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Beyond 'Salience' and 'Affordance': Understanding Anomalous Experiences of Significant Possibilities

Matthew Ratcliffe and Matthew R. Broome

Abstract: Schizophrenia and psychosis are associated with wide-ranging phenomenological disturbances. These, it is often said, involve 'aberrant salience'. Others have sought to account for the relevant phenomenology in terms of 'affordance'. In this chapter, we identify a shortcoming that is common to both approaches. There are many distinctions to be drawn between different kinds and different aspects of salience, some or all of which might prove clinically relevant. Consequently, terms such as 'salience dysregulation' and 'aberrant salience' lack the required discriminatory power. They should serve only as a starting point for the task of understanding anomalous experience in psychiatric illness and relating it to neuroscience. We go on to argue that recent appeals to experiences of 'affordance' fall short in the same way. Better, we suggest, to acknowledge the many subtly but importantly different ways in which human experience is permeated by a sense of the possible than to mask this complexity and diversity by settling for concepts that are insufficiently discerning.

1. Experiencing Aberrant Salience

This chapter discusses whether and to what extent the concepts of 'salience' and 'affordance' can assist us in understanding anomalous experience in psychiatric illness. First of all, we ask whether types of experience associated with schizophrenia (and potentially other diagnoses as well) are adequately accommodated by appeals to 'salience dysregulation' or 'aberrant salience'. We argue that the concept of 'salience' is insufficiently discriminating and therefore fails to do the required work. We go on to ask whether these and other wide-ranging phenomenological disturbances might be better conceptualized in terms of altered 'affordance'. We show that the same problem arises here.

In addressing the nature of salience dysregulation, we focus on the influential and ambitious account developed by Shitij Kapur and colleagues, which seeks to integrate phenomenology, neurobiology, and pharmacology (Kapur, 2003; Kapur, Mizrahi, and Li, 2005). However, most of our points apply to discussions of salience dysregulation more generally. Kapur's account is concerned with aberrant salience in the early stages of schizophrenia and how

it relates to the subsequent formation of hallucinations and delusions. However, it is debatable whether the relevant phenomenology is specific to schizophrenia, with potential implications for the continuing employment of 'schizophrenia' as a diagnostic category. For instance, Jim van Os (2009) proposes 'salience-dysregulation syndrome' as a more encompassing alternative, one that is consistent with the diagnostic non-specificity of certain delusions and hallucinations and also with evidence pointing to the non-specificity of neurobiological changes in psychosis (e.g. Jauhar et al., 2017).[1] The legitimacy of diagnostic categories is not our concern here; we are interested in what experiences of 'salience dysregulation' consist of, regardless of where they might arise. Nevertheless, the answer might well turn out to have implications for psychiatric classification, research, and treatment. Suppose, as we will suggest in what follows, that 'salience dysregulation' accommodates a diverse range of predicaments. Greater sensitivity to these differences could feed into the task of refining or revising diagnostic categories. It may also turn out that different experiences are generated in different ways and amenable to different treatments. Hence the task of phenomenological clarification is an important one and, in this chapter, we draw a number of distinctions that can feed into it.

We should begin by distinguishing between phenomenological and non-phenomenological conceptions of salience. In the former case, things are experienced as salient, whereas, in the latter, one might instead talk of detection, responsiveness, neural activation, solicitation of behavior, and so forth. We are concerned exclusively with the phenomenology, with *experiences of salience*.[2] We further restrict our discussion to *passive salience*, where things appear conspicuous in one or another way without the prior involvement of active attention or explicit thought. That said, we acknowledge that the distinction between active and passive salience will not be clear-cut and that the two most likely interact in any number of ways.

One might think of an experience of salience in very broad terms, as something or other appearing conspicuous. However, for Kapur, salience involves something more specific than an amorphous 'pop-up' effect. Drawing on work by Berridge and Robinson (1998) and Berridge (2007), he emphasizes 'incentive' or 'motivational' salience. This consists in a basic form of

[1] When the relevant phenomenology is examined, it becomes apparent that the category 'schizophrenia' accommodates a range of different phenomenological predicaments, some of which are difficult to distinguish from forms of experience associated with other psychiatric diagnoses (Ratcliffe, 2017, Chapter 6).

[2] A comparable distinction is also made in recent work on 'predictive coding'. For instance, Andy Clark (2016) distinguishes conscious 'surprise' from non-conscious 'surprisal', where what minimizes surprisal can be very surprising.

'wanting', which is both perceptual and motivational in character: 'it transforms the brain's neural representations of conditioned stimuli, converting an event or stimulus from a neutral "cold" representation (mere information) into an attractive and "wanted" incentive that can "grab attention"' (Berridge and Robinson, 1998, p.313). Incentive salience can persist regardless of whether or not one experiences 'reward' or anticipates doing so.[3] Hence it is distinct from both reward-perception and reward-learning. Berridge and Robinson (1998, p.348) extend their account so as to accommodate aversive stimuli as well. Here, they suggest, a positive valence attaches to a perceived alternative. For example, being frightened of something may involve feeling positively drawn to a place of safety. The phenomenology of salience is thus a matter of practically engaged anticipation, something that is either integral to perceptual experience or at least intimately associated with it. In perceiving a current state of affairs as salient in a positive or negative way, we are drawn to act so as to realize or avoid a possibility that it points to, a possibility that *matters to us*.

It is this conception of salience that Kapur (2003) applies to the phenomenology, neurobiology, and pharmacology of schizophrenia. Salience is construed as a kind of motivational pull that attaches to objects of experience, encompassing both attraction and aversion. At the neurobiological level, it is regulated by mesolimbic dopamine, which modulates attraction and aversion. Consistent with this, pharmacological intervention for schizophrenia and psychosis targets the dopamine system. Kapur suggests that psychosis originates in experiences of non-localized, aberrant salience. Things in general may appear more salient than usual. Furthermore, they appear salient in unusual and unstructured ways. These do not map onto the actual physical properties of perceived entities or reflect one's various projects and concerns, but they persist nonetheless. Delusions are an outcome of attempts to make sense of the experience, to impose an interpretation that accommodates the strange and disordered manner in which things appear:

> ….endogenous psychosis evolves slowly (not overnight). For many patients it evolves through a series of stages: a stage of heightened awareness and emotionality combined with a sense of

[3] However, Berridge and Robinson (1998, p.341) do acknowledge that the line between incentive salience and hedonic pleasure is sometimes unclear, given that experiences of incentive salience can themselves be pleasurable: 'a person who took a drug that made the world seem a more attractive and rewarding place, by selectively enhancing incentive salience, might find it difficult to describe those effects without invoking hedonic concepts'.

> anxiety and impasse, a drive to 'make sense' of the situation, and then usually relief and a 'new awareness' as the delusion crystallizes and hallucinations emerge. [….] It is postulated that before experiencing psychosis, patients develop an exaggerated release of dopamine, independent of and out of synchrony with the context. This leads to the assignment of inappropriate salience and motivational significance to external and internal stimuli. At its earliest stage this induces a somewhat novel and perplexing state marked by exaggerated importance of certain percepts and ideas. (Kapur, 2003, p.15)[4]

It is not entirely clear from this whether or not an experience of aberrant salience should be regarded as *perceptual* in nature. The answer hinges on whether a liberal or more conservative conception of perceptual content is adopted. We are inclined towards the former. However, even if one resists the designation 'perceptual', our various points can be made just as well with reference to how one's current surroundings are *experienced*, in contrast to what might be inferred from that experience. Nevertheless, it should be added that aberrant salience is not *exclusively* perceptual in nature. According to Kapur's model, dopamine dysregulation underlies the aberrant salience of both external events and one's own mental states. There is, he says, 'aberrant assignment of salience to the elements of one's experience, at a "mind" level'. Hallucinations arise when one's own 'internal representations' are experienced as salient in anomalous ways (Kapur, 2003, p.13).

This approach has been criticized in a number of ways. At the very least, it needs to be supplemented. Even if salience dysregulation is the proximal cause of psychosis and dopamine is a key element of the 'final common pathway' (Howes and Kapur, 2009), a more complicated story needs to be told about a range of distal causes, including -potentially- genetic vulnerabilities, developmental trajectories, traumatic events, social isolation, migration, and substance abuse. Neuroscience can only take us so far and, to accommodate all of these factors, an interdisciplinary approach is needed (Broome et al., 2005). In addition, it remains unclear how, exactly, salience-dysregulation leads to psychosis, in the context of schizophrenia and more widely. It is arguable that additional factors, such as interpretive biases, are also required (Howes

[4] The account is thus reminiscent of Jaspers (1963), who maintains that delusions arise when one seeks to escape the uncomfortable tension and indeterminacy of 'delusional atmosphere' (a pervasive and enduring experience of one's surroundings as significant in unfamiliar and incongruous ways) by imposing a more determinate interpretation upon the experience.

and Nour, 2016). However, criticisms generally concern the hypothesized causes and effects of salience dysregulation, rather than the nature of the experience. Even critics of Kapur tend to assume much the same conception of salience. For example, Howes and Nour (2016, p.3), while acknowledging that salience is more 'multifaceted' than sometimes supposed, describe the relevant experience as 'the world seeming pregnant with significance, generating feelings of apprehension and a sense that the world has changed in some as yet uncertain way'. One might think that descriptions like this make it clear enough what an experience of aberrant salience consists of. So we can leave the phenomenology behind at this point and get on with investigating how salience dysregulation is caused, how it contributes to psychosis, and what the implications of this are for classification and treatment. However, that would be premature. 'Incentive salience', as conceived of by Berridge, is equally applicable to the lives of humans and rats (his experimental subjects being the latter).[5] As we will show, it fails to accommodate more subtle phenomenological distinctions that apply in the human case. Likewise, the notion of 'aberrant salience' encompasses considerable diversity, pointing to the likelihood that different kinds of disturbances predominate in different people at different times.

In Section 2, we will suggest that, once one starts distinguishing the various dimensions and types of salience, 'aberrant salience' is revealed as something in need of more detailed and discerning analyses. Then in Section 3, we will turn to recent formulations of J. J. Gibson's 'affordance' concept, which, it has been suggested, have the discriminatory power needed to capture different kinds of phenomenological disturbance. However, we will show that it suffers from similar shortcomings. While both 'salience' and 'affordance' might facilitate initial steps towards an appreciation of the relevant phenomenology, they are blunt tools that only get us so far. At a certain stage in our inquiries, they are swamped by the many important dimensions of variation and lose their explanatory power.

2. The Subtleties of Salience

We can at least assume a distinction between localized and widespread salience dysregulation. While the former involves experiencing something specific as unusually salient or things looking strange in the context of a particular, transient situation, the latter is unbounded and may even involve everything appearing somehow odd, with some things appearing odder than others.

[5] Howes and Nour (2016) also note the methodological difficulties involved in extrapolating from animal studies.

Schizophrenia is taken to involve the latter. The claim is that dopamine dysregulation leads to indiscriminate assignments of significance or importance to stimuli. Is this sufficient to identify a singular type of phenomenological disturbance? We suggest not. Consider the following definition of salience dysregulation: 'aberrant assignment of novelty and salience to objects and associations' (Kapur, Mizrahi, and Li, 2005, p.59).[6] Reference to novelty *and* salience suggests that the two are not simply to be identified, and that seems right. Although salience is often associated with novelty, something can be salient without at the same time appearing novel. When watching a film, someone being eaten by a shark that is somehow flying in a tornado might be most salient at a given moment. However, it is neither novel nor surprising when the film is *Sharknado*. A further distinction needs to be drawn between something's being novel and its being unexpected, given that a significant change need not come as a surprise. These points apply equally to a range of other situations. For instance, a person you have been waiting for will be experienced as salient when she arrives, even though her arrival at that place and time was anticipated.

Of course, one could respond that the shark is expected to bite and the person to arrive, but not at that *exact* moment. This points to the need for a more refined account of what it is for something to be novel or surprising, as there are many different ways in which something might deviate from the mundane or fail to accord with one's expectations. However, it seems clear that at least some experiences *do* involve salience without surprise. Something can look incongruous and consequently conspicuous even if one knows it is there and has seen it many times. And some things remain salient despite being neither novel nor incongruous, as when the pile of papers sitting on one's desk is experienced as *urgent*. Indeed, what appears salient in a given situation and context of activity is often just what we are most concerned about, where our concerns reflect a range of different commitments, values, habits, and projects. Thus, aberrant salience could involve something appearing novel or surprising in one or another way when it is not, something appearing somehow incongruous in one or another way when it is not, and / or something appearing important in a way that does not reflect its relationship to a wider context of activities and concerns.

There are many other variables at work in our experiences of salience, any of which could feed into the task of distinguishing and categorizing forms of salience, aberrant or

[6] Similar definitions are adopted by others. See, for example, an influential discussion by Fletcher and Frith (2009).

otherwise. For instance, it might seem obvious that salience comes in degrees, but it is just as important to appreciate that there are qualitatively different *kinds*. We do not merely experience things as more or less conspicuous in relation to a wider context; they also *matter* to us in different ways. Hence, *salience*, in the relevant sense, is equally a matter of *significance* (Broome et al., 2005, p.26). Something might appear threatening, fascinating, of immediate relevance to current activities, and so forth. Categorization of stimuli as attractive or aversive will not suffice to capture the diversity (an observation that also illustrates the limitations of research on incentive salience in non-human animals, the conclusions of which do not apply in a straightforward way to the complexities of human experience).

One might object that salience and significance / mattering are distinct aspects of experience, that things can appear significant *or* salient *or* both. However, a distinction between salience and significance is most likely an artefact of the language used to describe experience and should not be taken to indicate that the relevant experiences actually incorporate two dissociable components. If we seek to capture the relevant phenomenology, it is more accurate to say that something appears salient *as* threatening, *as* enticing, *as* useful. That it is experienced as mattering in one of these ways implies that it is also salient - phenomenologically conspicuous. There is no need to postulate an additional property of salience. Pure salience is an abstraction from the experience, not a part of it. That things do, on other occasions, appear salient in some way without at the same time appearing significant does not imply that experiences of significance should be construed additively, in terms of salience plus something else.

Such considerations might well prove important when it comes to the further analysis and categorization of salience dysregulation. Some variants may involve disruption of only certain *types* of significant possibility or at least the predominance of a certain type of disruption. In other instances, those possibilities may be largely or wholly unaffected, with the disturbance focused elsewhere. The alternative would be to insist that dysregulation is completely unstructured in every case, that any kind of significant possibility attaches to anything whatsoever. But salience dysregulation is not simply a matter of anarchic salience (where forms of salience attach to things at random) and / or globally heightened salience. For instance, there is a difference between a world where everything looks somehow menacing and unpredictable, where a strange and pervasive feeling of foreboding predominates, and a world where everything looks somehow unexpected, perceptually fascinating, and oddly cut off from any relationship

with practical activities. The former is primarily a matter of anticipation while the latter is more a matter of experienced conflict between what is present and what was previously anticipated. Along with this, ways of mattering differ – one case involves dread and the other fascination. Both forms of experience are compatible with a schizophrenia diagnosis.

There is also considerably more to be said about how salient entities and events can conflict with anticipation. The extent to which and manner in which something is anticipated cannot be extricated from the kind of significance attached to it. For instance, a threat may appear inevitable or merely possible, immediate or far away. Reflecting these differences, things threaten us in different ways – to be terrified in the face of something is different from dreading its arrival. Anticipation also has varying degrees of determinacy. A threat might be specific and concrete or far less determinate (as in a general air of foreboding). When an event is -in some way- unanticipated, there remain several ways in which it might appear *novel*. In one scenario, it negates what was anticipated – one reaches out to pick up a cup of coffee, only to find out that it is filled with water. It should be added that negation comes in different forms: 'it is not what I took it to be'; 'it is not there at all'; 'it does not possess the properties that I took it to possess'. Alternatively, something might conflict with one's expectations and thus appear surprising but without negating them. In such a case, it may or may not appear incongruous. For example, an unanticipated encounter with a friend need not involve any sense of negated expectation, although it can sometimes involve incongruity: 'what on earth are *you* doing *here*?'

As all of this illustrates, salience is not just a matter of experiencing what is *actually present*. Things appear salient in the light of (a) what was anticipated prior to their arrival and / or (b) what is now anticipated from them. Experience is thus permeated with the anticipation, fulfilment, and negation of significant, variably determinate possibilities.[7] Consequently, things appear salient in a range of different ways. In cases of *aberrant* salience, there is an additional distinction to be drawn between experiencing something as salient in a way that *is* aberrant and experiencing it *as* aberrant. For example, there is a difference between experiencing the sofa in one's lounge as menacing and experiencing it as strangely menacing (given a mismatch between that entity's physical properties and the kinds of significant possibilities it points to). This points

[7] It is arguable that a phenomenological account of the manner in which experience incorporates anticipation is complemented in various ways by recent work on predictive coding and predictive processing, work that has also been related to the topic of aberrant salience and dopamine dysregulation in psychosis. See Ratcliffe (2017, Chapter 6) for a discussion.

to a further question concerning the source and type of normativity at stake when we refer to salience as 'aberrant'. Is it a biological, epistemic, and / or phenomenological 'ought'? One might answer 'all three', but they do not always go together. For instance, a non-localized experience of everything being somehow not right might well be biologically 'normal' or even 'functional' under certain conditions, such as illness or threat perhaps. And whether or not such an experience enhances or interferes with epistemic abilities will depend on the situation, which may or may not be unusual in relevant respects. Conversely, an experience could be somehow biologically 'wrong' or epistemically misleading without itself incorporating any sense of wrongness Regardless of the source of normativity, there are further distinctions to be drawn between different kinds of deviations from a norm. Something's appearing salient *when it should not do so* differs from its appearing salient *when it should, but not in the way that it does* and from its *not appearing salient when it ought to* (according to one or another criterion). In the latter case, the absence of salience can itself be salient.

Another important variable to consider is whether an experience is modality-specific and which modality or modalities it involves. As noted earlier, we might think of salience as principally perceptual in nature – it is a matter of how our surroundings appear to us and how various things relate to our concerns and potential activities. But it is arguably much broader than this. The weak point in an argument might equally be described as 'salient', as might some feature of an imagined situation or remembered event. Furthermore, it is not simply the case that we experience something as 'perceived', 'imagined', 'thought', or 'remembered' and, in conjunction with this, experience it as salient in one or another way. The kinds of salience attached to an experience also contribute to our sense of its being one and not another *type of experience* – an experience of perceiving, anticipating, remembering, imagining, or thinking. To explain further, it seems reasonable to maintain that the hallmark of perceptual experience is a sense of 'presence' (e.g. Noë, 2004). Thus, when we have a perceptual experience of a tree, that experience is not exhausted by its sensory-perceptual content. We also experience the tree as *here*, *now*. It is this 'here, now' that constitutes our sense of the experience as unambiguously perceptual in nature. However, objects of perception sometimes look strangely unfamiliar, not quite there, somehow unreal, to the point where it no longer feels like an unambiguously perceptual experience. Erosion of the sense that one is having a perceptual experience is attributable -at least in part- to aberrant salience. A perceived entity that does not offer the usual

types of salient possibilities associated with specifically *perceptual* experiences may also appear salient in lacking those possibilities. It stands out, in appearing somehow akin to an imagined or remembered entity – not fully there. Alternatively, a type of salient possibility that is more usually specific to perceptual experiences might attach to the contents of memory or imagination. With this, the sense that one is imagining or remembering, rather than perceiving, is eroded (Ratcliffe, 2017). For instance, suppose that you cannot help imagining having done *p* and feel intense guilt every time you do imagine having done *p*. The kind of significance attaching to *p* is likely to diminish, to some degree, your sense of merely imagining rather than remembering *p*. Salience plays a dual role here: an experience can be anomalous and thus salient, given that it incorporates uncharacteristic forms of salience.

Salience is thus integral to the phenomenological constitution of intentionality, to our grasp of the distinctions between what is currently the case, what was the case, what is not and never was the case, and what might be the case. For that reason, it is not sufficient to refer to 'aberrant salience' within one or another modality. Associated disturbances of intentionality should also be acknowledged. Kapur (2003) takes delusions to be beliefs that are 'highly improbable'. However, wide-ranging salience disruption can erode one's grasp of the distinction between what is and what is not the case and -with this- the *manner* in which one believes. For instance, the relevant phenomenology might straddle the boundaries between experiences of believing and imagining (Ratcliffe, 2017). Such 'beliefs' are not merely anomalous insofar as they have highly implausible contents and are maintained despite evidence to the contrary. They also involve a form of intentional experience that is different in kind from that associated with more typical forms of believing.[8]

A consideration of the modal structure of intentionality also complicates the issue of what it is for something to appear salient in the guise of incongruity. One might think that this involves having a perceptual experience of something that fails to cohere with a wider perceptual experience of one's surroundings. However, something could appear incongruous due to its offering salient possibilities of a kind that are more usually associated with another modality of intentionality, or its pointing to a blend of salient possibilities that more usually belong to distinct modalities. Aberrant salience could thus involve inter-modal tensions and conflicts rather than

[8] An appreciation of how salience dysregulation can impact on the phenomenology of belief may also help to clarify the relationship between aberrant salience and delusion – how exactly the former disposes one towards the latter.

just intra-modal anomalies. Another potential scenario involves tension between the salient possibilities attached to perceptual experience (which may all remain specific to perception) and the kinds of salient possibilities that concurrently arise in other modalities, such as memory and imagination. For example, suppose that you meet Person A and have a flood of memories involving Person B, while anticipating interactions with Person C. Here, there would be a pervasive sense of incongruity, in terms of which more localized ways in which Person A and her activities appear 'salient' should be understood.

Another important point to keep in mind begins with the uncontroversial observation that salience is often relational in structure: entity *x* appears salient in relation to potential scenario *y*, which is itself salient in the context of value *z*, and so forth. Salience should not be conceived of in an overly atomistic way; it would be more accurate to say that human experience incorporates a variably integrated web of salient possibilities. Kapur (2003, p.15) states that dopamine release is ordinarily 'stimulus-linked' and that schizophrenia involves 'stimulus-independent release of dopamine', where salience is created rather than detected. However, he also acknowledges that 'detection' takes place relative to a backdrop of concerns and activities, which determine whether and how something is salient: 'Under normal circumstances, it is the context-driven activity of the dopamine system that mediates the experience of novelty and the acquisition of appropriate motivational salience' (Kapur, Mizrahi, and Li, 2005, p.61). Hence salience is partly a matter of whether or not something coheres with a wider, structured context. In virtue of what, though, does that larger context hang together?

For a typical adult human being, the kinds of salience that things have are generally symptomatic of variably idiosyncratic sets of cares, commitments, concerns, relationships, projects, norms, habits, and so forth. Something appears salient to me in light of my current activities and requirements, relative to a larger project that is itself intelligible in relation to my cares, commitments, goals, and plans. The fact that our experiences of salience, in all their diversity, are structured and largely consistent is a reflection of the extent to which a human life is structured and consistent. That structure does not just depend on matters internal to the individual; her situation and relations with others are equally relevant. Circumstances such as illness, loss of long-term employment, and bereavement can disrupt entire systems of projects, cares, and concerns, through which things appear significant in consistent and patterned ways. With this, there is a widespread, dynamic, and long-term disruption of salience, which varies in

degree and takes different forms. An experience such as that of profound grief can involve disturbances of salience that appear very similar to those (sometimes) implicated in the early stages of schizophrenia. For example, Helen Macdonald describes a kind of 'madness' that she underwent following the death of her father:

> It was a madness designed to keep me sane. My mind struggled to build across the gap, make a new and inhabitable world. The problem was that it had nothing to work with. There was no partner, no children, no home. No nine-to-five job either. So it grabbed anything it could. It was desperate, and it read off the world wrong. I began to notice curious connections between things. Things of no import burst into extraordinary significance. (2014, p.16)

In this case, what might be labeled 'aberrant salience' arises due to losing a life-structure relative to which things formerly appear salient in temporally consistent, integrated ways. This is quite different, both phenomenologically and causally, from a scenario where a life has structure and, despite this, things start to appear oddly salient. Thus, whether and how a person might be said to experience 'aberrant salience' cannot be extricated from the manner in which she is immersed in the social world. All of those projects, pastimes, commitments, and relationships that are a prerequisite for maintaining a fairly stable, integrated system of significant possibilities are mortgaged to some degree on our relations with specific individuals, other people in general, and the social world as a whole. If you lose your marriage, your job, or both, a whole system of significant possibilities is disrupted. And, if you find other people in general untrustworthy, or even threatening, it becomes difficult to embed yourself in a shared world such that stable patterns of significant possibilities can emerge.[9]

Kapur (2003, p.15) regards the social as a kind of add-on to the more basic phenomenon of salience dysregulation. When delusions eventually occur, he says, 'they are imbued with the psychodynamic themes relevant to the individual and are embedded in the cultural context of the individual'. However, salience is imbued with the social from the outset, reflecting possibilities that depend in multifarious ways on relations with others and on shared projects and commitments that stretch many years into the past and the future. This further complicates the

[9] See Ratcliffe (2017, Chapters 5 and 6) for a discussion of how widespread loss of trust in other people implies loss of phenomenological structure and, with this, a widespread change in the experience of significant possibilities.

nature of 'aberrance'. Whether salience is aberrant and whether it is experienced as aberrant can both be symptomatic of (a) something failing to cohere with a wider context that is temporal, interpersonal, and social in structure or (b) the erosion of a context that ordinarily structures and stabilizes experiences of salience. Given that new patterns of salience need to be forged when past projects and relations have collapsed, it is not clear what qualifies as aberrant during a period of upheaval and what qualifies as a normal or even unavoidable part of adjustment. Such distinctions are surely crucial when it comes to investigating the phenomenology of psychiatric illness, as well as its causes and potential treatment.[10]

The two alternatives we have sketched are not mutually exclusive. Any number of factors could disrupt salience-structuring contexts or interfere with their initial formation. For instance, it could be that certain patterns of social development culminate in relatively unstructured ways of inhabiting the world, which are not framed by cohesive projects and stable commitments. Resultant instability might then render one vulnerable to further salience dysregulation. In short, if something is already precariously balanced, it is easier to destabilize (Ratcliffe and Bortolan, in press). A range of potential scenarios should therefore be considered, which involve importantly different relationships between context-destabilization and salience dysregulation. This is consistent with various strands of evidence indicating that developmental disruption, social isolation, and anxiety can all contribute to vulnerability to psychosis (e.g. Broome et al., 2005).

To summarize, we started off with 'aberrant salience', but have ended up with a host of interconnected variables, compatible with a wide range of subtly different predicaments. These variables include degree and kind of incongruity; determinacy of anticipation; the kind of significance or mattering involved; whether or not something is experienced *as* anomalous; whether and how an experience relates to disruption of life-structure; and whether and how incongruity involves the modal structure of intentionality. Further dimensions of variation include whether and how the salience of things relates to one's potential actions, the actions of

[10] To indulge in a bit of speculation, it could even be that, in some instances, altered dopamine signalling and resultant 'salience dysregulation' operate as a sort of 'system reboot'. Old patterns of significance are no longer viable, given a widespread loss or failure of projects, and so new patterns need to be formed. This is achieved via the loosening of established patterns and the presentation of a plethora of novel possibilities, some of which later coalesce into coherent wholes that reflect new cares, concerns, and projects. Psychosis may arise when this goes awry, for instance, when the person is socially isolated and / or socially anxious in such a way or to such an extent that new patterns form in partial isolation from practical engagement with a consensus world.

others, or impersonal happenings; whether anticipated happenings appear preventable or inevitable; and whether, how, and to what extent one's experience incorporates motivational force. (We will say more about these in Section 3, in turning to 'affordances'.)

Until the full range of potential experiences are distinguished and it is made clear what, exactly, is at play in a given case, it will remain unclear whether and to what extent (a) current diagnostic categories encompass different kinds of salience dysregulation, and (b) forms of salience dysregulation cut across diagnostic categories. Along with this, it will remain unclear which of these variables are most informative when it comes to classification, research, and treatment. We therefore suggest that the beguilingly simple label 'aberrant salience' should give way to a more nuanced, discerning taxonomy, one that makes use of the various distinctions drawn here, and perhaps others as well.

3. Beyond Affordance

We have argued that the term 'salience' lacks the discriminatory power required for psychiatric classification, research, and treatment. However, one might respond that there is another term available, one that is currently employed in more discerning ways and capable of accommodating the various different phenomena we have described. We are thinking of the term 'affordance', originally coined by J. J. Gibson (1979). Like 'incentive salience', this term relates to how we perceive aspects of the environment as salient and significant, in ways that are inextricable from our actions and dispositions to act. In a number of recent discussions, Gibson's original use of the term has undergone considerable refinement and revision. Here, we are not concerned with whether one or another formulation applies more widely. What we want to do is focus specifically on the extent to which phenomenological changes in psychiatric illness can be captured in terms of a sophisticated conception of 'affordance'.

Now, it could be maintained that the affordance-concept is of little or no use in this context, given that affordances are non-phenomenological in nature. On one account, they are environmental properties, which the organism's perceptual apparatus is tasked with detecting. More plausibly, though, they are relational in nature. For instance, Chemero (2003, p.189) takes them to be 'relations between the abilities of organisms and features of the environment', rather than environmental properties. In order to accommodate aberrant salience, the concept must also relate to human *experience* and to the possibilities offered by a distinctively *social* world. An

approach developed by Rietveld and Kiverstein (2014) seeks to do just that. They maintain that the notion of organismic 'ability' should be broadened to include skills. In the human case, these skills further depend on socio-cultural practices. Borrowing from Wittgenstein, Rietveld and Kiverstein suggest that affordances are relative to 'forms of life'; they are possibilities for action that are offered by the environment, but only given a contingent set of 'sociocultural practices' and associated skills. This account dispenses with some of our concerns about 'salience', by acknowledging the inextricability of opportunities for action from contingent patterns of social relations that are susceptible to disruption. Nevertheless, what Rietveld and Kiverstein call the 'landscape' of affordances remains non-phenomenological in character.[11] If we take an individual with a specific set of skills, confronted with a specific situation, relative to a particular form of life, there is a fact of the matter concerning what that situation does and does not afford. This applies regardless of whether or not the relevant affordances are detected or, more specifically, experienced by that individual.

However, Rietveld and Kiverstein also appeal to a more specific 'field' of affordances, consisting of those affordances that an individual is currently responsive to. This can be construed phenomenologically.[12] De Haan et al. (2013) propose analyzing anomalous experiences of significant possibility in terms of affordance-fields, by introducing three variables. First of all, there is the width of the field – how much appears salient (something that relates closely to a capacity for choice). Second, there is the depth of the field – whether currently experienced affordances are structured by longer-term concerns. Third, there is the height of the field – the degree to which things appear salient.

In addressing the applicability of 'affordance' to forms of anomalous experience (and to human experience more generally), we are not concerned with whether the view is true or false. Rather, what is at stake here is the *utility* of the 'affordance' concept - whether, when, and how it

[11] See also Gallagher (2018) and Krueger and Colombetti (2019) for slightly different but complementary conceptions of an 'affordance space'. For Gallagher, an affordance space includes 'the full range of possible affordance fields relative to an individual, including the current affordance field plus any possible changes in that field due to changes in physical or cognitive skills or environment' (p.722).

[12] De Haan et al. (2013, p.7) distinguish landscape from field in the following way: 'The *landscape* of affordances refers to all the possibilities for action that are open to a specific *form of life* and depend on the abilities available to this form of life. The *field* of affordances refers to the relevant possibilities for action that a particular *individual* is responsive to in a concrete situation, depending on the individual's abilities and concerns'.

serves to illuminate something that would be murkier without it. There is a pragmatic choice to be made: what is its discriminatory power; how versatile is it; how useful is it in this particular context of inquiry? Our answer is that many of the concerns we have raised about salience also apply here. A refined conception of affordance is an improvement on mere salience, as it is sensitive to at least some of the distinctions we have drawn. Even so, it remains too blunt a tool and only gets us to the beginning of a phenomenological inquiry into how possibilities are experienced. In the book *Experiences of Depression*, Ratcliffe briefly raises the following worry:

> Things do not simply 'afford' activities; they appear significant to us in all sorts of different ways. It is not helpful to say that a bull affords running away from, while a cream cake affords eating. What is needed for current purposes are distinctions between the many ways in which things appear significant to us and, in some cases, solicit activity. Furthermore, the significance something has for us is not just a matter of how we might act. Some significant possibilities present themselves as certain, and thus as impervious to our influence. (Ratcliffe, 2015, p.61, note 24)

This was picked up on by Roy Dings (2018), who offers a detailed response on behalf of affordances. He allows that such concerns have some basis, but maintains that the affordance-concept can be further refined so as to incorporate the required distinctions.[13] Like De Haan et al, Dings distinguishes between affordances and experiences of solicitation involving them, noting - quite rightly- that experiences of affordance are much less stable than the affordances themselves. He further acknowledges that whether or not an affordance solicits action is symptomatic of concerns and needs. These, he says, are inseparable from a kind of bodily responsiveness through which we experience our surroundings as inviting or demanding certain activities. Things are thus experienced as significant in different ways, in light of different concerns.[14] Dings appreciates that Gibson was concerned with more stable ways in which the environment might be said to offer things to an organism. Even so, he maintains that the concept of affordance can be further applied to the associated phenomenology in an informative way. Dings notes that experiences of solicitation are 'rich and nuanced'. He suggests that this diversity

[13] De Haan et al. (2013, p.7. fn.8) also acknowledge that the concept requires further refinement. Hence the disagreement between us concerns prognosis as much as current utility.

[14] Similarly, De Haan et al. (2015) add 'affective allure' to 'width', 'depth', and 'height', in order to accommodate the qualitatively different kinds of felt significance that a field of affordances might include.

can be accommodated by distinguishing between the 'valence' of an experienced affordance (to be identified with the kind of significant possibility it involves), the 'force' of solicitation, and what he calls 'mineness'. This latter term is introduced to capture the extent to which an affordance is experienced as being close to 'who I am' or, more precisely, 'who I take myself to be' – how that affordance relates to one's 'psychobiography'.

This is certainly more discriminating than mere 'incentive salience'. Combining the various points, it can be said that (a) affordances are embedded in forms of life, reflecting not only abilities but also skills and associated norms; (b) experiences of affordance are more fragile and depend on idiosyncratic, contingent, changeable cares and concerns; (c) affordances reflect, to varying degrees, the structure of a life; and (d) the field of affordances can be further analyzed in terms of width, depth, height, and affective coloration. Is that sufficient? In the remainder of this chapter, we will suggest not.

One problem is that experienced affordances are consistently construed in terms of something *soliciting* or *calling for* one or another form of activity. This eclipses the many different ways in which perceptual experiences relate to potential activities. Something might be salient in no longer affording something; it might be experienced as not affording what it should do; it might afford the loss of other affordances; and so on. And what should one say about something that affords the impossibility of acting upon it? It could be re-described as affording the possibility of acting upon something else, but this would be to misconstrue the relevant experience, which is principally one of *not being able to* do *p*, rather than of *being able to do q*. The fact that *p* does not offer something is *there*, part of the experience. Indeed, the world as a whole can appear in the guise of not offering what it should, what it once did - it is not simply that one's surroundings lack experienced affordances; the lack itself is there.

Questions also arise concerning whether and to what extent we experience affordances as *for other people* but not for ourselves, as when you can see that B has not spotted an opportunity and are desperate for her to realize and act accordingly. Is the experience of affordance any less direct here and, if not, how does this relate to the suggestion that experienced affordances reflect one's 'psychobiography'? Furthermore, just how complicated is the interpersonal structure of affordances – do we experience something as 'affording *p* for them but not for me', as 'affording *p* for me, *q* for her, and *r* for them', as 'affording *p* for them and also *p* for us but only if they don't get there first'?

We could go on, piling on distinction after distinction, so that any appeal to 'affordance' has to be repeatedly qualified in order to pin down the relevant experience and distinguish it from others. However, it is when we further emphasize the temporally elongated structure of human concerns that the concept really starts to give way. For one thing, it is not at all clear where the experience of affordance stops and a longer-term sense of possibility begins: is an experience of affordance restricted to possibilities that can be actualized within the next few seconds or might an affordance concern possible scenarios located in the distant future? In conjunction with this, it is unclear how the content of an affordance is to be specified. And, when our subject matter is *experienced* affordances, the question of content cannot be avoided. We are obliged to provide at least some indication of *what* is experienced when one experiences affordance A or affordance B. Otherwise, we will be unable to distinguish affordance-experiences from one another.

Consider technological affordances. Should it be said that, given a form of life, a set of skills and concerns, an airport, and a plane ticket, that a plane can be experienced as affording 'getting from London to New York'? If so, does it further afford 'getting to New York in time for a meeting with B' or 'getting to New York in time for a meeting with B, which is important in the context of project X, insofar as it offers the possibility of involving Person C in that project', and so forth? How much of this is built into the experience of possibility? Do we allow that experienced affordances sometimes include a variably determinate sense of longer-term possibilities?

De Haan et al. (2013, p.7) seem to acknowledge that the experience of possibility goes beyond that of affordance: 'one not only perceives the affordances that are immediately present here and now, but one is also pre-reflectively aware of future plans and possibilities for action: the affordances on the horizon that one is responsive to, so to speak'. However, this raises problems for any attempt to capture our experiences of significant possibility in affordance-terms. Affordances that are immediately present depend for their intelligibility on others that lurk in the background. A situation offers something now, given that its actualization offers something else, which offers something else, all in the context of a dynamic, structured life. It is unclear where the affordance stops and a more diffuse, temporally elongated sense of possibility begins. Indeed, we see no principled way to settle on a level of description that specifies the content of an 'affordance' but does not go beyond it. To insist on a maximum temporal distance

between an experienced affordance and the time of its anticipated actualization would seem rather arbitrary.

The distinction between actual and anticipated affordance-experiences therefore hinges on how much content is imported into the experience of solicitation. We could say that a departure gate affords the possibility of walking through, boarding a plane, boarding a plane to the United States, or getting to one's meeting with B. All of these things could be integral to a current experience of the possible in some way and to some extent. Even if a fully determinate propositional thought about meeting B is not occurring right now, a less determinate sense of that possibility may continue to shape how one's surroundings are currently experienced. In identifying a specific affordance, there is thus a risk of imposing something with an artificially circumscribed content upon experiences that incorporate a whole range of variably determinate possibilities, stretching from the immediate moment into the distant future, experiences that vary along numerous dimensions. If one attempts to avoid this by instead employing a sparse conception of affordance, involving the immediate solicitation of specific activities, one ends up disregarding forms of life, skills, and idiosyncratic life structures, rendering the concept largely irrelevant to human experiences of significant possibility and their aberrations.

As with salience, it can be added that affordance-experiences are not exclusively perceptual. If the concept is applied to human experience, it also seems plausible that memories, imaginings, and paths of thought incorporate affordances. Furthermore, different kinds and patterns of affordances -what is solicited and how it is solicited- are characteristic of different modalities. For instance, something remembered might afford doing something now: 'Oh no – I forgot to collect the children from school; I have to go!' We could also conceive of a pattern of thought as a form of activity afforded by a situation, as when a philosopher stumbles upon a piece of writing or listens to a talk and has the experience of its pointing to certain significant possibilities for thought, certain paths to be followed. More generally, experienced possibilities do not just involve potential happenings that can be actualized by our bodily activities; they point to possibilities for other modalities of intentionality as well. Consider major life events, such as leaving a job that one has done for thirty years, moving to a new country, or ending a relationship. In such cases, something affords the possibility of reconfiguring one's whole landscape -and thus field- of affordances. What is offered is the possibility of something transforming one's possibilities, in a way that is not limited to the perceptual modality. Even in

more mundane cases, the content of an affordance might be said to include its implications for other affordances in the same and / or other modalities. This is consistent with the postulation of 'affective affordances', aspects of the social and material environment that offer the prospect of altering one's emotional state in one or another way (Krueger and Colombetti, 2019). Given that other affordances are also, presumably, imbued with affect (insofar as they involve experiencing significant possibilities that relate both to one's concerns and to felt dispositions to act), opportunities to regulate one's emotions can be thought of in terms of affording changes to actual or experienced affordances.[15] Again, it is unclear how to specify the content of these affordances.

In considering the relationship between affordances and modalities of intentionality, it is also evident that the affordance-concept lacks the phenomenological depth required to analyze all-enveloping experiential changes of the kinds associated with severe psychiatric illness. Discussions of affordance-experience take it as given that one's surroundings are experienced as 'here, now' and restrict themselves to the manner in which certain ingredients of the here and now solicit activities. However, as pointed out with regard to 'salience', characteristic patterns of solicitation are integral to the sense that one is perceiving at all, that things are 'here, now'. Insofar as talk of affordances takes an experience of presence for granted, it overlooks a more profound phenomenological achievement, one that is often disturbed in psychiatric illness.

Once all of the phenomenological distinctions required to specify what an affordance-experience consists of have been added on, the term 'affordance' starts to look rather hollow in the middle of it all. Gallagher (2018, p.720) summarizes Gibson's central insight as follows: 'The claim is that perception is intrinsically action-oriented in the sense that we perceive things in terms of our pragmatic possibilities for acting on or with them'. We agree that this is an important insight to feed into work on the phenomenology of possibility. However, all it comes down to in the end is that perceptual experience, in all or almost all cases, relates in one or another way to the potential for action. And the relationship is hugely variable, ranging from an immediate solicitation to act in a more or less specific way to a sense of something as curiously removed from any potential or actual inclination to act. When it comes to describing what,

[15] As noted by Broome and Carel (2009), opportunities for the affective manipulation of other affordances, which may be recognized by oneself and / or others, are employed in the context of psychotherapy. However, it can be added that interpersonal regulatory processes of this nature are just as easily described and investigated without reference to 'affordances' (Ratcliffe, 2018).

exactly, various experiences of possibility consist of, the word 'affordance' becomes a placeholder, a blank to be filled in. Although it is easy enough to carry on talking in terms of affordances, once a certain point is reached, the term ceases to do any explanatory work. The exercise of defending its applicability to the phenomenology of psychiatric illness becomes analogous to that of building a house around a brick in order to demonstrate that a brick can function as a viable home. To pinpoint what an experience of X affording Y -anomalous or otherwise- actually consists of, at least the following need to be specified:

- The kind of significant possibility involved
- The experienced likelihood of Y's occurrence
- The temporal distance between X and Y
- The degree of determinacy with which Y is anticipated
- Whether X is experienced as offering possibility Y for me, for you, for us, or for them
- Whether, to what extent, and in what ways Y relates to one's longer-term projects and commitments
- The modality or modalities of intentionality relative to which X is experienced as affording Y
- How Y relates to and perhaps integrates a range of other experienced affordances
- Whether X also affords the alteration of other affordances
- Whether certain significant possibilities are experienced as absent
- Whether the possibility of Y is specific to X or more pervasive
- The specificity of any activities solicited by X
- Whether activities are presented as possible, impossible, easy, difficult, efficacious or inefficacious
- Whether one is drawn towards or away from X, in one or another manner

These distinctions are applicable to localized affordances and to all-enveloping shifts in the 'field' of affordances, both of which can come in many different guises. What we have is a pre-reflective, dynamic experience of interconnected possibilities that differ from one another in various respects. Adding that these possibilities consist of experienced 'affordances' and forcing a diverse range of ways in which experienced possibilities relate to potential activities into the formula 'X affords Y' does not tell us anything more. What does the explanatory work is not 'affordance' *per se* but the myriad qualifications that follow it. One could just as well say simply

that ‘things affect us’ or ‘we are affected by our surroundings’. Being ‘affected’ might sound rather too passive. However, by the same token, ‘affordance’ is too active, at least when we are faced with describing experiences that include the likes of all-enveloping helplessness, perceptual fascination devoid of practical possibility, or a world that no longer solicits activities and appears lacking in a non-localized way.

Granted, the term ‘affordance’ might prove helpful in instilling a preliminary acknowledgement of the manner in which perception is practically engaged. But, like ‘salience’, it is at best an initial step in an inquiry concerning experiences of significant possibility, analogous to the first stage of a rocket that is jettisoned at a certain point. Where detailed phenomenological study is concerned, what is required is a more discerning account of how human experience incorporates a complicated, multi-faceted, dynamic, and cohesive anticipation-fulfilment structure, involving various different kinds of significant possibilities. There is ample evidence that it does, but few attempts to go beyond the basics.[16] This might seem unwieldy, but there is no substitute if our goal is an understanding of human experience that is adequate for research and clinical practice in psychiatry.

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[16] In earlier work, one of us, Ratcliffe, employs the concept of ‘existential feeling’ to capture a variable sense of the kinds of possibilities that the world incorporates (Ratcliffe, 2008, 2015). He still endorses the concept. However, in this chapter, we adopt a broader perspective upon the experience of possibility, something that cannot be captured in its entirety by appealing to existential feeling.

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