there is a lot of variation in *how* we can go about explaining human behavior and experience (Bechtel, 2009a; Thagard, 2017). Explanations can take many different forms and be targeted at different scales of the brain-body-environment system. To list multiple examples: We can present a narrative that provides a context and makes it apparent in folk-psychological terms why a behavior is engaged with (Johnstone et al., 2018). We can identify dispositions of character or biology that predispose people to certain patterns of engagement with the world (Vanderbeeken & Weber, 2002). We can map the dynamical relationships between relevant phenomena/symptoms and contextual factors as a network (Borsboom et al., 2018). Or we can delve into the brain and theorize about the causal relationships between neural or genetic correlates of certain behaviors and experiences (Insel & Cuthbert, 2015). There are clearly lots of different ways to explain psychopathology. One of the central aims of this chapter is to consider what guidance 3e Psychopathology has to offer when we are faced with so many options.

A final point that I wish to stress is that explanation is always a pragmatic task, undertaken with particular purposes and with particular intended audiences (Potochnik, 2016, 2017). Such variation in explanatory purpose and context brings with it variation in what makes for a good or bad explanation, and therefore how we should best go about explaining. One vital distinction in terms of our purpose for explaining in psychopathology, is whether we are trying to explain a general across-person pattern of distress (e.g., depression), or whether we are trying to explain one person's particular pattern of difficulty (e.g., one person's depressed experiences and other challenges they may face). The former sort of explanatory enterprise is commonly undertaken in a research context, while the latter is usually undertaken within a clinical context in

order to inform treatment decisions. These different contexts bring with them different access to investigatory tools, different explanatory purposes, and different audiences. As such, how we go about the task of explaining in these different contexts is related, but is, and should be, different.

It is based on this distinction that I have chosen to structure the rest of this chapter, with Sect. 6.2 considering explanation in a research context, and Sect. 6.3 considering explanation in a clinical context. While I will seek to avoid such philosophical language, we can think about this distinction as one of 'token' (the individual case or instance) versus 'kind' (a wider classification to which we can meaningfully say that an individual case of mental disorder 'belongs'). As discussed in the previous chapter though, and as will be further discussed in the current one, 3e Psychopathology views this kindship relation as based on similarity rather than on common cause. On the 3e view, mental disorders are inherently messy and contextual things, resulting in the heterogeneity of individual presentations and often-contestable diagnoses/kindship relations. As will be discussed later, this means that individual clinicians cannot simply apply explanatory theory from research in a wholesale manner when seeking to explain an individual's difficulties. Instead they must craft individualized explanations, drawing on wider explanatory theory in a select and reasoned way. In sum, the explanation of disorders or their component phenomena as typically undertaken by researchers and the clinical explanation of token cases are separable tasks that will require different methods, tools, and styles of explaining. It is for this reason that I have chosen to discuss them separately.

6.2 Explanation for Researchers

In this section I will first outline how 3e Psychopathology necessitates a commitment to explanatory and methodological pluralism. More than any one particular method of enquiry, a diversity of research methods and a principle of inter-methodological respect is required if we are to begin to collectively sketch out the constitutional structures of mental disorders as conceptualized under 3e Psychopathology. Based on an

implicit biological essentialism, decades of disproportional funding channeled towards biologically focused research has left behavioral, experiential, and ecologically focused methodologies underfunded and disempowered. I will therefore argue that greater emphasis must be given to such methodologies. However, I will also argue that there is a clear need for research focused on smaller scales of enquiry such as genetics and neurobiology to continue. Whether such research counts as 'reductionistic' or not does not depend on the methods themselves, but on how we understand and treat the findings. This will lead to a brief discussion on the vital integrative role of theoretical researchers within the sciences of psychopathology under the 3e framework. Following this I will then briefly review some current approaches to targeting explanations and organizing research findings in psychopathology, highlighting where these approaches falter under a 3e Psychopathology perspective. I will then outline the Relational Analysis of Phenomena [the RAP] as one plausible approach to the development of explanatory theory that accords well with the 3e conceptualization of mental disorder (Nielsen & Ward, 2020).

Gradualism, Explanatory Pluralism, and Methodological Pluralism

As discussed across previous chapters, 3e Psychopathology makes a variety of theoretical and conceptual commitments. Some key points of difference between the 3e concept developed and *status quo* approaches, for example, are the open commitments to moderate externalism, anti-essentialism, and a contextual/relational understanding of dysfunction. In other words, under 3e Psychopathology, mental disorder pertains to the functional status of the relationship between the sense-making processes of the organism and its context. Further, the causal structures that support continued engagement with dysfunctional sense-making are seen to span brain, body, and environment. Mental disorders are therefore not merely 'in people' but *between* people and the world they are embedded in, as well as spread across it. The ramifications of such commitments for the task of explanation are hard to overstate because, compared to an

often assumed biologically or psychologically essentialist view, the very nature of what we are seeking to explain is changed. Under 3e Psychopathology there is an anchoring of the explanatory target to the scale of the individual making sense of and engaging with their environment, and the network of causal factors maintaining the dysfunctional behavior is presumed to be dispersed and complex. Moreover, the relationship between individual instances of a disorder and a wider diagnostic category to which it can be said to belong is presumed to be variable—i.e., the kindship of instances of mental disorder to a diagnostic category is defined by *similarity of structure* rather than *sameness of cause* or *similarity of symptoms*. Under such a view, heterogeneity is no longer necessarily a problematic artefact, but should perhaps be considered a feature of the subject matter that needs to be accounted for (Nielsen, 2022b). These various commitments, and others inherent to 3e Psychopathology, dramatically change what the task of explanation will look like for researchers.

For a start, on this view we aren't just looking for one 'nugget of truth' which will explain a mental disorder. Rather than a moment of discovery like the well-known myth of Newton and his apple, we would expect a more gradual process of knowledge gathering and explanatory progress. This view can be referred to as *gradualism*. Under the view provided by 3e Psychopathology the task of explanation will represent a gradual and dispersed process where researchers from across the globe slowly work to reveal the network of mechanisms that constitute the causal structure of a mental disorder. Instead of one paradigm defining discovery then, coming to understand a mental disorder will probably be much more like a family gradually assembling a tabletop puzzle—arguing about which piece goes where and what approaches to take, but ultimately collaborating and working on different areas to slowly reveal the image.

Where this puzzle metaphor potentially falls down, however, is that instead of developing a single theory—e.g., the X theory of depression—we will likely need multiple explanations that each focus on different mechanisms in the wider disorder structure and how they operate. Rather than somebody developing a successful explanation of depression as a whole, we would instead expect smaller scale explanations to be developed, mechanism by mechanism. As hypothetical examples, we might

see theories emerging at a neurological-level that concern how difficulties experiencing pleasure relate to difficulties sleeping, or at a psychological/ecological-level regarding how the changes that depressed people make to their environments may actually contribute to the perpetuation of their low mood.[1] Moreover, not all mechanisms recognized in such a collection of explanatory theories may be relevant for all individual cases of a disorder. Due to the fuzzy nature of the kind concept, certain mechanisms may be playing a greater role in individual instances of disorder than in others.

3e Psychopathology demands a comprehensive multi-scale and constitutionally minded view, consisting of brain, body, and environment. This aligns with the empirical evidence that the causal factors at play in mental disorders are 'dappled' across the various scales of enquiry (Kendler, 2012b, 2019). In the face of this complexity it seems nigh on impossible that any one approach to studying mental disorder will be sufficient to warrant abandoning all other methods. Something similar can be said for any one explanatory model of a particular disorder. The likelihood that a single superior explanatory model of any given disorder will emerge that accounts for all useful and interesting facets of that disorder, to the point that it warrants ignoring all other points of view, seems incredibly low. The complex and emergent nature of mental disorder recognized by 3e Psychopathology therefore commits it, not just to the classificatory pluralism discussed in the previous chapter, but also to methodological and explanatory pluralism as argued in Chap. 4. Put simply this refers to the respective ideas that there are—and likely always will be—many ways to both study and model mental disorders, and that we should seek to explore these many ways rather than unite behind a single approach (for parallel arguments see: Clack & Ward, 2020; Hawkins-Elder & Ward, 2021; Jerotic & Aftab, 2021). Such pluralistic ideas are well discussed in related areas and wider philosophy of science (Brigandt, 2013; Chang, 2017; Mitchell, 2002; Sullivan, 2017; Veit, 2020; Wegerhoff, 2022; Wegerhoff et al., 2020, 2022). The conceptual view afforded by 3e Psychopathology then, strongly suggests that the epistemological health of the wider sciences of psychopathology will be enriched when a

[1] This last example is inspired by Krueger and Colombetti (2018).

diversity of research methods is utilized and genuine inter-methodological respect is normalized.

Efforts such as 'the decade of the brain' (Jones & Mendell, 1999), biologically essentialist public communications by major bodies such as the American National Institute of Mental Health ([NIMH]; Insel et al., 2010), pharmaceutical advertisements endorsing chemical understandings of mental disorder (Leo & Lacasse, 2008), and the general excitement over the successes of neuroscience and its amazing technologies, have all contributed to a social landscape that facilitates the funding of brain-focused research. Mental disorder however, is a *psychological* phenomenon (Miller, 2010). Under the 3e view, such psychological phenomena are body involving, but are also world and history involving. To equate mental disorder with brain disorder from this view is therefore a gross de-contextualization, as discussed in previous chapters. If we are to truly come to understand these complex and heterogeneous structures we call mental disorders, then there is a clear need to study them from multiple angles—i.e., at the scales of brain, body, development, and environment (and any other that can add to our understanding). As discussed in Chap. 3, authors such as Fuchs (2017) have argued well for "…a polyperspectival approach" (2017, p. 276) under an enactive understanding of psychopathology, albeit with particular focus on the importance of lived-experience and phenomenological analysis. The 3e Psychopathology framework developed here accords with such arguments—experience focused methodologies have much to offer our understanding of psychopathology. More than any one kind of research methodology however, 3e Psychopathology endorses pluralism. As I have argued across this book, an embodied, embedded, and enactive view of human functioning can help us makes sense of and conceptualize mental disorders. However, this in no way means that only research methods grounded in such a view of human functioning have anything useful to offer for our understanding of mental disorders. Indeed, if mental disorders are as complex as the current analysis suggests, then we cannot afford to be picky. We should be open to any perspective that has some useful insight to offer. This includes brain-focused methodologies as much as it does experience-focused ones.

A tension may be seen to arise at this point between the perceived holism of the enactive view and the perceived 'reductionism' of

brain-focused research methods. It is not my intention to address this issue in detail but, in short, this concern appears grounded in an overly simplified understanding of what reductionism actually is and how big an epistemological threat it entails. An important distinction is well recognized between *explanatory reductionism* and *theory reductionism* (Brigandt, 2013). Explanatory reductionism refers to the targeted decontextualization and decomposition of an object of study, in order to develop an understanding of how its behavior may in part be caused by elements of its constitution at smaller scales of enquiry. Theory reductionism meanwhile is the simplistic and outdated idea that theories themselves will eventually be able to be completely accounted for by theoretical languages at more 'fundamental' levels, i.e., that psychology will be subsumed by biology, biology by chemistry, chemistry by physics, and physics by mathematics—an idea clearly at odds with enactive thinking. I wish to hazard an educated guess however, that most neuroscientists are not theory reductionists (or at least the good ones). It is common to hear neuroscientists speak of context and complexity, and I suspect many would agree that the totality of human behavior cannot be understood by study of the brain alone—i.e., that human behavior is in a sense 'irreducible'. On my understanding, neuroscientists zoom in on and decontextualize the brain because: (1) the brain is clearly very important to the study of human functioning, (2) doing so helps manage the sheer complexity at hand, and (3) reductionism has clearly been one of the most successful scientific strategies of the last few hundred years! The best neuroscientists however, then attempt to re-contextualize their findings when incorporating it back into their wider theories. Enactivism meanwhile, does not deny the existence of objects and processes at smaller scales of enquiry, or their relevance to human behavior. It simply demands that such objects and processes be understood within the context of the wider dynamic and striving person-in-context (Gauld et al., 2022).

As argued in Chap. 4, enactivism is best seen as a worldview, and as such there is room for a plurality of different methods within it (Donovan & Murphy, 2020). As such, I see no reason why researchers grounded in a wider enactive epistemological framework cannot utilize methods of explanatory reductionism, so long as they remember to put their findings back in context when they are done. I would further argue that this in

turn points to the central role of theoretical researchers within a 3e informed science of psychopathology. As briefly discussed in Chap. 1, such researchers are well placed to integrate and re-contextualize knowledge into manageable and useful theoretical frameworks. This brings us to the question of how theoreticians and other researchers should seek to organize research findings from diverse methodologies in order to develop more integrated explanations/understandings. One possible approach to this challenge is the Relational Analysis of Phenomena, or 'The RAP' (Nielsen & Ward, 2020). I will now review some current approaches to organizing research findings and targeting our attempts at explanation in psychopathology before presenting the RAP as one 3e congruent way to approach the development of explanatory theory.

DSM-ICD, RDoC, and Symptom-Based Approaches to Explanation

There are many differing perspectives on how we should organize and coordinate research findings within the study of mental disorder in order to best facilitate our developing understanding (Sullivan, 2017). One way to think about this is to ask the question 'what are the most appropriate targets of explanation in psychopathology?' (Nielsen & Ward, 2020). The seemingly obvious answer to this question is that we should seek to explain the various mental disorders recognized, i.e., the diagnostic concepts found within major classification systems such as the DSM or ICD (Berenbaum, 2013). There are however significant problems with this answer. These issues relate to wider criticisms of these classification systems as extensively reviewed elsewhere (Karter & Kamens, 2019; Lilienfeld & Treadway, 2016; Zachar & Kendler, 2017). Primary among the difficulties with this approach to defining the targets of explanation in psychopathology is that current diagnostic concepts are very *heterogeneous* (Lilienfeld, 2014). In other words, different instances of the same diagnosed mental disorder are often very different both in appearance and in apparent causes. Such concerns regarding heterogeneity are well evidenced with a diverse range of prototypical mental disorders having been shown to capture large and heterogeneous populations, including

post-traumatic stress disorder (PTSD), eating disorders, schizophrenia, and depression (Contractor et al., 2017; Dickinson et al., 2017; Galatzer-Levy & Bryant, 2013; Hawkins-Elder & Ward, 2020; Monroe & Anderson, 2015). This problem of heterogeneity, alongside other challenges, suggests that our current diagnostic constructs fail to pick out similarly constituted entities with common causal processes/structures and are thereby of questionable etiopathological validity. In short they do not seem like the sort of stable phenomena that make for good explanatory targets (Nielsen & Ward, 2020).

Recognition of such challenges, and a perceived lack of progress in the development of causal explanations for mental disorders, has led to the development of alternative approaches. Such approaches are often labelled as *trans-diagnostic* in that they step away from or seek to cut across extant diagnostic categories. Primary among these approaches is the Research Domain Criteria ([RDoC] Cuthbert, 2014; Cuthbert & Insel, 2013; Cuthbert & Kozak, 2013; Insel et al., 2010). Developed by the National Institute of Mental Health [NIMH] in America, RDoC is a funding initiative designed to shift research attention away from the signs and symptoms of mental disorder as per the DSM-ICD, to the underlying causal processes that generate them. Vitally however, in doing so it assumes mental disorders to be disorders of 'brain circuitry' thus taking a biologically essentialist position (Insel et al., 2010; Morris & Cuthbert, 2012).

RDoC is centered around an organizational matrix with a horizontal axis containing seven 'units of analysis' (which specify structural 'levels' of enquiry), and a vertical axis listing basic psychological functions (Cuthbert & Insel, 2013; Cuthbert & Kozak, 2013; Lilienfeld & Treadway, 2016; Morris & Cuthbert, 2012). The seven units of analysis are biologically/neurologically focused including: genes, molecules, cells, neural circuits, physiology, behavior, and self-report. Researchers seeking funding are able to classify their research within this matrix rather than in reference to DSM-ICD diagnostic concepts. The explanatory aim of RDoC then, is to facilitate the study of how phenomena observed at the seven defined levels (e.g., higher levels of striatal dopamine, lower dendritic spine density in brain area X) affect the degree to which the basic functions are achieved (e.g., response to acute threat, approach motivation). The hope

is that this process will uncover *trans-diagnostic mechanisms* relevant to current diagnostic labels (Cuthbert & Insel, 2013; Hoffman & Zachar, 2017). It is important to note however that these trans-diagnostic mechanisms are assumed to be neurobiological in origin, with conceptual priority given to the central unit of analysis within the matrix; 'neural circuitry'. With time, RDoC messaging has evolved to give greater focus to the role of development and the environment, including cultural context and social determinants of mental health. However, the conceptual focus on the nervous system and neural circuitry clearly remains. For example, in a section concerning development and environmental factors the RDoC website states:

> "It is now widely accepted that most mental illnesses result from maladaptive maturation of the nervous system including its interaction with the wide variety of external influences beginning at conception. The social and physical environment comprises sources of both risk and protection for many different disorders occurring at all points along the life span, and methods for studying phenomena such as gene expression, neural plasticity, and various types of learning are rapidly advancing." (NIMH, 2022)

Concerns about the neurocentricism of RDoC have been well discussed elsewhere however, and it is therefore perhaps more useful to focus on what RDoC appears to do well (Berenbaum, 2013; Hershenberg & Goldfried, 2015; Kirmayer & Crafa, 2014; Lilienfeld, 2014; Lilienfeld & Treadway, 2016; Nielsen & Ward, 2018, 2020; Wakefield, 2014). By shifting explanatory focus to the discovery of transdiagnostic neural mechanisms and their relation to specified functions, RDoC represents a shrinking of explanatory targets towards more stable, less heterogeneous, phenomena. This move seems an advisable response to the heterogeneity plaguing DSM-ICD-defined targets. Regarding this move however, authors Hoffman and Zachar (2017) point out an important concern:

> "[t]he worry is that in order to achieve the fineness of grain needed for elucidation of causal mechanisms, we risk losing connection to the "coarse" clinical phenomena of interest." (2017, p. 68)

A vital quality for a target of explanation to hold is that it should maintain its relevance to the reason for seeking an explanation in the first place. The study of psychopathology is fundamentally a pragmatic science—we want to understand mental disorders to better understand how we can help people. By shrinking the explanatory targets of research down to the scale of neural circuitry and its impact on basic cognitive functioning there is a worry that RDoC drifts too far from this purpose. Such an argument would hold that more immedicably useful clinical and therapeutic knowledge is likely to be developed if explanatory centrality was granted to people-in-context rather than to the neural pathways in their heads. A related concern is that the concept of mental disorder is inherently normative, yet outside the specified basic functional domains there is no broader normative element within RDoC with which to give RDoC's findings meaningful conceptual validity (Nielsen & Ward, 2018; Wakefield, 2014b).

In essence then, there is a reasonable argument to be made that RDoC represents an overcorrection in the grain size of the explanatory targets in psychopathology. By this I mean that 'neural circuits' do not maintain sufficient relevance to the wider dysfunction and suffering that motivates our enquiries in the first place. In many ways this concern is probably outweighed by the sheer amount of basic research that RDoC is likely to facilitate, however, we need to be clear about what RDoC is doing. Under the conceptual framework developed within these pages, research within the RDoC framework searches for (largely sub-personal) abnormalities that likely play constitutional and/or causal roles as *components of* psychopathology. Neural circuit abnormalities are not themselves disorders under the current conception. The efforts represented by RDoC thereby represent vital work, discovering and confirming constituent phenomena. Such phenomena can then be utilized, in combination with wider findings, to weave together explanations that more thoroughly and fully sketch out the complex process structures of mental disorders. On the current view such constituent phenomena do not themselves constitute explanations of psychopathology.

RDoC grants greater freedom to researchers, in that under the RDoC framework they no longer have to justify their research interests by linking them to some particular and established problem (i.e., DSM-ICD

syndromes). This freedom will be good for psychopathology as a complete scientific endeavor (Casey et al., 2013), but the vital task of *developing explanations* of psychopathology has different requirements to the larger science within which it sits. On the current view, ideal targets of explanation balance stability and relevance to the larger disorder space (Nielsen & Ward, 2020). By targeting largely sub-personal abnormities and investigating their potential role as transdiagnostic mechanisms, RDoC seems to prioritize the prior at the expense of the latter. In doing so, RDoC seems be performing a different task to that of picking out ideal targets and explaining them. Rather, it seems to be attempting to provide some important sub-personal ingredients for our explanations.

Another emerging approach to explanation in psychopathology is to turn explanatory focus to symptoms or individual phenomena themselves (Wilshire et al., 2021). While less commonly discussed than RDoC or DSM-ICD-based approaches, such a focus is worth briefly exploring. Instead of trying to explain the wider concept of depression as per DSM-ICD-based approaches, or seeking to understand the potential neurobiological ingredients that may underpin various disorders as per RDoC, symptom-based approaches focus in on individual symptoms or phenomena (T. Ward & Clack, 2019a). For example Clack and Ward (2020) example how a multiscale understanding of an important phenomenon within depression—anhedonia—can contribute greatly to our understanding of how depression works. Part of the motivation behind these approaches, similar to the RDoC, is to improve the stability/homogeneity of the targets of our explanations. Another key advantage of this approach is that it highlights that symptoms themselves are complex constructs, partially socially constructed, and thereby themselves in need of critical theoretical analysis (Wilshire et al., 2021).

In focusing on single symptoms or 'clinical phenomena' such as anhedonia however, symptom-based approaches take a large step away from our currently recognized syndromes of mental disorder. Much like RDoC then, in order to achieve greater stability/homogeneity in their explanatory target, such approaches represent a shrinking of explanatory targets away from currently recognized patterns of distress and dysfunction. Such a step is well reasoned and seems likely to be very fruitful. Largely and for the most part however, such approaches represent a method of

decomposition; of breaking the problem down into parts. Typically, methods of decomposition are followed by reassembly; putting the pieces back together with an understanding of how they work (Bechtel, 2009b; Kendler, 2008). What is strung back together in symptom-based approaches is an understanding of an individual component phenomenon—i.e., one important part of a larger disorder—not necessarily an understanding of the wider pattern of distress or dysfunction.

A concern I have with symptom-based approaches is whether or not they will capture well the self-perpetuating structures that result in genuine disorder as highlighted under 3e Psychopathology. For example, experiencing intrusive thoughts is an important part of OCD (Seli et al., 2017), yet having intrusive thoughts is extremely normal across many cultures and by itself is rarely problematic (Radomsky et al., 2014). Rather, this phenomenon of intrusive thoughts needs to be viewed in interaction with other phenomena such as compulsions, distress, and the moderating effect of traits such as thought-action fusion, in order to understand why this collection of phenomena constitute a 'disorder' for the person affected. As another example, there are many instances of the 'symptom' of experiencing recurring hallucinations—often seen as quintessentially pathological—actually having no clear association with dysfunction or significant harm (Fulford & Jackson, 1997; Larøi et al., 2014; NiaNia et al., 2016). Similarly then, hallucinations need to be viewed in relation to other phenomena such as confusion, distress, and cultural-moral conflict, before we can see how they should be considered disordered. This suggests that targeting symptoms themselves, while to the benefit of target *stability* and the thoroughness with which we can analyze said target, such a move still somewhat compromises on the *relevance* of the explanatory target to our wider purposes. This concern is a large part of what inspired the Relational Analysis of Phenomena approach outlined in the following section. For more detailed review of different approaches to explanation, including review of symptom network based approaches, see (Nielsen, 2020b; Nielsen & Ward, 2020).

The RAP

The Relational Analysis of Phenomena [the RAP] is a meta-methodological framework for integrating research findings and developing theories for the explanation of mental disorders. Based upon the 3e Psychopathology conceptualization of mental disorder, the RAP is designed to capture hypothesized circular/recursive causal process structures distributed across brain, body, and environment. In particular, it is designed to produce theories of how disorders maintain as opposed to how they originate, producing theoretical sketches of the dynamical constitution of mental disorders across the brain-body-environment system—i.e., sketches of how unhelpful differences in sense-making tend to maintain themselves over time. The RAP is *not* designed to produce etiological explanations in the sense of linking patterns in sense-making to distal causes such as genetics and developmental factors. It is also *not* designed to produce individually tailored explanations for mental disorders as will be discussed in the second half of this chapter. In this section I will briefly present some of the core ideas within the RAP, before briefly overviewing its various phases. For fuller discussion of the RAP I would direct the reader to Nielsen and Ward (2020) and Nielsen (2020b).

Instead of broad heterogeneous clusters of symptoms such as those featured in the DSM-ICD, or neural circuit abnormalities as focused on within RDoC, the RAP gives explanatory focus to the *relationships between component phenomena* within a given disorder space. By 'component phenomena' I am referring to the reliable tendencies and occurrences that typically occur within a mental disorder, examples might include anhedonia, sleep latency difficulties, or grandiose delusions. This is a similar concept then to 'symptoms', but does not carry assumptions of disease or strict homogeneity for the wider disorder concept, and highlights that phenomena/symptoms are themselves detected/constructed rather than being pre-given and therefore need to be argued for and defended as valid and useful patterns in the world to utilize within our explanations (T. Ward & Clack, 2019b). By 'disorder space' I am referring to the general conceptual space denoted by a mental disorder that one might want to come to understand, e.g., depression, OCD, PTSD. Use of this term highlights, as discussed in earlier chapters, that

the division between mental disorders themselves and therefore their classification is contestable, and that there are likely many reasonable ways to approach this. The central idea of the RAP is that if we can repeatedly come to understand the causal relationships between enough of the component phenomena within a given disorder space, then we will, with time and coordinated effort, develop a sketch of how that disorder works—how it biases the sense-making of individuals and how it maintains itself over time (Nielsen & Ward, 2020). As discussed in the previous section the underlying understanding of scientific progress here is one that is gradual and distributed across different researchers/labs, rather than a view where progress comes in leaps of genius discovery.

Relationships between component phenomena are targeted within the RAP by use of the concept of 'phenomena complexes'. Phenomena complexes are artificially selected units of two to three component phenomena that reliably co-occur within a given disorder space. For example, a phenomena complex within anxiety disorders might include increased irritability, increased sleep latency, and frequent anxious rumination. By 'artificially selected' I mean that phenomena complexes are not meant to represent naturally occurring or isolatable parts of a disorder. It is proposed that, as epistemic units, phenomena complexes represent a balance point between the stability and relevance of explanatory targets within psychopathology (Nielsen & Ward, 2020). This can be seen most clearly in relation to clinical practice. Detailed comprehension of the neurological underpinnings or wider constitutional structure of individual symptoms, such as anhedonia, seems of limited practical value to mental health professionals given currently available clinical tools—such targets are therefore likely stable but not very relevant. As discussed above meanwhile, the diagnostic concepts of the DSM-ICD tell a clinician very little about what is actually causing someone's problems because, while they describe genuine problems, they are overly heterogeneous—i.e., they are relevant but insufficiently stable. Phenomena complexes meanwhile, in capturing the likely relationships *between* common clinical phenomena within a given disorder space, would seem to represent useful epistemic units through which clinicians could draw on the evidence base in a way that was directly relevant to helping their patients. In being composed of only a small number of phenomena, such complexes also seem more

likely to be stable than current DSM-ICD constructs. Imagine briefly three different databases, one listing DSM-ICD diagnostic concepts and linking these to proposed explanatory theories, one listing individual symptoms or basic functional disturbances as per RDoC and linking these to proposed neural mechanisms, and one listing phenomena complexes or allowing you to select multiple phenomena and linking these to hypothesized and established 'micro-theories' about how the clinical phenomena may be influencing and supporting each other. I would argue that the third database would offer the clearest clinical utility. For further discussion of issues of heterogeneity in connection to the RAP, see Nielsen (2022b).

Now that I have outlined the general approach and intention of the RAP—i.e., that it is a gradualist, multi-scale, and collaborative approach to explaining the maintenance/constitution of mental disorders via the targeting of the relationships between component phenomena—I can now shift to outlining the actual phases of the RAP as a method. The phases of the RAP are as follows. Phase 1: Explainers first list out the phenomena that reliably occur within a disorder space and sketch the apparent relationships between them. This is conceptually parallel to the development of a symptom network for a given disorder. Phase 2: Explainers then select out a small number of seemingly related phenomena to form a phenomena complex, and describe these phenomena at multiple scales of enquiry—from genetics to culture—using multiple descriptions drawn from the literature or guided by their own investigations. Phase 3: Finally, explainers utilize their now rich understanding of this small selection of phenomena to abductively infer possible causal relationships within the complex and evaluate these explanations both experimentally and in accordance with accepted epistemic values. An important feature of the RAP is that it is seen as an iterative process, with researchers free to return and cycle back through the various phases on the basis of their evaluations. The central goal of the RAP is to support the gradual and dispersed development of scientific understanding regarding the complex multiscale process structures conceptualized to be at play in the maintenance of mental disorders (Nielsen & Ward, 2020). The three phases of the RAP are represented in Fig. 6.1.

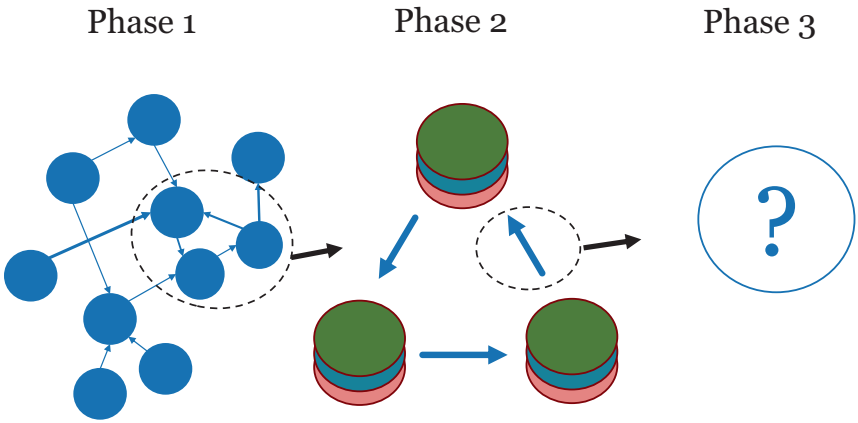

Fig. 6.1 The Stages of the RAP. Phase 1 involves sketching out and refining a map of constituent phenomena and their relationships within the disorder space. Phase 2 involves selecting a phenomena complex and describing its constituent phenomena across multiple scales. Phase 3 involves abductively inferring a mechanism that explains relationships within the phenomena complex. This structure is iterative in that cycling back through the phases should gradually fill out our understanding of the dynamic constitution of the disorder under study

Summarizing 3e Psychopathology and Nomothetic Explanation

In summary, 3e Psychopathology calls for a pluralistic approach to research level explanation and a general principle of inter-methodological respect. Given the complexity highlighted by the 3e Psychopathology conceptualization of mental disorder developed across previous chapters it is held that there are many useful ways to study mental disorders, to organize our findings, and to explain them. In accordance with common criticisms, DSM-ICD diagnostic constructs do not do justice to the complexity and individual variation of mental disorders. RDoC represents one plausible way to organize research efforts within psychopathology, but concerns were highlighted regarding its neuro-centricity and lack of normative consideration. The RAP represents one plausible and 3e

Psychopathology congruent way to organize research findings and develop explanations of psychopathology. It is important to note however that the RAP is designed to develop an understanding of the maintenance of mental disorders, not their origin or development.

6.3 Explanation for Clinicians—i.e., Formulation

If someone is facing mental health related challenges in their life and decides to go and see a clinical psychologist, psychiatrist, or other mental health professional, the first meeting with this clinician will likely involve describing the nature of the challenges being faced. While this clinician may or may not attempt to categorize or 'diagnose' these challenges as a recognized pattern of difficulty, this clinician—whether they realize it or not—will always come to understand and explain the challenges in a particular way. They will make inferences based on the information provided, explanatory theory, and their own training and conceptual assumptions, as to how they understand what is going on. In other words, they will begin to *formulate* an understanding of the difficulties being faced. This act of formulation—and theorizing about it—is given particular attention within clinical psychology as the entire discipline is based upon the idea of assessing, understanding, and helping people utilizing knowledge and ways of understanding grounded in psychological science rather than in medicine and diagnosis (Johnstone, 2018). Formulation is, however, explicitly discussed and utilized within other disciplines. Formulation is defined and understood in many different ways, but it is generally agreed that a formulation can be thought of as a hypothesized explanation/understanding of a patient's difficulties which can then be used to guide clinical decisions and treatment (Bruch, 2015; Eells, 2015; Johnstone, 2018; Johnstone & Dallos, 2013; MacNeil et al., 2012; T. Ward et al., 2016). It is also important to recognize that formulations serve a diverse range of functions, for example they are also often used in report writing and to argue for patient access to further supports within our healthcare systems.

Across the rest of this chapter I will explore some implications of 3e Psychopathology for the act of formulation—i.e., how a 3e informed clinician may go about explaining a token case of mental disorder. My wider intention here is *not* to present a methodology for formulation. Instead, my intention is to begin exploring how 3e Psychopathology can have genuine impact on day-to-day clinical practices through the constraints and guidance it offers for the task of formulation. In other words, my aim here is to explore implications for the tasks of both explanation and, to a lesser extent, treatment. In order to do so I must first give a sense of how approaches to formulation vary. For this reason a rough methodological taxonomy of formulation practices will first be presented. Once this taxonomy has offered an overview of some key ways that understandings and approaches to formulation differ, I will then shift to discussing the general function of formulation under a 3e conceptualization. A methodologically pluralistic understanding of formulation will be endorsed, alongside discussion of how a 3e Psychopathology orientation can provide constraint and guidance for clinicians. Toward the end of this discussion two tools will be presented for use by clinicians: a summary list of principles and values for the evaluation of formulation processes, and a visual schematic for guiding the exploration of moment-to-moment sense-making during assessment and treatment. My primary hope with these tools is that they may be of benefit for fellow clinicians interested in exploring how 3e Psychopathology can supplement their practice. However, these tools may also be of interest to philosophers of psychiatry both professional and amateur who have an interest in formulation.

As an aside, throughout this section I will variously use the words 'person', 'client', and 'patient' to refer to a person seeking help from a clinician. This is often a source of surprising controversy, with much debate made over whether 'patient' is too medical and grants too much power to the clinician, or whether 'client' is too business-like and therefore inappropriately transactional for use within care-based professions. I use these various terms intentionally, in defiance of such debates. Words are obviously important, but in this case the particular words are not as important as what we mean by them and how clinicians actually relate to the people they see.

A Rough Methodological Taxonomy of Formulation Practices

There are many different ways to think about formulation, including in terms of what exactly it is, what it aims to do, and how best to do it. In this section I will present a rough methodological taxonomy of formulation, in the style of Zachar and Kendler's (2007) conceptual taxonomy of mental disorder utilized in earlier chapters. This taxonomy is intended to capture some of the important ways that understandings of formulation differ, and is not intended to be comprehensive (for further discussion of formulation see: Eells, 2015; Johnstone, 2018; Johnstone & Dallos, 2013; T. Ward et al., 2016). Rather than remaining entirely impartial in presenting this taxonomy, I will at a few points comment when a particular approach has a clear epistemological or pragmatic advantage. While my intention here is to demonstrate how approaches to and understandings of formulation differ, it would be dishonest to pretend that all approaches are made equal. Particular attention will at times be given to the Abductive Theory of Method (ATOM) developed by Ward et al. (1999) and Ward et al. (2016). The first reason for this is that ATOM is the approach to formulation in which I was trained and draw on in my own practice, and I feel it is important to recognize how it has shaped my thinking. The second reason is that, as I will seek to demonstrate, this approach to formulation features several epistemic advantages and accords reasonably well with a 3e informed approach. I will now overview the 8 factors of this taxonomy in turn. They are: theoretical loyalty, tailoring, degree of collaboration, selection of the explanans, the understanding of truth, the explanatory purpose, the explanatory target, and the explanatory style.

Theoretical Loyalty. This factor refers to whether formulation is understood to be engaged in within the confines of a particular theoretical orientation/treatment modality, or whether formulation is understood as a process more or less independent of such theoretical commitments. For example, someone who understands formulation in the former way and who is committed to an Acceptance and Commitment Therapy (ACT) approach would attempt to understand a patients difficulties utilizing the various concepts/tools that ACT contains—i.e., in

reference to how fused they are with their thoughts, how attached they are to self-concepts, how connected they are with the present moment, how accepting they are of their present experience, how aware of their values they are, and whether they are acting in accordance with their values (Harris, 2009). Someone who understands formulation as a process independent of a particular theoretical orientation, meanwhile, is offered less clear guidance as to the theoretical objects and tools they can draw on. This brings greater freedom to pick and choose theoretical tools as their needs require, but also greater cognitive demand on the clinician to somehow tie together insights from diverse theoretical perspectives in a coherent way. This factor can be considered as somewhat of a continuum from someone with a strict understanding of formulation existing within a theoretical framework (e.g., the devout ACT practitioner above), to someone who draws on or integrates multiple theoretical perspectives as they feel is useful (e.g., someone who integrates or otherwise combines ACT with ideas from somatic therapy and the psychodynamic tradition), through to someone who understands formulation as a common explanatory process across different theoretical orientations—i.e., a trans-theoretical approach. Integrative but non-trans-theoretical approaches are often esoteric in nature, however some more formalized integrative approaches do exist (Dallos, 2006). The latter trans-theoretical approach is endorsed by Eells (2015) who distinguishes between the process of formulating, and the content of formulation, presenting an integrative view whereby the process is similar no matter the theoretical content one draws on. Such an approach is also endorsed within ATOM, under which—no matter one's particular theoretical commitments—the act of formulation is understood as an abductive explanatory process analogous to the methods of science—i.e., as an inference to the best explanation (T. Ward et al., 1999, 2016).

Tailoring. This factor relates to how novel or personalized formulations are seen to be and can again be thought of as existing on a continuum. At the one end we may have professionals who take an almost *diagnostic* or *off the shelf* approach, identifying patterns or syndromes and importing relevant models or theories wholesale to inform their understanding. Somewhere in the middle would sit *template-based* models of formulation whereby a set structure is utilized but individually tailored to

the patient based on the findings of assessment. An example of this would be a classic Beckian CBT formulation utilizing concepts of core beliefs, assumptions, and the flow-on effect of these through someone's thoughts, emotions, actions and bodily sensations (J. S. Beck, 2020). Other examples of this template-based approach would include the 5-P model (a common approach to formulation involving describing the problem and listing out apparent predisposing, precipitating, perpetuating, and protective factors), or the various triangle models utilized in some psychodynamic approaches (Malan & Parker, 1995). A flexible use of various theoretical templates for formulation is endorsed and further discussed by Eells (2015). At the other end of the continuum we see completely *bespoke* explanations with no predetermined theoretical structure. An example of this would again be the ATOM approach which describes the inferential processes of developing a good formulation rather than prescribing any particular way of structuring ones understanding of the problem itself, other than that it should highlight the core 'working parts' or mechanisms so as to best target attempts at intervention (T. Ward et al., 1999, 2016).

Degree of Collaboration. This factor refers to the question 'is a formulation something that is developed by the professional as an expert, or is it something that the professional and client develop together in a collaborative fashion?' Answers to this question can be understood as existing on a continuum. On the extreme *collaborative* end we can arguably consider the person-centered therapy of Carl Rogers which aims forgo any sense of the therapist as expert, and instead seek to facilitate the persons own growth and potential through human connection and collaborative observations. On the opposing *didactic* end, we may consider a professional who views a formulation as something they themselves complete, on the basis of their assessment of the client, which they may then choose to disclose to the patient. Somewhere in the middle we may consider a moderately collaborative approach whereby both parties are seen to have relevant knowledge and skills, and come together to produce a shared understanding of the problem at hand in order to help them decide what to do about it, such as the approach described by Johnstone (2018).

Selection of the Explanans. This factor is similar to the notion of internalism vs externalism within Zachar and Kendler's (2007) conceptual taxonomy discussed in earlier chapters. In philosophy 'the explanans' refers to the collection of premises used to explain something. In other words, this factor concerns what sort of causal factors are incorporated into a formulation. In particular this factor refers to whether formulations simply focus on psychological factors in a restricted sense (i.e., how the client is understanding and responding to the world) or whether they incorporate—or even focus on—causal influences and contextual factors from across the wider system (e.g., biological, environmental, and social factors). An example of a psychologically focused approach would be the formulaic CBT-style formulations mentioned earlier. While in practice contextual factors will often be acknowledged by CBT practitioners, there is a clear focus on cognition and behavior. This is useful in many ways as it is the client's ways of thinking and behaving that they have the most control over, and is somethings that the practitioner and patient have access to in the room. However, consider for example someone experiencing mood disruption and fatigue difficulties secondary to hypothyroidism, or as a result of bullying or racism. It is difficult to see how to acknowledge the role of such systemic factors within traditional CBT formulations. On the other end of the spectrum, we may consider systemic approaches which give focus to interpersonal dynamics in a family unit, or practitioners that attempt to craft understandings that integrate causal factors from across the biopsychosocial spectrum.

The Nature of 'Truth'. This factor relates to the questions 'how true is a formulation?' and 'in what sense is a formulation true?' This factor is not modelled well as a continuum, but rather we can see multiple distinct positions available. Full discussion on the nature of truth is clearly a topic well beyond the scope of the current project, however, suffice to say that there a several established positions. An *empiricist* position for example might hold that a formulation is 'true' insofar as it accords with the evidence and makes accurate predictions about the client's behavior—i.e., it appears to align with 'objective reality'. A *social constructionist* perspective meanwhile might hold that there is no single reality/truth for a formulation to align with and therefore might focus on understanding the various perspectives/narratives that the client and others hold (Harper & Spellman,

2006). On the other hand, a *pragmatic* perspective may circumvent such metaphysical quandaries and hold a formulation to be 'true' insofar as it is useful in helping the client. Drawing on pragmatic understandings of science and explanation, this can be further specified using the notion of *pragmatic values*. Pragmatic values are qualities that a formulation/explanation can have which make it more useful, such as proximity to loci of control/influence, incorporation of factors important to the client, and communicability (Potochnik, 2016). The approach utilized within ATOM meanwhile could be described as *epistemic*. ATOM recognizes that, given its status as an explanation, there are a variety of *epistemic values* that we can use to assess the 'truth' of a formulation (T. Ward et al., 1999, 2016). Epistemic values are qualities that pertain to the likelihood of accuracy, such as parsimony, internal coherence, coherence with other established knowledge, and predictive value (Haig, 2014; Thagard, 2017).

Explanatory Purpose. This factor refers to the underlying perceived purpose of developing a formation, and is again not well modeled as a continuum. As discussed it is generally agreed that formulations are hypothesized explanations for a person's difficulties that can help guide attempts at intervention, however within this there is still significant variation as to the intended purpose. For example, some approaches to formulation place emphasis on explaining someone's difficulties in a *depathologizing* way—as a normal or reasonable response to abnormal or difficult circumstances. A clear example of such an explanatory purpose would be the Power Threat Meaning Framework which seeks to highlight the relationship between someone's difficulties and adverse environments and experiences across their life (Johnstone et al., 2018). Other approaches do not place emphasis on depathologizing distress and may instead see the purpose of formulations as more *purely explanatory*. ATOM would be an example of this in that, as we saw when discussing the 'nature of truth' factor, formulations under ATOM are evaluated on the basis of epistemic rather than moral values (T. Ward et al., 1999, 2016). Another example of variation in this factor would be formulations developed to suit particular *administrative* needs. For example, in practice, formulations may be completed with the intention of highlighting causal links between a person's presenting difficulties and certain life experiences in order to facilitate access to restricted supports such as funded sessions.

The Explanatory Target. This factor relates to how approaches to formulation differ in regard to what is seen as the appropriate explanatory target. This factor is also not modeled well as a continuum and appears to be the least widely discussed of the factors I have highlighted here. Many approaches simply assume that the appropriate target of explanation for a formulation is 'the presenting problem'. While obviously true, this answer is somewhat naïve in that it is not sufficiently specific. By 'the presenting problem' one could just as easily be referring to the specific complaint that led a client to seek help (e.g., 'I am having trouble sleeping and I have lost weight recently without really trying'), the wider set of symptoms or difficulties disclosed during assessment (e.g., flat mood, lack of appetite, early morning waking, anhedonia), or the diagnosis offered by a clinician to categorize and label the difficulty (e.g., depression). Another approach to specifying the explanatory target involves collaboratively developing a list of agreed upon questions to be answered or explored. Such an approach, based on my limited understanding, is often utilized in family or systemic therapies (Dallos & Stedmon, 2013). The ATOM approach to specifying the target of explanation is somewhat technical, but brings clear advantages in terms of specificity, so is worth briefly unpacking here. Within ATOM, distinctions are made between the initial presenting complaint, the focus of enquiry (i.e., a refined version of a presenting problem including core questions that need to be answered), and the clinical phenomena (i.e., reliable clinically relevant patterns inferred from the information sourced during assessment). Within ATOM it is the clinical phenomena which one seeks to explain with a formulation. A key concept that ATOM draws on is that of the data-phenomena distinction outlined by Bogen and Woodward (1988). Under this distinction 'data' constitutes information about the world and is inherently fallible and noisy, while 'phenomena' are inferred based on reliably detected patterns within the data. The intention of a formulation is clearly not to explain every moment-to-moment choice a patient makes or account for every individual item on psychometric measures they complete (i.e., to explain the data). Any attempt to follow up on and explain *every* idiosyncratic data point in a person's report or history is likely to lead a clinician down the proverbial garden path. Rather, as specified in ATOM, a formulation should seek to explain clinically relevant

and reliable patterns within the data available—i.e., the clinical phenomena (T. Ward et al., 1999, 2016). Making this distinction brings clear advantage when synthesizing and making sense of large amounts of complex information, as one does when developing a formulation. As I will argue below, for those aiming to recognize the embodied, embedded, and historically informed nature of psychological problems, utilizing this data-phenomena distinction when specifying their intended targets of explanation is a practical necessity.

The Explanatory Form. It is well recognized in philosophy of science that explanations come in many different forms (Thagard, 2017), and this factor pertains to the style or form of explanation utilized in formulation. Again, this factor is not well modelled as a continuum with a variety of approaches taken. Formulation as endorsed by Johnstone (2018) or as seen within the Power Threat Meaning Framework (Johnstone et al., 2018) for example, appears to take a *narrative* form in that they are focused on tracking important historical factors and developing a sense of interpersonal understanding of the client and the challenges they are facing through telling their story. The collaborative observations made during emotion-focused therapy meanwhile, while not usually understood strictly as formulations, can be understood as *dynamic* style explanations which track relationships between events without specifying any underlying causes (Greenberg, 2004). *Dispositional* style explanations alternatively seek to explain a person's challenges in reference to traits/dispositions that they have (Vanderbeeken & Weber, 2002). For example, explaining someone's difficulties regulating their drug use in reference to their being highly impulsive and having poor problem-solving skills. A limitation of this approach is seen in terms of depth in that it is left unclear where exactly these dispositions come from and what one might be able to do about them. *Mechanistic* approaches meanwhile attempt to isolate key components/factors that, when understood in context and interaction, offer an explanation of a target phenomenon, make it less surprising, and suggest ways that it might be manipulated (Glennan & Illari, 2017). ATOM is a good example of a mechanistic approach to formulation (T. Ward et al., 1999, 2016). The well-known 5-P model meanwhile, as described earlier, attempts to explain a presenting problem by essentially listing putative causal factors. This is in some ways similar to a

mechanistic approach in that it attempts to highlight important causal factors, however it does not seek to understand how the factors integrate to bring about and maintain the presenting problem. This can be referred to as a *list-based* approach to explanation.

Formulation and 3e Psychopathology

Now that some of the important ways that approaches to formulation differ have been outlined, we can begin to consider what formulation may look like under 3e Psychopathology. This discussion will be broad in nature because, as I will argue, 3e Psychopathology does not prescribe any one particular approach to formulation. As such it is *not* my intention to present a method of formulation here. Rather my intention is to explore some implications of 3e Psychopathology for the task of formulation. I will first outline the general function of formulation under 3e Psychopathology, showing that the general intention of developing a tailored explanation for a person's difficulties remains. I will then argue for a methodologically and explanatorily pluralist understanding of the act of formulation based on the multi-scale complexity that 3e Psychopathology conceives is at play in mental disorder. I will aim to show that this is not an unrestrained pluralism whereby 'anything goes' and will highlight some of the core constraints that 3e Psychopathology offers during the formulation process. Following this, I will continue to explore the nature of the methodological guidance offered by 3e Psychopathology by considering the degree and nature of constraint placed upon each factor in the taxonomy presented above. Near the end of this discussion and in the following section some core ideas will be synthesized into two tools which may be helpful in the development of 3e Psychopathology informed formulations. The first such tool is a table of principles underpinning good formulation when mental disorder is understood through a 3e lens. The second tool is a graphical representation of the process of moment-to-moment sense-making which I have found helpful in a clinical context when gathering experiential data for formulation development, as well as for encouraging meta-cognitive reflection and understanding.

The Function of 3e Formulation. As should be clear from the earlier discussion, the act of formulation is generally agreed to concern the generation of a hypothesized explanation for a patient's presenting problems. Essentially then, a formulation is an attempt at explanation at the idiographic level. Under 3e Psychopathology this intention remains. As presented across previous chapters, 3e Psychopathology understands mental disorders to be dysfunctional patterns in sense-making constituted and influenced by complex multi-timescale process structures spanning brain, body, and environment. These structures are deeply interwoven with the sense-making processes of an individual and are defined by how they hold said individual stuck within a pattern of engaging with the world that does not work for them. The basic function of formulation under 3e Psychopathology then, is to capture or grasp a *good enough sketch* of the complex structures keeping the patient stuck in this unhelpful way of engaging with the world. In essence, a formulation as viewed through 3e Psychopathology needs to capture enough of what is going on within the brain-body-environment system to offer insight as to why a person is stuck. Moreover, in doing so it needs to offer guidance as to what might help get them unstuck.

A vital question at this point is, what exactly does it mean for an explanation to be a 'good enough sketch'? I have used this phrase here to highlight that, as a *situated* explanation developed for a *particular purpose*, a formulation is subject to a complex array of values both epistemic and pragmatic. As discussed earlier, epistemic values are qualities that make an explanation more likely to be 'true' or accurate and valuable in terms of knowledge (Haig, 2014; Thagard, 2017), while pragmatic values concern qualities that will make an explanation fit for its intended purpose (Potochnik, 2016, 2017). In recognizing that the act of formulation concerns the development of a situated explanation then, 3e Psychopathology would invite recognition of both epistemic *and* pragmatic values during the construction and evaluation of formulations. Examples of relevant epistemic values include: explanatory breadth/scope, coherence with other established knowledge, internal logical coherence, and (arguably) simplicity. Examples of relevant pragmatic values include communicability, proximity to loci of control, and a balance between explanatory aspiration and limitations on time and resources.

The recognition of pragmatic values is vital because doing so acknowledges that different kinds of explanation/formulation are better suited for different contexts. For example, a psychiatrist who prescribes medications will likely see greater value in the incorporation of biological causal/constitutional factors into their formulations because they want to be able to predict and make sense of the possible impacts of the medications they prescribe. As a psychologist on the other hand, there is little practical value to incorporating detailed biological factors into my formulations because these are not within my loci of influence. Instead, my formulation is of greater practical value if it focuses on capturing the psychobehavioral process at play, because this is what I can target with the development of a psychotherapeutic intervention. Different contexts and purposes thereby call for different explanations, demonstrating the role of practical values in the evaluation of formulation. In particular I have also used the phrase 'good enough sketch' to highlight that clinicians and their clients/patients are themselves situated and thus limited in time and resources, thus placing further practical limitations on their efforts at formulation. A 'good enough sketch' then is one that, on balance, accords with such epistemic and pragmatic values and limitations. Such a 'good enough sketch' can then continue to be refined, or indeed replaced, as understanding develops and further information is uncovered. In the following section I aim to begin showing how the gentle methodological guidance offered by 3e Psychopathology and its particular conception of mental disorder can facilitate the development of such valid and useful formulations in clinical practice.

Before moving on, it is important to recognize that in focusing on formulation what I am describing is a *problem-focused* conception of therapeutic encounters. This accords with the wider intention of this book to begin to develop a 3e inspired approach to *psychopathology*, i.e., the study and treatment of mental disorders. I wish to be clear that this is not to argue against the value of more *person-focused* or *relational* approaches, such as the recent enactive analysis of the therapeutic encounter through the lens of participatory sense-making by García (2022). Such relational and person-focused approaches place less emphasis on understanding 'the problem' or 'psychopathology', and rather place greater emphasis on the person-as-a-whole, as well as the situated relationship with the clinician.

One important point of similarity between relational approaches and 3e Psychopathology however, is in recognition that the clinician themselves are situated and subject to their own historicity. Like it or not, formulation is not some abstract process that can be perfectly represented in methodological discussions such as I am engaged with here—it is rather an embodied and situated activity. It is not after all only clients/patients that are embodied and shaped by their history and context! Recognizing this brings a natural demand for clinicians to be reflective as to their own histories, contexts, the decisions they make, and how they are themselves engaged in a process of sense-making in the therapy room. Formulation (and most other psychotherapeutic techniques) can be understood as sense-making about sense-making (Aftab & Nielsen, 2020). Both clinician and patient are seeking to make sense of the problem at hand—how it emerged and how it is sticking around—but also to find new ways to make sense of the situation that may afford new and more adaptive ways forward.

A Constrained Methodological Pluralism. If all readers of this book somehow miraculously agreed that mental disorders are indeed best conceptualized as they are within these pages, this would still not mean that there was suddenly one best way to approach formulation. Parallel to the discussion of pluralism regarding nomothetic explanation in the first half of this chapter, the complexity highlighted by the 3e view of mental disorders and human functioning strongly suggests that there are likely to be many valid ways to approach formulation. In other words, 3e Psychopathology endorses methodological and explanatory pluralism regarding formulation. This is of course not to say that 'anything goes'. In this section I will outline some *guiding ideas* for formulation under 3e Psychopathology, including exploration of the degree and nature of constraint that 3e Psychopathology offers upon each factor of the conceptual taxonomy outlined earlier.

Under the 3e view, the mind is not 'a thing' locked away from the world and shaping how we act, rather it is a continued process of engagement with the world and with one's self (de Haan, 2020b; Fuchs, 2017; Nielsen, 2020b; Thompson, 2007). This is a fundamental difference when compared to many other psychotherapeutic approaches. Cognitive Behavioral Therapy [CBT], for example, is ultimately based on a linear

model of cognition whereby we have certain 'core-beliefs', which then bias the way we interpret situations, shaping how we think, feel, and act (J. S. Beck, 2020). The therapeutic goal in Beckian CBT then, is to explore ones thinking enough to recognize how these 'core-beliefs' are encouraging biased or irrational ways of thinking, and thus feeling and acting. Behavioral strategies are utilized within CBT, but they are typically understood as 'experiments'; in which the person gathers counter-evidence to their core beliefs, and which thus ultimately work by changing our thinking. Within this model, core-beliefs and thoughts are given a certain priority/centrality, and it is from these and other 'cognitive errors' that mental disorders are ultimately seen to flow. A similar focus on cognition or 'the mind' and the way it shapes emotion and behavior can also be seen in psychoanalytic approaches which typically seek to understand or resolve hidden conflicts, drives, or other unconscious motivations that are seen to support dysfunctional behavior. Under the 3e view however, 'the mind' is understood in a *circular* rather than *linear* manner, and thus not locked away from the world (Fuchs, 2017). Dysfunctional patterns of thinking, feeling, and acting, are not seen to *stem from* dysfunctional core-beliefs locked away in the mind, but rather to *emerge within* the circular engagement between organism and world over time. Moreover, thinking and languaging are seen as important aspects of human meaning-making, but are not given *a priori* explanatory privilege in shaping human distress and dysfunction. Thinking, languaging, attending, remembering, imagining, these are all understood as *things we do* as organisms. Just like every other behavior, they are shaped by our evolutionary history, cultural history, individual history, context, and embodiment; but as part of our history they continue to unfold as we walk into the future. No matter what form sense-making takes, it remains an historically shaped, active, and world-involving process.

Given this underlying model of cognition as sense-making, the emphasis in clinical formulation under 3e Psychopathology should not be on inferring mental/static/theoretical/dualistic constructs that seem to explain an unhelpful pattern of behavior (e.g., core beliefs, drives/conflicts, personality types, or 'trauma' as an energy lodged in the body). Rather, it should be on breaking down and identifying the constituent *tendencies* or *recurring patterns* in sense-making that constitute or

contribute to the problem at hand and explaining these tendencies/patterns in reference to the person's history, context, and embodiment. This explanatory step is undoubtedly an abductive inference—i.e., an inference to the best explanation—thereby according with ATOM as described across earlier sections, however, the explanation inferred is constrained by the wider commitment to embodiment and the process-orientation of enactivism, as well as a wider recognition of pragmatic values (Haig, 2014; T. Ward et al., 1999, 2016). For example, in a PTSD type presentation, a 3e informed formulation of the phenomenon of hypervigilance developed for the purpose of targeting in psychotherapy would not postulate a hidden belief that 'the world is a dangerous place' from which a 'biased' emotional and behavioral response stems. Rather it would first describe the recurring hypervigilant pattern in the person's engagement with the world as an unfolding process (e.g., constant scanning of the environment for potential threat, the embodied experience of increased fear and anxiety when ambiguous stimuli are noticed, the subtle relief and sense of safety felt when the ambiguity is resolved, the reengagement with scanning behavior). It would then seek to explain this pattern in reference to the person's history with traumatic events, the resulting upregulation of their various embodied threat responses, the myriad of other 'symptoms'/tendencies that maintain a high baseline level of stress/threat (e.g., sleep disruption, intrusive memories), current contextual stressors and threats, the mammalian tendency toward inflexibility and short-term reward when under conditions of stress, and how this behavior is reinforced through the short-term sense of safety it provides. It would also then consider how this behavior itself maintains stress, thus contributing to the maintenance of the wider set of observed tendencies in sense-making that constitute the person's 'PTSD'.

Instead of postulating 'core-beliefs' or other purely theoretical concepts then, formulation under a 3e conceptualization should seek to explain the presenting problem as *a process of engagement and meaning-making which continues to be enacted*. The explanatory tools one utilizes should generally be more thoroughly embodied, developmentally minded, and process-oriented concepts. Examples include but are not limited to: behavioral reinforcement or punishment, behaviors having a previously adaptive function (e.g., hypervigilance and emotional avoidance may

have been useful in a previous abusive context), developmental disruptions to skill development and resulting lack of know-how (e.g., someone never learning to recognize and label certain emotions, accept their own emotions, assert their needs in certain kinds of relationships, or preserve their sense of self-value in the face of others achievement), 'normal' human or mammalian wide regularities in sense-making (e.g., decreased flexibility/creativity when stressed, state-dependent memory, mood lowering with lack of positive activities or purpose, delay-discounting), and the effects of differences in embodiment both directly and in terms of how they may have affected development (e.g., medical conditions, physical or sensory disabilities, neurological differences such as with Autistic persons or those with ADHD, and how these differences may have affected the development of emotional or interpersonal skills). Utilizing such explanatory tools means that the presenting problem is formulated as a historically informed yet actively unfolding process. Biological differences such as genetic predispositions, and social realities should absolutely be recognized, particularly when doing so brings practical advantage, but they should be understood as part of the wider dynamical constitution of the problem rather than as ultimate causes. As well as aligning with the wider enactive view of human functioning, the practical benefit of this is that it highlights the patient's agency—i.e., their active role in the problems they are facing. Rather than being subject to an 'underlying' difference in their cognition or biology, formulating in this way unpacks how a person is continuing to enact a pattern of engagement with the world that is not working for them. Vitally, it offers a sense of why this may be the case, thus highlighting ways that they may have power to change the process, try something new, and perhaps get unstuck.

At this point a general sketch of case formulation under 3e Psychopathology has been offered. In order to continue exploring and specifying some general guidelines for formulation under a 3e conceptualization, I will now return to the taxonomy of approaches to formulation presented earlier. Considering this taxonomy, the various factors vary in the degree to which ones positioning upon them would be constrained by adherence to the theoretical and conceptual assumptions outlined across the earlier chapters of this book. For example, it should be clear from earlier discussion that 3e Psychopathology with its view of

disorders as having a constitution dispersed across the brain-body-environment system would accord with a system-wide approach to formulation over a purely 'psychologically' focused one in a restricted sense. Meanwhile it is not clear that 3e Psychopathology as here developed would immediately point to the selection of any one explanatory style. I will now consider the degree and nature of the methodological guidance offered by 3e Psychopathology for each factor in turn. While I by no means claim to be an experienced therapist, I will at times draw on clinical examples in order to demonstrate the real world impact of these sometimes overly technical and philosophical discussions. I will not cover the 'explanatory purpose' factor as this has already been sufficiently discussed in this current section.

Theoretical Loyalty. The 3e Psychopathology conceptual model of mental disorders recognizes the interplay of causal factors from across the brain-body-environment system, and their complex integration through the agentic sense-making processes of the situated individual. Given the complex and multi-scale nature of this conceptualization it seems unlikely that a formulation grounded in a single theoretical lens will outperform integrative or trans-theoretical approaches that offer an opportunity to draw on multiple perspectives when seeking to explain someone's challenges. As such a 3e Psychopathology orientation should encourage consideration of multiple theoretical perspectives when developing a formulation. In integrating the various perspectives into an understanding of the problem at hand however, a clinician should consider the core principles of: embodiment (i.e., the different perspectives used should not utilize dualistic or overly abstract concepts and should accord with wider knowledge of human functioning), embedment (i.e., the different perspectives used should offer genuine consideration of historical and current context in shaping the problem at hand), enactivism (i.e., the different perspectives used should capture the role of meaning and experience and present the problem as a continually unfolding process) and situated normativity (i.e., highlight/question how the problem is a problem for the client on their own terms). Genuine consideration of these principles, and others—both pragmatic and epistemic—considered throughout this section and summarized in Table 6.1, should sufficiently constrain the explanatory pluralism being prescribed here. In recognizing

that formulations are situated explanations and thereby subject to epistemic and pragmatic values, 3e Psychopathology also accords with a trans-theoretical view of formulation. As described earlier, such perspectives understand formulation as a method or inferential process separate to the particular theoretical tools one brings to bare.

It is also worth noting that the degree of constraint/guidance offered by 3e Psychopathology upon this factor is really only moderate in nature. As discussed, formulation is a situated and practical endeavor as well as an explanatory one and, as discussed, pragmatic values are relevant when evaluating one's approach to formulation. There is therefore nothing directly impeding a 3e-oriented clinician from utilizing a single theoretical lens in the development of a particular case formulation, so long as they have considered reasons for doing so. While it seems unlikely that, compared to an approach utilizing multiple theoretical lenses, a single theoretical lens, such as CBT, will be able to capture as many aspects of the disorder process as it is conceived under 3e Psychopathology, a clinician may still choose to stick to a single theoretical approach for practical reasons. For example, they may have limited time available for the assessment, they may work in a team that likes to utilize a certain shared theoretical language, they may reason that a particular theoretical approach may facilitate engagement by the client, or perhaps the client has requested a particular treatment modality. In short, while a 3e approach may push a clinician towards the integrative or trans-theoretical end of this spectrum, the relative explanatory and pragmatic costs and benefits still have to be considered when choosing which, and how many, theoretical lenses to utilize. The principles of formulation outlined in Table 6.1 represent one way to do so.

Tailoring. As outlined across previous chapters the 3e conceptualization of mental disorder is deeply agential. Even if we come to discover that some currently recognized mental disorders or subtypes thereof have tightly knit essence-like causal structures buried somewhere in the brain, the 3e perspective would push us to recognize that the functional impact of such structures plays out through the agent's sense-making in the world. As such, every presenting problem is assumed to be unique—my depression is not your depression and so on. In short, under 3e Psychopathology, mental disorders are acknowledged as messy, contextual, agential, and world-involving. Under such a view it seems unlikely

that a purely formulaic approach to formulation will ever sufficiently compete with a more flexible and bespoke approach whereby one can shift and adapt to capture the unique challenges of different clients and to respond to the specific needs of the assessment context.

In general then, 3e Psychopathology aligns with a bespoke approach to formulation and holds this an ideal. One caveat to this however, concerns the relationship between formulation and the wider sciences of psychopathology. Earlier, in the nomothetic section of this chapter, I discussed the idea of epistemic units and how their clinical utility is in being able to serve as knowledge bridges between clinicians and the wider research-base. It was discussed, for example, how current DSM-ICD constructs are much too large and unstable to offer clear understanding of a client's problems simply on the basis of diagnoses. The idea of a *phenomena complex* was discussed as a more appropriately sized epistemic unit that, if developed and utilized within explanatory theories, may improve the ability of clinicians to be able to draw on scientific knowledge when formulating. Under a 3e approach to formulation the intention is to develop a bespoke explanation for a client's difficulties—one that is particular to their history and situation—however, this does not mean that clinicians are not free to import such 'phenomena complexes' or other epistemic units into their formulations (for further discussion see: Nielsen, 2022b). There is clearly great practical and epistemic utility in being able to recognize a 'phenomena complex' or other such patterns within a client's presentation that are also recognized in scientific literature (or alternatively that are common within the clinician's regular client base). The process of noting such a pattern is almost pseudo-diagnostic in that the logic is more about pattern recognition than generative abduction. When aspects of the formulation are inferred in this way then, there is a sense in which the process becomes somewhat more formulaic rather than completely bespoke. This does not seem a bad thing however. Utilizing such epistemic units in formulation is efficient and therefore practical, encourages common language, and further allows for formulations to improve as scientific knowledge develops. In instances where this more diagnostic style of inference is utilized however, it is still vital to situate the inferred mechanism within the wider formulation and one's understanding of the client's mode of functioning.

As an example of this, I see many clients who are dealing with difficulties recovering from a concussion/mild traumatic brain injury (mTBI). Most people who experience an mTBI recover within a matter of weeks to a few months, however a significant proportion of people, for a variety of reasons, experience delays in their recovery. Within this population there is a very common pattern that emerges, often referred to as 'boom and bust', whereby someone will attempt to push through their symptoms of headache, fatigue, concentration difficulties and so-on, in order to try and return to important life activities. This pattern often plays a role in slowing recovery as it disrupts the ability to rest and recover, to gradually re-build tolerance to everyday stressors, and to develop a sense of agency over the recovery process itself. This pattern is therefore extremely useful to notice as a clinician. It provides me with a common language to communicate with other professionals and to engage with literature. 'Boom and bust' and its relationship with other difficulties such as sleep and mood disruptions will therefore often act as an important epistemic unit within my formulations with these patients. However, 'boom and bust' is still quite a causally heterogeneous phenomenon. Some of the patients I meet 'boom and bust' due to a difficulty tolerating their anxiety about recovery if they pause and rest, some 'boom and bust' because they have a history with chronic pain and have learnt to habitually ignore interoceptive signals of distress from their body, and some 'boom and bust' because their disrupted sleep-wake cycle has left them so exhausted that they just continue to work by force of habit. 'Boom and bust' then is a vital epistemic unit in my formulations with these clients, and my recognition of it has become somewhat formulaic as I continue to gain experience in this area, however, there is still a clear need to situate this 'boom and bust' pattern within the wider formulation, and within what is known about the client's wider mode of functioning.

It is important to note that, much like the factor above, the degree of constraint/guidance upon this tailoring factor is relatively moderate. There may well be practical reasons to assume a more formulaic approach in a certain context even if committed to a 3e conception of mental disorder and dysfunction, such as their only being funding for a short

number of sessions available. In general though, a bespoke formulation remains the ideal. It should also be stressed that 'flexible and bespoke' is not synonymous with 'esoteric' or 'random'. The best bespoke suit-makers in the world still presumably follow a method which allows them to reflect on and improve their processes and to flexibly pivot their designs to fit diverse bodies. The same seems true for clinicians.

Degree of Collaboration. Under 3e Psychopathology, mental disorder is understood to be a significant disruption to one's agency and to one's ability to respond adaptively to the world as it changes around us. The ultimate intention of any therapeutic encounter or intervention then, should not simply be to alleviate 'symptoms' but to restore and develop agency. Patients are understood to be stuck in a pattern of making sense of and responding to the world that is working against them, not broken and in need of 'fixing'. In this sense, the therapeutic encounter is not usually understood as one whereby the clinician 'acts' on them, but one whereby patient and clinician come together to make sense of the problems the client is facing, and the clinician attempts to scaffold the client in developing and exploring some new ways forward. This is true both for clinicians utilizing psychotherapeutic intervention, and for those using psychopharmacological intervention—3e Psychopathology would encourage a view whereby the ameliorating effects of medication, coupled with support and behavioral change, are used to scaffold the development of agency over the challenges faced, rather than to simply 'alleviate symptoms'. Whatever the intervention tools available, active involvement by the patient/client is seen as essential to both therapeutic change and to the development of good enough formulations under a 3e view. In essence, it is the clients themselves that are figuratively stuck walking the same circular path, therefore they are the ones who have to lay a new path by walking it. Simply telling someone about an alternative path to take is unlikely to be sufficient, for even if they manage to find it, they have not learnt how to find it again in the future. Good formulation from a 3e view therefore, defaults towards being deeply collaborative and experiential in that the ultimate intention is to build agency and the patient's ability to find their own ways forward.

Much like with the earlier factors however, this leaning towards collaboration is only a general guideline, and practical considerations have to be made. To briefly draw on Vygotskian thought, agency is clearly not best developed simply through being told what is happening and what to do about it, but nor is it best developed by being left to one's own devices. Rather, agency is developed through being supported to come to understand, explore, and figure out ways forward, in a scaffolded way whereby the degree of support and guidance is matched to optimize skill development and is slowly reduced as skills and independence develop. While there remains a general default to, and spirit of, collaboration, insofar as a formulation is intended to be therapeutic a 3e orientation supports an approach where a clinician can flexibly shift between more collaborative and more didactic approaches in order to meet the needs and preferences of the patient in front of them.

As an example of this, I often see clients under our national accident compensation scheme and many of these clients are young men injured playing sport or while working in a physically demanding trade. For those unfamiliar with Aotearoa-New Zealand men, a common stereotype is that they are somewhat stoic and tend to deal with difficult emotions in non-verbal ways. While this remains a stereotyped view, it does exist for a reason. When working with these men on difficulties following injury such as mood, anxiety, acute trauma reactions, or suicidality, I often have a very limited number of funded sessions, hard won by a valiant occupational therapist who has argued for their access to sessions (and who has often put in a lot of work to convince the client to actually turn up). Given the time limitations, and the possibility that jumping into discussion of their thoughts and feelings may scare them out the door, I will often pivot to a much more didactic approach to formulation with these men. After a brief assessment and identification of some common mechanisms maintaining their difficulties (e.g., lack of positive activity, sleep disruption, fear-based avoidance) I will often feedback a simple formulation (often couched in an analogy to their favorite food, or something else they have a personal interest in), prescribe some clear steps that should help (e.g., positive activities, clear routine, reducing

alcohol), and motivate the client in reference to something that matters to them (e.g., responsibility to their partners or families, getting back to valued activities). This is a much more didactic approach than I would usually take, to the point that I often feel somewhat uncomfortable simply telling them what to do. However, once they see improvement in the problems they face, they will typically recognize they have more power to influence how they feel than they realized. At this point they will often return, hungry to discuss their insights as to how *they* managed to influence how they think and feel. It is always amazing to see how quickly the stereotype falls down when these men are given scaffolded opportunity. At this point I will shift back to a much more collaborative approach and the formulation continues to develop. In the language of 3e Psychopathology, this and other such therapeutic moves made the world over, are an example of flexibly matching the process of formulation to the client's mode of functioning. It is also perhaps a good example of how the collaborative-didactic spectrum is not as simple as it first seems, and that it is perhaps better understood as a dialectic. Sometimes, due to practical constraints or the particularities of the client, being more didactic is the most genuinely collaborative and agency-building option.

Selection of the Explanans. The conceptual model of mental disorder developed across previous chapters strongly accords with a system-wide approach to formulation, whereby causal factors are considered from across brain, body, and environment, all across time. This however, is far from endorsement of an unconstrained explanatory holism. As we will see when discussing the explanatory target within 3e approaches to formulation below, the target of explanation remains 'psychological' in nature—i.e., patterns/tendencies in sense-making that appear to contribute to the presenting problem. Clinicians oriented to a 3e conception should seek to consider: factors relating to the state of the environment (e.g., family and interpersonal dynamics, access to basic needs such as housing and food, current cultural milieu, exposure to social stress, inequity, or threat), factors relating to the state and experience of the body (e.g., nutrition, physical health/ill-health, pain, sensory differences, medications, drugs and alcohol), and historical/developmental factors including their wider mode of functioning (e.g., past learning, historical

environments, historical health, genetic history, disruptions to typical developmental trajectory). A 3e Psychopathology approach therefore is clearly a systemic one. The aim however is targeted and psychological in nature—i.e., to infer an explanation for the observed tendencies in sense-making that appear to contribute to the problem at hand.

The Explanatory Target. The explanatory target of formulations under a 3e Psychopathology approach are reliable tendencies or patterns within a patient's sense-making that appear to contribute to or maintain the difficulties they are facing. This approach aligns with ATOM and its respect of the data-phenomena distinction as described earlier, and indeed these reliable tendencies/patterns are reasonably analogous to the concept of clinical phenomena within ATOM (Bogen & Woodward, 1988; T. Ward et al., 1999). The importance of this data-phenomena distinction is hard to overstate. Clinicians are very frequently in the position of synthesizing large amounts of information in order to make recommendations for care, or simply to guide their clinical decision-making in the room. Distinguishing between data (e.g., individual items on test scores, or single comments made by patients) and phenomena (e.g., recurring processes of thought observed across sessions by both clinician and patient, consistent patterns emerging across tests scores and self-report, etc.) allows clinicians to not get caught on the tides of unreliable variation in the information they are presented with. In short, before spending effort trying to explain some apparent tendency or pattern, it is vital to pause and consider what evidence there is that it is occurring reliably, and important enough to justify the time and effort it will take to explain it.

This of course raises the question of what counts as reliable tendencies, patterns, or phenomena. Given the complexity recognized within the 3e conception of mental disorder/dysfunction, 3e Psychopathology does not conflict with established answers to this question concerning principles of good psychological or psychiatric assessment. In order to establish reliable patterns so that they may then seek to develop explanations for them, clinicians should utilize multiple sources of information wherever possible. If patterns continue to be present (or to vary meaningfully) across time, contexts, and multiple data sources (e.g., client reports, developmental histories, behavioral observations,

informant reports, psychometric assessments, neuropsychological testing, and historical data such as school reports and previous assessments) then this provides confidence that the patterns inferred are indeed real and worth trying to explain. Beyond this received answer however, 3e thinking, with its roots in phenomenology and its breaking down of the subjective-objective divide, also encourages recognition that the most important source of information is the patient themselves. Through the deep continuity thesis and recognition of the strive to survive inherent within all organisms, there comes a certain trust in the patient. Even in the rare case that patients are actively lying or malingering, it can be assumed that patients are trying to do their best to survive and adapt. Further, as constant witnesses to their own experience, patients themselves are in the best position to report on and gather information about their own sense-making. One must of course maintain an awareness of the imperfection of human memory and issues with biased reporting, but 3e Psychopathology also accords with a general spirit of trust in the client. Through this trust one listens to a patient's experience first, and doubts after the fact in light of conflicting evidence of incongruity, rather than a position whereby one doubts the validity of subjective report from the very beginning. Doing so also has great therapeutic potential through encouraging engaged collaboration and meta-cognitive reflection. Much like quantum phenomena, one cannot actively observe one's own thoughts without changing their behavior. As alluded to when discussing the collaborative-didactic factor, engaging the client collaboratively in the assessment process is often a great way to facilitate engagement and the development of agency. Further, as will be discussed in the following section on the 'nature of truth' within 3e informed formulations, it is not assumed *a priori* under the enactive worldview that subjective experiences are not objective, or are otherwise somehow less valid than 3rd person information.

The Explanatory Style. In accordance with the methodological pluralism prescribed, 3e Psychopathology does not align strongly with any one particular explanatory style. Rather a 3e Psychopathology perspective should encourage clinicians to reflect on how the explanatory style of their formulations can be adapted for different contexts and purposes. There is thereby a freedom to choose an explanatory style or to hybridize

as needed. For example, a mechanistic style of explanation is very useful for explaining the reafferent causal structures that support the maintenance of mental health problems under the 3e view. They are thus well suited for reasoning about the selection of treatment targets and interventions. Mechanistic explanations are also fairly easily summarized into a list format which can be helpful for keeping report writing concise but informative. Narrative approaches to explanation meanwhile, accord well with the historically informed nature of experience and mental disorder under the 3e view. By 'telling the story' of how a client and the challenges they are facing, narrative style explanations often highlight how the problems faced have emerged through the client striving to survive and adapt to difficult circumstance, thus evoking compassion. This can be of clear utility when explaining one's formulation to self-critical clients or support people, and when trying to argue with the powers-at-be for access to resources. Through 3e cognition's roots in phenomenology and complex systems theory there is also clear place for dynamic style explanations. For example, when the precise mechanism is unknown or still coming to be understood, one can simply comment on an observed reliable tendency as one developing part of a wider case formulation, analogous to a differential equation tracking system dynamics in complex systems. For example, one could share with a client, 'it seems like every time you are presented with X you feel Y and respond with Z, does that sound accurate?'. Such a simple dynamic explanation/description, while of minimal explanatory value for the mechanistically minded, can have clear utility in facilitating client engagement and curiosity, and may simply reflect an honest understanding of the problem when clinician and client are not yet able to confidently infer reasonable mechanisms for the observed dynamic. Such descriptions of the relationships between phenomena still have a degree of explanatory value in that they continue to refine the understanding of the problem at hand. In sum, 3e Psychopathology endorses a flexible relationship with explanatory style in order to best meet the contextual demands on one's formulation.

The Nature of 'Truth'. As discussed earlier, the complex and multiscale conceptualization of mental disorder within 3e Psychopathology encourages methodological and explanatory pluralism in the development of formulations. In other words, under 3e Psychopathology it is

assumed that there are multiple valid ways to go about developing a formulation and, even for a single client, there are likely to be multiple valid ways to explain their presenting problem—i.e., different angles from which to understand the client thus capturing different aspects of the challenges they face. This explanatory pluralism thereby brings with it a deep valuing of *epistemic humility*—i.e., holding one's own understanding with appropriate confidence, yet doing so lightly and always being open to alternative viewpoints and ideas. When faced with an alternative perspective on a patient's difficulties, whether from the client themselves or from a collaborating professional, it is natural to want to argue and defend ones understanding. Explanatory pluralism as endorsed here however, encourages us to ask: how is their perspective different to mine, what does it capture that my formulation does not, and what is potentially useful about this perspective?

Clearly the underlying notion of 'truth' here is not one where truth or accuracy can be simply inferred due to predictive value or alignment with current clinical evidence. As mentioned earlier, 3e Psychopathology rather aligns with a pragmatic and epistemically informed approach to 'truth' whereby formulations are subject to a diverse array of both epistemic and pragmatic values/principles that often conflict with each other. Thus, alternative perspectives can be more or less accurate and/or more or less useful in a myriad of different ways. Rather than discuss these various values and principles again in this section, a core selection are summarized in Table 6.1 below. Such principles and values can and should be used in the evaluation of formulations. A related point here is that, under 3e Psychopathology, formulations should be understood to be continually developing things. The same epistemic humility that holds for the comparison of one's own formulation with the perspective of another, also holds for comparison with one own perspective at different time points. Just as sense-making is a continually unfolding process, so too is the process of sense-making about sense-making. One never arrives at 'the truth', rather one should seek to develop a *good enough sketch* during initial assessment and then continually strive to improve it and adapt it to new challenges as they arise.

Table 6.1 Principles/values for the development and evaluation of formulations

Principle/value	Source/reason	Key evaluative questions
Methodological pluralism	Complexity, Humility	How has my process of assessment and formulation constrained my understanding? Given my context, are there other approaches to formulation that may provide greater epistemic or pragmatic value?
Local explanatory pluralism and epistemic humility	Complexity, Humility	Who else has a formulation/perspective on the problem at hand? Does considering these different perspectives highlight areas where my formulation could be improved?
External coherence	Epistemic	Does my formulation fail to cohere with established knowledge in any way I cannot justify?
Internal coherence	Epistemic	Does my formulation make sense? Does my formulation conflict with itself in any way?
Breadth	Epistemic	Does my formulation sufficiently account for all of the phenomena/reliable tendencies inferred during assessment?
Parsimony	Epistemic, Pragmatic	Is my formulation overly complicated? Can I simplify my formulation at all while maintaining its usefulness and accuracy?
Proximity to loci of control	Pragmatic	Does my formulation sufficiently capture parts of the brain-body-enviroment system that I and the client actually have influence over?
Pragmatism/a good enough sketch	Pragmatic	In critiquing and evaluating my formulation, have I considered the practical limitations placed upon me?
Communicability	Pragmatic	Can I communicate my formulation, or at least the necessary parts of it, clearly to the appropriate parties?
Ecological coherence	Embedment	Do I have sufficient information about the client's current contexts? Does my formulation cohere with this information?
Developmental coherence	Embedment	Do I have sufficient information about the client's history and development? Does my formulation cohere with this information? Do I have a sense of the client's mode of functioning, and does my formulation accord with this?

(*continued*)

Table 6.1 (continued)

Principle/value	Source/reason	Key evaluative questions
Physiological coherence	Embodiment	Do I have sufficient information about the client's medical and neurodevelopmental history, physical capacity, and experience of their body? Does my formulation cohere with this information?
Experiential coherence	Enactivism	Do I have sufficient information about the client's experiences/difficulties to be trying to explain them? Does my formulation cohere with what the client's description of their experiences? What do the patient's experiences mean to them, and have I considered this in my formulation?
Cultural coherence	Enactivism, Embedment	Do I have sufficient information about the client's cultural identity as they understand it? What cultural spheres does the client navigate and what is their experience of this? Does my formulation cohere with this information?
Reflexivity	Enactivism, Humility	Are there any assumptions I may be making based on my own culture, politics, or experience?
Awareness of process	Enactivism	What has my client's experience of assessment and formulation development been? Has this process supported their sense of agency/ know-how regarding the challenges they are facing?
Situated normativity	Enactivism	Is this presenting problem a problem for the client or for someone else?' Am I imparting any wider normative judgments based on statistical normality or my own cultural biases?

The Sense-Making Spiral, a Tool for Clinicians

Synthesizing many of the themes discussed across this section on formulation, Fig. 6.2 presents the sense-making spiral, a clinical tool to provide structure for the exploration of moment-to-moment sense-making in a

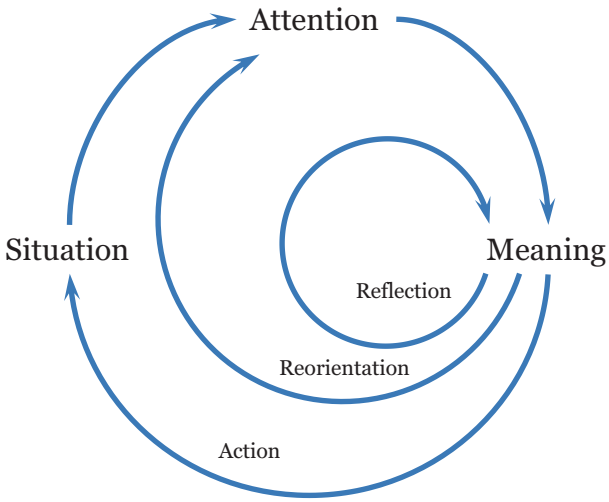

Fig. 6.2 The Sense-Making Spiral. This clinical tool is designed to assist with the collaborative exploration of a client's sense-making. When used across multiple situations, analyzing a patient's experience using this tool may facilitate the identification of reliable tendencies in their engagement with the world that may contribute to the challenges they are facing (copyright retained by Kristopher Nielsen, ©CC-BY-NC-SA)

collaborative manner. The sense-making spiral breaks down moment-to-moment sense-making, allowing for analysis of meaning-making and engagement with the world at any particular point—currently or in recent history—in a way that highlights the circular, continuous, and embedded nature of this engagement. I have developed this tool to be helpful in the identification of reliable tendencies within client's sense-making during formulation, and—more therapeutically—for encouraging client meta-cognitive awareness and emotional agency. This tool presents sense-making as an ongoing and embedded process. I have so far received positive feedback from clients that I have used this tool with (after having attained their informed consent to utilize a developing tool for which there is no current evidence-base). To be clear, the sense-making spiral simply represents one 3e congruent way to identify tendencies in sense-making, and is intended as a supplement to, not a replacement for, thorough assessment. It may be used explicitly in collaboration with a patient, or as an implicit guide when exploring a patient's experience.

When using the sense-making spiral explicitly, as presented in Fig. 6.2, I first introduce it as a tool for breaking down and thinking about one's experiences and how we responded in a given situation. I will then go through each part explaining the meaning of each and listing out some relevant questions, as I will do now. *Situation* refers to the context—to what was going on. Relevant questions include, where were you, who was there, what was happening, how were you feeling? *Attention* simply refers to what you are paying attention to paying attention to at the time, and how. Relevant questions include: what were you aware of, what were you focused on, was it something in the world, in your body, or in your thoughts? The nature or quality of their attention should also be discussed, i.e., whether this attention is focused, diffuse, or perhaps dissociative. Questions focused on this might include: was your attention tightly focused like spotlight, or were you aware of other things too? *Meaning* then refers to what emotions, bodily reactions, and salient affordances (i.e., pulls toward potential actions) someone experiences in response to what they are attending to. Relevant questions here include: how did that make you feel, were you aware of any responses or sensations in your body, were you aware of anything you wanted to do but didn't? At this point I highlight that we can respond to the situation and how we feel about it in different ways, either through reflection, reorientation, or action. I will then explain that *reflection*, or 'the reflective loop', refers to thinking, considering, remembering, imagining, or other cognitive activities that may feedback and alter how we feel in a situation. *Reorientation* refers to shifting or changing the nature of one's attention. *Action* refers to behaviors that change the situation and context such as speaking, moving, or otherwise doing something. Once I have explained the tool, I will then example its use with a recent situation that the client is interested in exploring. Then, once they are familiar with how it works, I ask them to take some notes for 'homework' on situations where the problem we are exploring occurs or is exacerbated, or simply situations where they felt they did not understand their own reactions.

Using this tool collaboratively in the room to discuss how a patient was making sense of and engaging with various situations will often reveal common patterns. For example, it may be noticed that the client often gets stuck in ruminative or existential thoughts, circling around the

reflective loop (see Fig. 6.1), encouraging a passivity of action and suppressing mood over time. Alternatively, a tendency to focus in on stimuli that exacerbate feelings of threat, anxiety, disgust or judgment may be observed—e.g., ambiguous social cues in social anxiety, a racing heartbeat during panic, potential criticism in depression, or triggers for particular obsessions in OCD. As other examples, one can also notice tendencies to reorient away from and thus avoid certain stimuli, to be pulled into intrusive memories, to belittle oneself or self-pathologize in the face of difficulty, or to fail to reflect at all and to jump in and act when angry. It can be advantageous if the client themselves notices the patterns in their sense-making, and drawing out the progress through the spiral as the situation unfolds appears to facilitate this.

Once the client is familiar with using the sense-making spiral as a data collection tool it can also serve therapeutic functions beyond simply passively developing meta-cognitive or mindful awareness. For example, the visual structure of the sense-making spiral also highlights many of the choices one has available when managing difficult experiences. We can reflect on and challenge our own thoughts, reorient our attention towards distracting or calming stimuli such as our breath or features of the environment, or we can act on, change, or leave the situation. These various options are all reflected in different pathways through the spiral. In this way the sense-making spiral already introduces scaffolding for the continued development of emotional agency right from early in the assessment process. Another advantageous function of the sense-making spiral is that it can be used to explore or acknowledge or explore hypothesized relationships between the recurring tendencies uncovered and the client's history or context. Visually I may encircle the entire spiral, labeling this 'history', re-present some of the identified tendencies in sense-making, and then attempt to facilitate discussion about where these recurring tendencies in engagement with the world may have been learnt. An example question might be: can you think of a time in your life, or perhaps a current context, where responding in this way may have been helpful, kept you safe, or met some other need? In effect such recurring tendencies represent embodied predictions as to the state of the world and how best to respond to it, shaped by the client's embodiment and history.

In sum, the sense-making spiral provides one way to explore client's moment-to-moment sense-making, and repeated use may reveal recurring tendencies/patterns in the way that the client engages with the world. It is such patterns/tendencies, revealed and validated through thorough assessment, that are seen as the appropriate targets of explanation under 3e Psychopathology during the formulation process. Using this tool in a treatment-oriented way also represents a plausible and 3e congruent way to facilitate meta-cognitive reflection and emotional agency.

6.4 Explanation in Short

In this chapter I have begun exploring some implications of 3e Psychopathology for the task of explanation. After briefly reviewing some resent insights into the nature of explanation itself I then considered explanation as it is undertaken by researchers—i.e., the development of nomothetic explanatory theory. I argued in broad terms, and in accordance with Fuchs (2017), that 3e ideas demand a methodologically and explanatorily pluralistic approach to psychopathology research. Given the scale of this topic I then focused in on two common ways to organize and target research and explanatory theory, namely: DSM-ICD syndromes and using the RDoC framework. I briefly highlighted some common concerns that DSM-ICD syndromes lack specificity and stability in that they are overly heterogeneous. I then argued that the RDoC approach, when viewed through the lens of 3e Psychopathology, is really aimed at producing neurologically focused component ingredients for our explanations of psychopathology, rather than at developing comprehensive explanations in their own right. I then briefly re-presented the RAP as one plausible way to systematically develop 3e congruent explanatory theories.

In the latter half of this chapter I then shifted to considering explanation as it is undertaken by clinicians—i.e., the task of developing formulations. I presented a rough methodological taxonomy capturing some of the core ways that approaches to formulation differ. I argued that 3e Psychopathology does not point clinicians to any one particular way to formulate, arguing instead for a flexible and pluralistic approach,

gently constrained and guided by 3e principles alongside wider epistemic and pragmatic values. I also argued that 3e Psychopathology encourages clinicians not to understand their clients' difficulties as 'locked away' in their mind, but as complex processes of making sense of and engaging with the world that continue to unfold and develop. I claimed that 3e Psychopathology places strong emphasis on genuine collaboration, epistemic humility, and the fostering of patient agency above and beyond alleviation of 'symptoms'. Towards the end of this discussion I presented two clinically focused resources that summarize core themes from this half of the chapter: Table 6.1 presented a list of principles/values and related questions that can be used in the evaluation of formulations and the processes used to develop them, while Fig. 6.2 presented the sense-making spiral as one way to collaboratively break down and explore moment-to-moment sense-making.

Considering the task of explanation as a whole, a central theme is that 3e Psychopathology as developed within these pages does not point us to any one approach. The complexity highlighted by the 3e view pushes us towards a critical and gently constrained pluralism in our efforts to explain and understand mental disorders.

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