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Chapter 9 The recovery of sense of self while coping with negative symptoms

Abstract: Negative symptoms, such as diminished motivational drive, anhedonia, social withdrawal, apathy, and reduced emotionality, are the subject of increasing clinical and research attention. It has become clearer that negative symptoms can be subdivided into experiential and expressive elements, with a variety of phenomenological and metacognitive correlates. In particular, metacognitive difficulties in self-reflectivity around one's wants, interests, and emotional responses play a major role in anhedonia and diminished motivation. This chapter will analyse a range of correlates of negative symptoms including metacognition, neuropsychological, and developmental factors. We will explore how metacognitive difficulties are related to experiences of persistent negative symptoms, and how enhancing metacognitive capacities might support self-recovery. We will also examine how psychological treatments that focus on understanding and responding in an attuned way to the self-experience of people suffering from negative symptoms may increase the chance of meaningful recovery for those who have not benefited from standard approaches to treatment such as medication and generic mental health support.

Chapter 9

The recovery of sense of self while coping with negative symptoms

Hamish J. McLeod, Nicola McGuire and Andrew Gumley

The disabling impact of negative symptoms

The notion of negative symptoms is a clinical concept adopted from classical neurology to denote the absence or diminution of functions and abilities (Messinger et al., 2011). Their typical behavioural manifestations include reduced volition, altered experience of pleasure, and difficulties with social functioning. These phenomena have long been recognised in psychosis, but are somewhat overshadowed by positive symptoms such as hearing hostile and critical voices or experiencing distressing persecutory ideas. Yet, Kraepelin referred to the "weakening of the wellsprings of volition" as one of the key features of schizophrenia, reflecting on the characteristic loss of motivational drive and agency commonly displayed by the people he worked with (Carpenter, Heinrichs, & Wagman, 1988; Kraepelin, 1971). More recent analyses suggest that primary negative symptoms are exhibited by 20–25% of people with psychosis across clinical sample studies, studies of people diagnosed with psychosis drawn from the general population returns prevalence rates of 15–20% (Kirkpatrick, Fenton, Carpenter, & Marder, 2006). These problems are commonly unmet treatment needs reported by service users, with loss of motivation standing out as a key area of concern when people with psychosis are asked to rate subjectively important areas of difficulty (Byrne & Morrison, 2015; Moritz, Berna, Jaeger, Westermann, & Nagel, 2017; Sterk, Winter, Muis, & de Haan, 2013). Negative

symptoms can also be a source of considerable concern and distress to family members (Provencher & Mueser, 1997; Roick et al., 2007). As these problems have garnered more research attention, it has become clear that their prevalence, and that of related disabling impacts, may be greater than previously assumed. A comprehensive study of 7,678 clinical records in the UK national health service found that 40% of people with a schizophrenia spectrum diagnosis experienced two or more negative symptoms (Patel et al., 2015). This higher rate of negative symptom prevalence is also borne out by a recent meta-analysis of specific negative symptoms observed across the stages of psychotic illness (Sauvé, Brodeur, Shah, & Lepage, 2019). When negative symptom rates are examined across stages of illness from ultrahigh risk groups through to people who have experienced multiple psychotic episodes, some specific negative symptoms, such as anhedonia, are experienced by more than 70% of people. Although these figures are not adjusted for iatrogenic and secondary causes of negative symptom behaviours, they provide an indication of the scope of negative symptoms as a significant clinical problem (Sauvé et al., 2019).

In this chapter, we will explore how psychological treatments, that focus on understanding and responding in an attuned way to the self-experience of people suffering from negative symptoms, may increase the chance of meaningful recovery for those who have not benefitted from usual treatment (Hasson-Ohayon & Lysaker, this volume; Leonhardt et al., 2017). We argue that this work is sorely needed because we are a long way from having a clear set of negative symptom treatment options that can reliably reduce suffering and support recovery (Barnes et al., 2016; Fusar-Poli et al., 2014; Priebe et al., 2016). Much of the available evidence for individual psychotherapies, such as CBT, is of insufficient quality to say with any certainty what should be added to standard care to produce meaningful improvements for most service users (Bighelli et al., 2018; Jones et al., 2018). Also, early data suggesting a beneficial effect of standard CBT on negative symptoms have not been borne out by later reviews (Velthorst et al., 2014) and it has been suggested that effective negative symptom therapies will need to be augmented with techniques that stimulate metacognition and reflective functioning

(Hasson-Ohayon et al., 2017). Given the accumulating evidence that metacognitive ability is an important factor in the development and maintenance of negative symptoms, a therapy approach that addresses these difficulties has more potential to overcome the current lack of effective therapeutic options. We also argue that more progress will be made if we carefully consider how different subtypes of negative symptoms may require tailored approaches to formulation and treatment (Velthorst et al., 2014). Symptom-focused approaches are becoming common in psychotherapy for psychosis as we acquire more evidence about the specific processes that underpin the maintenance of specific symptoms (Freeman & Garety, 2014; Lincoln & Peters, 2018).

Subtyping negative symptoms

Much of the recent literature on psychological treatments for psychosis has focused on improved positive symptoms as the key therapeutic outcome (Bighelli et al., 2018) and an increasing number of studies have now tested positive symptom specific processes (e.g. rumination, sleep hygiene, and appraisals of worry) that can be targeted in psychological treatment protocols (Brown, Waite, & Freeman, 2019). This is consistent with the general finding that focusing on specific symptoms can help make significant advances in the understanding of these symptoms and the factors precipitating them (Lincoln & Peters, 2018). In order to apply a similar approach to negative symptoms, it is relevant to look at how they are currently sub-typed and characterised (Galderisi, Färden, & Kaiser, 2016; Galderisi, Mucci, Buchanan, & Arango, 2018). Previous dichotomies, such as primary vs. secondary negative symptoms and deficit vs non-deficit presentations (Carpenter et al., 1988), have been replaced by more nuanced distinctions that separate experiential negative symptoms (e.g. anhedonia and amotivation) from expressive negative symptoms (e.g. affective flattening, poverty of speech) (Foussias & Remington, 2010).

Focusing therapeutic attention on subtypes of negative symptoms is also compatible with current approaches to modelling mental health problems based on more readily observable and

measurable processes rather than abstracted and reified diagnostic labels (Cuthbert, 2014). The Research Domain Criteria (RDoC) classification system is the most prominent example that has emerged as an alternative to standard diagnostic schemes for mental health conditions (Insel et al., 2010). Although RDoC is not free from criticism (Lilienfeld, 2014; Lilienfeld & Treadway, 2016), it does encourage an approach to understanding mental illness that builds on specified processes and capacities (e.g. understanding one's own mind, attentional processes, reward sensitivity, arousal regulation) (Cuthbert, 2014). This move away from therapies based on broad diagnostic categories addresses a key problem with schizophrenia as a diagnosis; namely that people with very different symptom profiles are often unhelpfully placed together under the same diagnosis (APA, 2014; World Health Organization; WHO, 1992). Under factor analyses, amotivation, anhedonia, and asociality cluster together as "experiential deficits" and poverty of speech and affective blunting reflect a "diminished expression" subdomain (Kirkpatrick et al., 2006; Messinger et al., 2011; Kring & Barch, 2014). Indirect evidence suggests that experiential and expressive negative symptoms are linked to different aspects of functioning (Strauss et al., 2013). These symptoms might also have different clinical impacts, for example; *expressive* deficits increase the likelihood of longer hospital admission, whereas people with greater *experiential* deficits have typically poorer work-related outcomes (Barch & Dowd, 2010; Foussias et al., 2015).

Consistent with the topic of this book, there is also growing evidence of a contribution of metacognitive functioning to negative symptoms, both at the level of combined negative symptom scores (McLeod, Gumley, MacBeth, Schwannauer, & Lysaker, 2014a) and for specific symptoms such as anhedonia (Buck et al., 2014). Before examining these links in more detail, it will help to examine the key conceptual issues that are relevant to understanding the relationship between disrupted self-experience and negative symptoms.

The self and negative symptoms: some key conceptual issues

In this section we discuss four main sets of evidence that shed some light on how negative symptoms may emerge and be maintained. Our argument is that fragmentation of the self, autobiographical memory (AM) deficits, early developmental factors, and disconnectivity in large-scale brain networks all affect self-experience in ways that need to be considered when developing new approaches to supporting negative symptom recovery.

Fragmented self-experience and negative symptoms

A major challenge to applying standard psychological therapies, such as CBT, in the treatment of negative symptoms is the assumptions made about the capacity of people with psychosis to reflect on and modify thoughts about the self as an agent in the world (McLeod, Gumley, & Schwannauer, 2014b). For example, identifying and challenging self-defeating thoughts about personal competence, the likelihood of acceptance by others, and the probability of experiencing pleasure are the key targets in standard CBT for negative symptoms (Grant, Huh, Perivoliotis, Stolar, & Beck, 2012; Klingberg et al., 2011; Rector, Beck, & Stolar, 2005; Staring, Huurne, & van der Gaag, 2013). However, many people with negative symptoms find it very difficult to reflect on their own mental experiences in a way that can support testing of their assumptions and beliefs about the world (McLeod et al., 2014a). So, treatments based on thought challenging have substantial difficulty in gaining any traction because even the process of identifying and exploring one's thoughts in therapy may be confusing or overwhelming. In recognition of this issue, other approaches have focused on attempting to re-stimulate the capacity to experience the self in an embodied way through techniques such as body-oriented psychotherapy which are less reliant on verbal-linguistic modes of expression (Priebe et al., 2016). Hence, before assumptions and beliefs about the world can be tested and modified, many people with negative symptoms

will first need support to reassemble their fragmented self-experience so that they can regain a coherent understanding of who they are and what is important and meaningful to them.

Creating the circumstances to support the assembly of fragmented self-experience can quickly appear highly complex and overwhelming for both the service user and the therapist. As an antidote to this threat, many treatment protocols emphasise attaining narrowly defined, focused, treatment goals such as symptom reduction, acquisition of specific social skills, or development of mood regulation strategies (Elis, Caponigro, & Kring, 2013; Favrod, Giuliani, Ernst, & Bonsack, 2010; Johnson et al., 2009). While some of these protocols may support recovery for a few, there is a substantial number who struggle to obtain any recovery-relevant benefits from these approaches. Our proposal is that subjective recovery that encompasses a wider range of outcomes, not just symptom change, will need a therapeutic approach that acknowledges and addresses the complex nature of constructing a coherent sense of self. This requires creating enough time and opportunity for the person to be helped to re-assemble the fragments of their experience so that they can meet both life's challenges and joys. While some approaches have been designed to help people develop the metacognitive capacity needed to cope with the good and bad of human experience (Lysaker & Klion, 2017), there is still work to be done on understanding how these processes could be targeted for change to support recovery from negative symptoms. We also need to harness the benefits of a precise symptom-focused approach but not at the expense of losing sight of the whole person and their experience of psychosis. One way to achieve this reassembly of the fragments of self-experience is to use the therapeutic relationship to stimulate sufficient intersubjective awareness for the person to begin to produce and reflect on their experiences (Hasson-Ohayon, 2012; Salvatore, Dimaggio, & Lysaker, 2007). The narrative that is constructed as we examine our past and current experiences relies heavily on the operation of the autobiographical memory system and so in the next section we provide an account of key aspects of AM function that are relevant to negative symptom expression.

Autobiographical memory and the self

Autobiographical information is the fundamental substrate of many theories of the phenomenology and teleology of the self (Conway, 2005; Conway & Pleydell-Pearce, 2000; Conway, Singer, & Tagini, 2004). The study of autobiographical memory now encompasses an extensive literature, drawing on evidence and theories spanning neuroscience, clinical sciences, philosophy, and cognitive psychology. It is generally argued that AM grounds and constrains the versions of self that can be accessible to consciousness/working memory (Conway, 2005; Sutin & Robins, 2007) and it is clear that the types of AM available to consciousness can vary in conjunction with contextual factors such as mood state, eliciting cues, and threats to self-coherence (Berna et al., 2011; Conway et al., 2004; Singer, Blagov, Berry, & Oost, 2013; Williams et al., 2007). Hence, AM recall can be affected by motivational factors (e.g. when recall of painful memories is avoided) or can break down (e.g. as in amnesia where access to personal information is impaired due to neurological factors).

One emerging theory addressing the interface between AM functioning and anhedonia is that when access to *specific* personally experienced past events is disrupted (e.g. difficulty responding to the question "Can you tell me about a recent social situation you enjoyed?"), the default response is to access personal semantic information in the form of rules or identity-related beliefs that have been shaped by multiple experiences over time (e.g. "I'm not a sociable person – I don't enjoy social events") (Strauss & Gold, 2012). This access to semantic personal information may be habitual, over-generalised, and not routinely subjected to scrutiny and reconsideration. As a result, the output from this exploration of potential sources of pleasure could be either a stereotyped response ("I don't enjoy social events") or a failure to access either a specific AM or an identity-related belief (e.g. "I don't know" or no response at all).

This superficially simple process of judging our own preferences, based on prior experience of the world, has a number of complexities that emerge developmentally at around three to six years of age and are heavily reliant on the reflective capacity for awareness of one's

unique experience of the world over time – a human capacity referred to as autonoesis or mental time travel (Tulving, 2005). This capacity requires the development of a subjective sense of a personal "me" that has experiences that occur at different points in time but happen to the same agent or identity. The stimulation of such capacity may well be linked to early experiences that occur in key developmental contexts (particularly interactions with attachment figures). We turn now to examining some of these processes.

Developmental factors in autobiographical memory and self-awareness

One of the features of early relationships is that infants and young children do not start life with the capacity to differentiate a boundary between the self and others, particularly attachment figures who provide a source of affect regulation and nurturance (Schore, 1997). In multiple ways, attachment figures facilitate the co-regulation of affects, and safe exploration of the social and physical world, and in normal development this promotes the capacity to learn about the self as an independent agent with mental experiences that are separable from the mental experiences of others. Infants who are faced with unavailable, hostile, or erratic attachment figures may experience significant disruptions to the development of a stable and secure sense of self. As with other forms of learning, repeated exposure to patterns of interpersonal relating will affect the internal working models/schemas that are used to guide predictions about the social-interpersonal world (see Griffiths and McLeod (2019) for a review of attachment in relation to negative symptoms). Those who go on to develop insecure attachment patterns may learn to avoid thinking about and seeking contact with the mental states of other individuals, which in people experiencing negative symptoms may manifest in asociality, social withdrawal, and disinterest in personal closeness.

The role of AM processes in this emerging awareness of the self and others is beginning to extend beyond a theoretical understanding, as more data are acquired about how children

transition out of the period of childhood amnesia and begin to exhibit the capacity to encode and then retrieve autobiographical events from memory. Ross, Hutchison, and Cunningham (2019) used a paradigm that exploited the fact that AM information tends to be more readily encoded when it is self-referent and applied this to a large sample of three- to six-year-olds, along with measures of AM and the ability to monitor the source of memory information (i.e. internally versus externally generated) (Ross et al., 2019). As predicted, AM, source monitoring, and self-knowledge all increased with age. In addition, there was a bidirectional relationship between growth in autobiographical knowledge capacity (the volume of retrieved episodes) and self-concept. In essence, these data suggest that the ability to encode and retrieve personal AM events depends on the development of self-concept and that once this has formed, the ongoing stimulation of AM further promotes self-awareness. A potential corollary of this, for people with disrupted early relationships, is that this process of self-identity consolidation and development of AM processing capacities may become disrupted. There is evidence from adult samples that avoidance of recall of specific AMs is associated with greater negative symptoms, particularly in people with a history of traumatic admissions to hospital (Harrison & Fowler, 2004). What remains to be determined is whether these patterns of AM function may first emerge in early developmental contexts and then lead to elevated risk of negative symptoms with the onset of illness. As noted above, there is some evidence that once negative symptoms become established, recovery may require the formation of a therapeutic relationship that supports intersubjectivity (Hasson-Ohayon, 2012; Salvatore et al., 2007).

A final step in our consideration of conceptual issues that could inform our understanding of the relationship between the self and negative symptoms is to examine the possible contribution of perturbed functioning of large-scale brain networks.

The Default Mode Network (DMN) and the self

As the techniques and theoretical brain models used in functional neuroimaging have evolved there has been an increasing recognition that the brain is never truly "at rest" (Raichle et al., 2001). Functional imaging of the brain in states of assumed mental inactivity (e.g. eyes closed and resting quietly) reveals coordinated patterns of large-scale and widely distributed networks, the activity of which is associated with complex mental functions such as autobiographical remembering, thinking about the future, and self-reflection (Whitfield-Gabrieli & Ford, 2012). Hence, it appears that if left without salient stimuli to respond to, the typical mode of operation, for most people, is to engage in mental tasks that entail exploration of one's own mind (e.g. remembering events and thinking about the future). This has implications for people with marked negative symptoms as it seems plausible that reduced activity in the brain systems involved in self-reflection, recall of personal experiences, and future planning will have downstream consequences such as avolition, low self-awareness, and potentially anhedonia. There is preliminary neuroimaging evidence that components of the DMN (comprising mPFC, PFC, and precuneus) are functionally less active in people who display lower metacognitive ability (Francis et al., 2017). It will be for future studies to replicate this finding but these results do raise the possibility that disruption of the DMN (or its sub-parts) contributes to the types of metacognitive deficits that worsen negative symptoms.

This development of large-scale network models of brain-mind interaction has encouraged a theoretical shift away from lesion-based aetiological models that propose psychosis is wholly explained by damage to brain regions (e.g. the striatum; Chung & Barch, 2016) or structures (e.g. white matter tracts; Sigmundsson et al., 2001). Instead, there is accumulating evidence that psychosis can be more helpfully understood as being associated with functional dysconnectivity in brain circuits and neuromodulatory processes (Friston, Brown, Siemerkus, & Stephan, 2016). This conceptualisation is consistent with Bleuler's view that loss of associative functions and disruptions of the ability to synthesise thoughts were at the heart of schizophrenia (Dollfus & Lyne, 2017). This view has the very important implication that disruption in the ability to make adaptive predictions about the state of the world and form integrated models of

the self over time can vary depending on potentially modifiable contextual factors (Friston et al., 2016). This approach has been used to explain the *positive* symptoms of psychosis, such as delusional beliefs, as a misfiring of the usually adaptive processes of Bayesian inference that close the gap between what we expect to see in the world and our actual sensory experiences (Friston, 2005). In this prediction-error model the argument is that brain systems are working to generate and test hypotheses about the state of the world but that this process disintegrates and causes aberrantly salient experiences that the person needs to integrate into their understanding of the world. These integrative and associative processes are also relevant to the understanding of how fragmentation of self-experience may underpin negative symptoms. One plausible functional impairment is that the default mode network becomes less likely to generate stimulus-independent thought, autobiographical recollections, and willed intentions to act (Frith, 1992). Hence, rather than making unhelpful or inaccurate predictions about the state of the world, some negative symptom presentations could reflect a failure of the natural generative activity of the DMN. This could give rise to phenomenological experiences such as alogia, reduced motivational drive, diminished interest, and lower spontaneous sensation seeking. It would be interesting to see if future studies can map the recovery trajectories and fluctuations in negative symptoms to changes in the functional connectivity of the DMN. This kind of information might help with pacing treatment and ensuring that the level of intervention matches the metacognitive profile of the service user.

Potential treatment implications

Before examining ways that recovery can be supported in people experiencing persistent negative symptoms, it is worth highlighting that despite the lack of reliably effective drugs or psychotherapies for negative symptoms, there is evidence that negative symptoms can and do change over time. Previous pessimistic assumptions about the inevitable long-term deterioration of negative symptoms have been modified in light of evidence that most outpatients show some

improvement in negative symptom scores over time, irrespective of treatment exposure (Savill, Banks, Khanom, & Priebe, 2014; Strauss, Harrow, Grossman, & Rosen, 2010). The question then is, what can be done via psychological means to stimulate recovery from negative symptoms? Our analysis suggests a number of avenues.

First, treatment strategies need to be tailored to the level of metacognition exhibited by the person. This is done by carefully observing the kinds of mental operations that they are capable of during the therapeutic session. Using the typology applied in Metacognitive Reflection and Insight Therapy (MERIT; see (Lysaker & Klion, 2017)), people experiencing reduced levels of awareness of their own mind will have difficulty identifying their own thoughts or differentiating between types of cognitive operations (e.g. memories, fantasies, perceptions). People with negative symptoms who have few thoughts and experience their mental world as more barren, empty, or unidimensional will first need to be helped to label and explore their own mental states in a safe and supportive way. Hence, the therapist may need to start by providing comments and observations that re-stimulate the person's awareness of and curiosity about their own mind. For other people, their negative symptoms will arise from experiences of being overwhelmed when they begin to explore their mind and the mind of others. Based on the literature reviewed above, this presentation will be common in people who have traumatic autobiographical memories that they have learned to cope with by avoidance. In both scenarios, the key task for the therapist is to sensitively match the level of intervention to the metacognitive capacity that the service user currently displays.

A second key strategy hinges on helping the person to generate autobiographical recollections that they can use to make sense of their life, their wants and desires, and the personal meanings that they have derived from their experiences. This capacity may be used in a targeted way to address experiential negative symptoms such as anhedonia (e.g. by recollecting previous sources of pleasure), or in a more general way (e.g. in supporting discussions about the links between the meaning of personally experienced events and current personal identity). It remains to be demonstrated whether helping to re-stimulate autobiographical recollection

capacities can also restore functional connectivity in the DMN. If this is the case, it may be possible to triangulate changes in metacognition, DMN connectivity, and negative symptom recovery as therapy progresses.

Finally, it also appears that another key therapeutic task is to create opportunities for people to differentiate between personal semantic knowledge (e.g. abstracted identity beliefs) and experienced-based recollections of events. This is particularly important when the person holds undermining identity beliefs, such as seeing themselves as incompetent or unable to form social connections. By definition, these types of beliefs will be overgeneralised abstractions that are no longer linked to specific autobiographical experiences. Helping the person to notice the difference between their actual current experiences and the personal semantic beliefs they hold (e.g. "I'm incapable of experiencing pleasure") creates the chance to develop a more complex and nuanced view of themselves and their capabilities. For example, such an approach should help diminish the amotivation that arises from problems with anticipating pleasure (Raffard et al., 2013). As an increasing body of work addressing anhedonia shows, an increased capacity to recall actual personally experienced events may provide the best source of information about what is personally meaningful and rewarding (Engel, Fritzsche, & Lincoln, 2013; Strauss & Gold, 2012).

In conclusion, it is clear that negative symptoms are a highly salient problem area for persons with psychosis and their families. It also seems that specific subtypes of negative symptoms may be higher priority for care than others so the treatment options we use should be deployed to target the negative symptoms that are most relevant to the person and their recovery needs. There is now extensive evidence, from a number of theoretical and methodological sources, that suggests negative symptoms, self-identity, and metacognitive capacity all interact. In particular, the recovery of a clearer sense of self-identity, bolstered by an integrated narrative sense of one's own history, may be important parts of the process of recovering from negative symptoms. Future studies are needed that examine whether the enhancement of metacognitive ability (e.g. via MERIT; (Lysaker & Klion, 2017)) causes improvements in negative symptoms

and reduces fragmentation of self-identity. The evidence reviewed here suggests that this is a highly promising therapeutic pathway to explore and develop.

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