

Portfolio Volume 1: Major Research Project

Personal Constructs of Body-Mind Identity
in Persons Who Experience Medically
Unexplained Symptoms (MUS)

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Abstract

Medically Unexplained Symptoms (MUS) are bodily symptoms for which no organic cause has been identified, and which result in significant levels of psychological distress and functional impairment. MUS are thought to be highly prevalent in primary care settings, and have considerable costs to society. Despite evidence of overlapping psychological and physical presentations, MUS are not well understood or treated in culture that predominantly views the body through the lenses of dualism and mechanistic reductionism. An alternative 'interactive' view of the body as playing a more dynamic role is elaborated through George Kelly's (1955) Personal Construct Psychology. The author draws upon Lin & Payne's (2014) 'frozen construing' theory, and empirical literature on relationships between identity and MUS, to suggest that for people with MUS, the symptomatic body is distressing because the person is struggling to integrate its meaning with their identity. It is hypothesized that embodied processes, that may actually protect the self (and others who share a construct system with that person) from events which threaten to dramatically alter how the self is construed, are difficult to understand because of their preverbal nature. Hence symptoms, and the body itself, are dissociated from the person's more elaborated verbal self-constructions. Several hypotheses relating to this suggestion were tested using a modified form of the repertory grid technique that was designed to explore construct systems of both mind and body, for self and others. Twenty participants with MUS, recruited from the community, completed the repertory grid interviews and measures of depression, anxiety and symptom severity, which were correlated with relevant repertory grid indices to test hypotheses. Findings indicated that symptom constructs, contrary to expectations, were well integrated into participants' construct systems. The alleviation of psychological distress was significantly associated with increased perceived distance between the self in general and the self when symptoms are worst (a relationship which appeared to be independent of severity of symptoms), providing evidence of a process of dissociation that protected the current self from assimilating the undesirable characteristics that were associated with the symptom. The way in which the self when symptoms are worst is construed appeared to influence levels of distress, with more predictive power than several other indices. The study also found evidence for some participants of hypothesized relationships between desired aspects of the current self and symptoms, that would imply that symptom disappearance would actually threaten a desirable aspect of how the self is construed. Content analysis of these constructs revealed (as predicted) that such desirable aspects of self tended to relate to being responsible and sensitive to the needs of others, and were elaborated through bodily constructs in a way that suggested that they were not well integrated with the primary ways that these participants made sense of their identity. For these particular participants, discrepancies between the ideals that they had for

themselves, and how they would like to be seen by others, were associated with increased depression. Several participants were identified whose constructions of self and others were dominated by constructs relating to both mental and physical strength and weakness. These participants appeared to be struggling to find coherent meaning for themselves as the result of symptoms, which were regarded as invalidating a pre-symptom construal of themselves as being 'strong'. There seemed to be a continuum of being a 'body for others' on the one hand, a previously 'strong person' on the other, and a person who is 'strong for others' in the middle. Implications for clinical practice are discussed. Although the findings of the current study are limited by a small sample size, it appears that exploring the meaning of the body in the construction of self helps to elaborate the meaning of the body and symptoms in a verbal, expressible form. This process is likely to be helpful to those who struggle to find meanings for their symptoms both in their own construct systems and in a society that objectifies the body.

1. Introduction

Medically unexplained symptoms: an overview

'Medically unexplained symptoms' (MUS) is a term describing persistent bodily complaints which are distressing and impair an individual's functioning (Payne & Stott, 2010), and for which tests and investigations have not been able to reveal explanatory organic pathology (Chitnis, Dowrick, Byng, et al., 2014). Though these physical symptoms are often distinguished from bodily complaints which have an identified etiology, they "can be as real and debilitating as any associated with organic disease" (Brown, 2013, p. 868).

The term 'MUS' covers a range of symptoms including functional disturbance of organs or body parts, pain, discomfort, or fatigue. People who experience MUS may be frequent attenders in primary care settings and present within various specialist branches of secondary-care medicine. Many unexplained symptoms are labelled as 'syndromes' or 'disorders' within different specialties, rather than being labelled as 'MUS'.

Overlaps and comorbidity between MUS labels make obtaining precise data difficult (Wyller, 2007). However, MUS are considered to be among the most common complaints in UK primary care (Kirmayer & Taillefer, 1997; Kroenke, 2003), with at least as many as one third, and perhaps as many as half, of symptoms having no organic explanation (Barsky & Borus, 1995; Kroenke & Mangelsdorff, 1989; Morriss, Dowrick & Salmon, 2007). Given that General Practitioners (GPs) rarely use terms such as 'MUS' or related labels, and display considerable reluctance to do so (Dimsdale, Sharma &

Sharpe, 2011), the number of primary care patients with MUS may be underestimated (Payne & Brooks, 2016).

People who experience MUS often experience psychological distress, including anxiety and depression (Edwards, Stern, Clarke et al., 2010; Payne, 2009; Smith et al., 2005), and at least half of patients seeking psychological help in the UK may have MUS (Hague, 2005). However, MUS is not always comorbid with psychiatric diagnoses such as anxiety disorders or depression. Research has suggested that, contrary to the assumptions of some practitioners, this psychological distress cannot be accounted for as a straightforward consequence of experiencing unwanted bodily symptoms, nor are physical symptoms simply the unrecognized somatic counterparts of anxiety or depression (Hennigson et al., 2003; Kirmayer & Robbins, 1991).

Known risk factors for MUS include being female, being younger, and being unemployed (Hotopf et al., 1999). Histories of childhood abuse and adversity/trauma (e.g. Drossman et al., 1995; Kirmayer & Robbins, 1996; Roelofs & Spinhoven, 2007; Spitzer, Barnow, Gau et al., 2008; Waitzkin & Magana, 1997), past or current family dysfunction (Dwamena, Lyles, Frankel et al., 2009), and avoidant and fearful attachments to caregivers (Ciechanowski et al., 2002; Noyes et al., 2003; Stuart & Noyes, 1999; Spertus et al., 2003; Taylor et al., 2000) are commonly found amongst populations with MUS. Studies by Waldinger et al. (2006) and Anderson, Elkit & Brink (2013) have attempted to draw these factors together, suggesting that insecure attachment styles may mediate the relationship between trauma and adverse life events on the one hand, and the development of persistent physical symptoms on the other.

'A clinical and social predicament'

The overlap of psychological and physical symptoms, and complex etiological factors found with MUS invites an integrated psychological and medical treatment approach (Joint Commissioning Panel for Mental Health/JCPMH, 2016). However, in a society whose thinking is characterized by the dualistic separation of mind and body, and by implication mental and physical illness, integrated treatment pathways for MUS are lacking (JCPMH, 2016).

Bodily symptoms are usually attributed by patients to physical causes rather than psychosocial factors (Nimnuan, Hotopf & Wessely, 2001). When tests are sought and come back negative, such patients report feeling that their concerns are not taken seriously, as they receive the message that 'nothing is wrong' physically from their doctors (Edwards et al., 2010). Needs for emotional support are often overlooked within the powerful medical idiom and its focus on physical symptoms, despite evidence that patients often wish to discuss such factors (Salmon, Ring, Dowrick & Humphris, 2005).

The process of extensive testing to find the cause of the symptom, and prescription of procedures such as epidural injections (for pain) to 'rule out' certain diagnoses, may subject patients to unnecessarily invasive and potentially tissue-damaging procedures (Salmon et al., 2005).

Prescription of medications for symptom alleviation, or antidepressants for comorbid psychological symptoms (Burton, 2003) may lead to addiction or long-term side-effects that persist after discontinuation (Carvahlo et al., 2016), presenting the possibility of further somatic symptoms in addition to those which the patient initially presented with.

Relationships with professionals, usually the patient's General Practitioner (GP), are often strained, with feelings of rejection and undermined confidence from patients (Salmon, Peters & Stanley, 1999), and feelings of frustration, lack of control, inadequacy and negativity towards patients from doctors (Hahn et al., 1994; Stone, 2014; Wileman, May & Chew-Graham, 2002). Options available to GPs such as reassurance about the non-seriousness of the symptom (Olde-Hartman, Hassink-Franke, Lucassen et al., 2009) or attempting to encourage patients to 'reattribute' their symptoms to broader psychosocial factors (Gask & Goldberg, 1989) have limited evidence of effectiveness (Blanchard & Scharff, 2002; Morriss, Dowrick, Salmon et al., 2007; Sumathipala, 2007; Witthoft & Hiller, 2010). It also appears that GPs do not feel adequately trained in such approaches (Yon et al., 2015), or experience them to be over-simplistic given the complexities of the patients they see (Gask, Dowrick, Salmon et al., 2011).

Though this rarely happens (Department of Health, 2014), patients may be referred to psychological therapies for support with distress. Due to the dualistic structure of mainstream healthcare, these are mostly provided within mental health settings such as Improving Access to Psychological Therapies (IAPT) services. They are often presented as alternatives when other treatments have failed, with the goal of managing symptoms and quality of life rather than trying to remove symptoms (Eccleston, Williams & Morley, 2012). Psychological therapies for MUS range from verbal forms such as Cognitive Behavioural Therapy (CBT) for altering thoughts and addressing the misinterpretation of abnormal body experiences (Rief & Broadbent, 2007); to nonverbal therapies, which encourage patients to make connections between psychological and bodily processes which may be difficult to verbalize (Payne, 2009). Despite good evidence for the efficacy of both verbal and nonverbal forms of psychological therapies (Kroenke, 2009; Payne 2009), a major confounding factor in evaluating the real-world effectiveness of psychological approaches is that many of these studies include participants who have already accepted a referral to mental health services. This represents a small fraction of MUS patients (DH, 2014): according to research by Allen, Woolfolk et al. (2010), 50-80% of patients may not even attend their first appointments when referred to mental health

settings. For many who experience MUS, receiving treatment within a mental health setting is not acceptable due to the stigma attached to such services and their own physical explanations for symptoms (Raine et al. 2002). Indeed, even if psychological treatments are accepted, there is little evidence to show that this leads to a reduction in utilization of healthcare services, which would be considered a major outcome of such treatments (Eccleston, Williams & Morley, 2012).

The costs of MUS to society are considerable for a combination of reasons mentioned above. High levels of anxiety about the symptom and high healthcare utilization from patients, costly referrals to secondary care for extensive testing (e.g. expensive MRI scans), and ineffective and prolonged treatments are all factors adding up to expensive healthcare costs. One estimate by Bermingham et al. (2010) suggests that up to £3 million is spent annually on healthcare for working age adults who experience MUS. The additional societal costs from sickness absence and quality of life factors mean that MUS may cost the economy up to £14 million per year (Bermingham et al., 2010). It is no surprise that, given the cost implications of the current misunderstanding and mistreatment of those who experience MUS, Edwards et al. (2010) considered MUS to be 'a clinical and social predicament' (p.1).

Naming the predicament as 'Medically Unexplained Symptoms'

As mentioned already, 'MUS' does not represent a diagnostic category but a term representing a complex of persistent bodily symptoms which are associated with significant distress and impairment, and for which medical investigations fail to reveal an organic pathology.

The term 'MUS' has many limitations. For example, it may be taken to imply that there is no physiological component at all relating to symptom experience, which is inaccurate (Brown, 2007). As a negative label (i.e. defines symptoms by what they are not), it is generally less acceptable to patients than the range of labels used by medical specialties (e.g. 'irritable bowel syndrome') to positively classify the presence of certain criteria (Stone et al., 2002). It may also be taken by clinicians to mean that 'MUS' can only be used when organic causes have been absolutely ruled out, which drives a process of unnecessary and costly testing when it may be more helpful to focus on supporting the emotional wellbeing of patients (Creed, 2009; Creed et al, 2010, 2011).

The term 'MUS' has recently been replaced in the latest Diagnostic and Statistical Manual with 'Somatic Symptoms and Related Disorders' (SSD) (DSM-V, 2013). SSD is diagnosed when there are bodily symptoms which are distressing to the individual or result in significant disruption in thoughts, feelings or behaviour. Notably, this diagnosis may apply to bodily symptoms with a known pathology, as well as to those which have not been explained medically. Although the positive

characterization of the distress is well-intentioned, reducing reliance on organic pathology for diagnosis appears to have resulted in the over-'psychologization' of criteria (Crane & Patterson, 2012; Pinching, 2003), bypassing the issue that patients experience their symptoms as being inherently *bodily*. It also appears to invalidate the fact that the lack of explanation, and therefore the lack of meaning for symptoms, is an inherent part of the distress experienced.

In a wider culture which separates mind and body, Western society relies heavily on the idiom of 'medical explanation' and 'identifying the disease/pathology' when it comes to alleviating bodily suffering. When symptoms do not follow this usual 'medical story', patients are threatened with invalidation and a lack of meaning for their symptom (Nettleton et al., 2005). The predicament of trying (and failing) to find meaning for symptoms, and therefore to legitimize suffering in a society which expects illness to correlate to disease, is not merely the patient's predicament, nor one within the doctor-patient relationship, but one that percolates throughout wider healthcare and societal contexts (Nettleton et al., 2005). To the author, 'SSD' as a construct ignores the gravity of this predicament by providing a positive but overly psychological account of patients' suffering.

'Medically unexplained symptoms' names a predicament that applies not only to the individual patient, but is also framed within the assumptions and viewpoints of Western Society that have inextricably become a part of the definition of the clinical problem of 'MUS'. The next section aims to make this current, problematic 'clinical epistemology' (Keeney, 1982; O'Hanlon & Wilk, 1987) more explicit, and present an alternative way of looking at embodied experience which attempts to understand symptom experience as an irreducibly *personal* phenomenon.

Clinical Epistemology

"The question of the integration of the mind/body in action is the most practical of all questions we can ask of our civilisation. Until this integration is effected in the only place where it can be carried out, in action itself, we shall continue to live in a society in which a soulless and heartless materialism is compensated for by a soulful but futile idealism and spiritualism." (Dewey, 1931, p. 304)

This section attempts to bring into greater contrast the epistemological foundations upon which the predominant (mis)understanding of MUS has been built. As mentioned above, the predominance of dualistic thinking in our culture has led in turn to the view that the body is separate to the mind, and that bodily symptoms have a physical cause. The idea of body and mind being separate entities has been challenged by the biopsychosocial paradigm, which has supposed that the biological, psychological and social levels interact with one another causally, and may share overlapping

mechanisms (e.g. McWhinney, 1972). However, even if mind and body can be seen to interact through overlapping mechanisms, there remains a dualism which is *experienced* between mind and body, and between subject and object, which turns within the wider cog-wheels of positivism and realism (Barfield, 1957).

There is a dominant view that there is 'one true and complete description of the way the world is' (Putnam, 1981, p. 49), independent of the distinctions made by perceivers. Reality is pictured as consisting of stratified levels of 'types' of phenomena which are all mechanistically connected to one another in a single causal nexus, glued together like stratified layers of a coastal shelf or pieces of a jigsaw puzzle (Kelly, 1955). This 'objective thinking' (Merleau-Ponty, 1944/1962) has characterized attempts by natural sciences to map causal connections between these layers of reality, predicting and controlling relationships between measurable 'objects' and phenomena external to the perceiver. This paradigm transcends the everyday distinctions and experiences of the perceiver to 'discover' causal mechanisms with explanatory power (Butt, 2004; Strawson, 1963). Objective thought transforms the experiencing person into structures and entities within the person, including the 'mind' (reified in mechanistic parts of the mind including 'representations', 'processes', 'cognitions', 'beliefs', 'the superego', etc.) and 'body' (described using concepts belonging to the natural sciences), which are thought to represent distinct levels or mechanisms existing in reality.

Given the successes of prediction and control in the natural sciences, the concepts employed by these sciences such as 'matter', 'energy' and 'particles' (notably, none of the things which anyone has directly 'experienced') may be regarded as corresponding to 'how the world really is', rather than representing constructs which have aided in the process of prediction and control of the world around us (Barfield, 1977). The consequence of viewing reality as ultimately physical in nature is that the subjective mind, or self-consciousness, is seen to constitute a retracted, isolated sphere or level of reality, separate from the 'world out there' in a subject-object divide. Subjective experience is a level of reality to be accounted for by the lower level physical phenomena, if it is to be considered 'real'.

Contemporary medicine may be seen to adopt such objective thinking in its attempt to transcend 'symptoms' as subjectively experienced by the patient in order to problem-solve the mechanistic aspects of 'illness' in the body (Obissier, 2006, pp2-4). Symptoms are the tip of reality's hierarchical iceberg, leading to the root cause, the 'real illness'. Symptoms are regarded as the 'symptoms of disease', and this 'of' becomes very important within the lens of prediction and control – different diseases predict different futures (Harre, 1991). Parts of the body, whether pathogen invaders, mutated cells or broken bones, are viewed as objects to be controlled (Obissier, 2006, p.4), and

because these are regarded as underlying illness experience, the subjective experience of symptoms takes second-place in the hierarchy of knowledge.

This reductionist, mechanistic view of the body resonates through the stories of those who experience MUS. If symptoms cannot be reified by finding a disease process, their reality is questioned, or otherwise thought to belong to a pathological level that is psychological in nature. There may be causal connections between symptoms, but the idea of the reality of the symptom being something apart from the experiences of the patient is difficult to shrug off.

Psychological theorizations about MUS have tended to regard physical symptoms as being 'produced by' psychological mechanisms for coping with traumatic experiences (i.e. 'dissociation and conversion theories' (Breuer & Freud, 1957; Brown, 2004; Janet, 1907)), or alternatively, have suggested that physical symptoms caused by 'actual physical injury' or illness are maintained and exacerbated by cognitive processes which either 'misinterpret' benign bodily sensations as being more severe (Deary et al., 2007), or that having certain cognitions means that the necessary steps for managing symptoms are not taken (Hou, Moss-Morris, Moss-Morris, Spence & Hou, 2011; Peveler et al., 2011; Spence & Moss-Morris, 2007).

Notably, the body, described physiologically as an object belonging to the 'physical' realm, plays a rather passive role in these accounts, which implicitly reinforce the medical message that 'nothing is really wrong with the body'. Physical symptoms are either produced by psychological processes (the pathology), or psychological processes *incorrectly interpret* the meaning of physical symptoms, so that pathology is again heavily characterized as 'psychological' or 'subjective' in nature. For the person who experiences the symptom *in* their body, they must accept the psychological 'reality' presumed to underlie their symptoms, or otherwise fail to have their experience validated.

In both psychological and physical medicine, the 'subjective' experience of distressing bodily symptoms is accounted for by reference to a description of interacting mechanisms which are described in almost exclusively psychological or physical terms. The notion of the 'person' as an individual identity with an embodied, idiosyncratic perspective in the world is almost entirely absent from these accounts. For the person who has unwelcome and unwanted experiences of their body, such dualistic accounts offer little hope of validation of their experiences.

An alternative viewpoint: an 'interactive' epistemology

As outlined above, integrating mind and body in terms of 'mechanism' fails to do justice to the experiences of the individual person – mostly because it does not appear to shift away from the idea

that 'mind' and 'body' are *in reality* separate phenomena, and in fact more fundamental than the person him/herself when it comes to scientific understanding.

The alternative view on which this project is based is an 'interactive' or 'constructive' epistemology. There is no commitment to a single, fixed description of reality to be comprehended entirely outside of our interactions with the world. This is not to say that reality is not structured at all independently of our explorations, nor that we only know about reality from a removed or indirect perspective – rather, the ways in which we explore the world are structured in such a way that highlight certain aspects of reality and ignore others. The 'reality' we get is a product of our interaction, configured by the structure of the perceiver as well as what is 'afforded' (Gibson, 1979) by the world. The way in which the person actively 'participates with' (Barfield, 1957), 'construes' (Kelly, 1955) or 'maps' (Wilk, 2013) reality is necessarily *selective* (Neisser, 1976) and channelized by the 'intentional structure' of the perceiver (Kelly, 1955). Reality is 'a creature of inquiry' (Wilk, in Franzetta, 2010, p.6), not fixed in nature.

The paradigm of objective thought and 'prediction and control' represents just one way of exploring the world around us, which pragmatically speaking has yielded meaningful, useful concepts that allow us to make sense of the world. However, 'particles' and 'atoms' are not 'real' within another system of meaning – that of everyday perception (Dilthey, 1988). Equally, whilst dualistic consideration of 'psychological processes' and 'physical processes' can be meaningful in the sense of allowing certain predictions to be made, these are not the only means by which a person's experiences can be considered to be meaningful or 'real' - and this is highly important for MUS.

Personal construct theory and embodied interaction

Exploring 'things' that are seen to be outside of the perceiver relationship is part and parcel of prediction and control explorations. However, examining the structure of the perceiver and their idiosyncratic ways of interacting with reality may be more relevant to understanding experiences of the world which are more localized to a person, a family system or a culture (Dilthey, 1988; Neisser, 1978). 'Subject-object' dichotomies are not presumed to be absolute in the interactive paradigm – understanding both the characteristics of the person and the characteristics of the environment is relevant to understanding the meanings that emerge through continuous interaction (Idhe, 1984; Butt, 2004).

Personal Construct Theory (Kelly, 1955) is one such theory that has attempted to look at the ways in which the person actively explores their world in an idiosyncratically structured way. A person may explore their world by means of continuously developing 'constructs', which represent bipolar (e.g.

selfish---kind) structured courses of action or exploration in the world, and in turn cyclically shape the person's experience of the world. 'Constructs' are not here conceived as structures within a centralized mind or self, but rather as being like trajectories or courses of action *within the world* (Kelly, 1955; Butt, 2004). This conception is akin to that of 'schemas', which are not only 'plans for action', but the skillful, structured executions of those actions and movements (Gallagher, 2005; Neisser, 1978).

Kelly differentiated between 'constructs', which are polarized choices or alternative ways of making meaning that are available to the perceiver, and 'concepts', which are unipolar in the sense that there is less space for alternatives and choice. In construing myself as 'kind', whether verbally or non-verbally, I am acting out in the world that I am 'not selfish'. The fact that alternative 'choices' can be conceived (e.g. 'thinks about others before acting' vs. 'selfish') highlights that my meaning of 'selfish' is more idiosyncratic or subjective to me – this does not mean that it is any more 'inside' or 'internal' to me, however. One can imagine a very much embodied way in which 'thinks about others before acting' and 'being kind' can be manifest in a person's actions, carving different paths of experience in the world.

A 'concept', such as 'yellow', is less of a matter of choice, particularly bipolar choice. The invariances in patterns of light and the physiology of human perceptual systems provides a strong sense of collective construing of 'yellow'. However, there are of course gray areas where having shared constructs is less about approximating one's actions to a shared external 'reality', and more about coordinating our social behavior with others. It would be unusual to speak of 'construing' a knife and fork *as* a knife and fork (Wittgenstein, 1953, p.195). However, one could imagine cultures that interact differently with these objects, for example regarding them as table decorations rather than as tools for eating food. The point here is that it is less about what knives and forks *really are* in these examples, but more about how systems of meaning ('realities') emerge that provide structure within that local part of reality (Wittgenstein referred to these as 'forms of life' (Wittgenstein, 1953, p.8)).

Participation in such construing processes can be seen to involve the structured actions of the embodied person as much as the disembodied meaning-structures such as language. Such embodied ways of 'knowing' that come with understanding concepts do not refer to 'factual knowledge' or take their meaning from entities external to experience. When I construe knives and forks as eating implements, I *act* in a particular way. Similarly, if one understands tears as an expression of grief rather than joy, then one is moved at an essentially embodied level to act in response to this. The

entire action is not separate from 'an understanding', as an experiment is separate from the theory it is testing (Wittgenstein, 1953, p.58-87).

The idea that people are 'active' agents, interacting directly with the world in an embodied way is important because it means that the person's ways of making meaning in the world are not processes belonging to an internal, retracted, centralized mind (Butt, 2004, 2008; Hurley, 2001; Noe, 2004), but occur through their bodies which move through the world in a structured way. These movements are available to others, who can in turn construe me as a person. The body, rather than merely being a passive object characterized by a physiological description, is essentially also a part of the person, the self. It is both subject and object simultaneously (Merleau-Ponty, 1944/1962): I do not only have a body, I *am* a body in many ways – I have a 'habitus' of embodied dispositions (Bourdieu, 1980), my characteristic ways of using my body in certain social situations, that I actively use to define myself in relation to others.

The hierarchical levels of personal constructs and the self

In the view outlined above, individuals and groups of people can be seen to participate or construe the world around them in a way that is on a spectrum between being idiosyncratic and more particular to them on the one hand, and more collective on the other. Such similarities and differences between ways of construing form the basis of identity, or 'the self'. Rather than viewing the self as being a Cartesian soul-like inner entity, the self is conceived of in PCP as being a hierarchically organized system of construing which relates to how the person construes themselves as, and is construed by others as, being similar or different to others (Butt, 2008, p61, Fransella & Bannister, 2003; Kelly, 1955, p.482). In a world of other persons, having such an identity construct is an important process in maintaining social stability (Butt, 2008, p.62).

A person's construing of themselves and others, no matter how idiosyncratically channeled, needs some level of structure and consistency that is validated through interaction with others. The famous experiments in social conformity by Sherif (1935) and Asch (1951) illustrate this need to align or coordinate our way of literally 'seeing the world' with others. People will actually *see* the visual stimuli in the same way that they have witnessed others doing. Their experiences are not shaped by a desire to approximate to a conception of the objective properties of the line, but to find structure and shared meaning for their experiences in the interpersonal situation. The sense of discrepancy between one's own construing of the stimuli and those of others can be very distressing in this situation.

Achieving a consistent and meaningful construction of self in relation to others is more or less dependent on different constructs. A 'peripheral' construct may have fewer implications for change in terms of how I view myself (e.g. 'not interested in classical music' vs 'interested in classical music'); however, a change to a more 'core' construct (e.g. 'caring' vs 'cold') may imply changes to many other ways in which I construe myself, and be more threatening to my identity, with implications for how I see my relationships with those around me also (If I am 'cold' rather than 'caring', then I may re-construe times when I have seen myself as 'generous' as being 'calculating').

The way the self is construed has also been regarded as varying in levels of awareness (Leitner, 1999). Some constructs may vary from being pre-verbal in nature to those which are expressed in language and which we are more aware of (Guthrie, 1991), and many of the constructs which are particularly core to our view of ourselves as people may have never been verbally expressed before (Butt, 2008; Leitner, 1999). It is possible that the body may 'hold' some of our core constructs about ourselves as people, those habitual ways of being in the world that are so ingrained that we are not aware of them and how they structure our interactions and experience (Mills, 2005; Neimeyer, 1981).

Such embodied constructs may implicitly or explicitly relate to verbal constructs of identity. The concept of metaphor as a means of relating to the world is relevant here. It has been observed that many of the ways in which we understand and express ourselves are metaphorically structured, shaped by concrete external 'objects' we encounter in the world and relating to the structured ways our bodies respond to one another (Barfield, 1967; Centomo & Del Rizzo, 2016; Lakoff & Johnson, 1980; Mair, 1989). Expressions such as 'I can't stomach that news' (Obissier, 2006), 'my heart is breaking' and 'I cannot simply walk away' (Centomo & Del Rizzo, 2016) reflect the person's engagement with the world from an embodied position. They cannot be meaningfully understood merely as 'stand-ins' for processes that are discoverable at a reduced, physiological level (Barfield, 1967). They may perhaps even contrast or contradict some of the ways we verbally narrate ourselves (Wilk, 2013).

Threat to self-construing and symptom formation

'My clients taught me that a symptom was an issue one expresses through the act of being his present self, not a malignancy that fastens itself upon a man. What they experience as symptoms were urgent questions, behaviorally expressed, which had somehow lost the threads that led either to answers or to better questions.' (Kelly, 1955, p. 19)

Events which can alter core construing have a quality of 'threat' (Kelly 1955). If the self is construed as being dislodged from the core constructs (or 'roles'), the feeling of 'guilt' from invalidating one's own self-constructions may result. 'Anxiety' (Kelly's notion, 1955), which occurs when the current construct system cannot meaningfully construe events (e.g. one's own behaviour or body experiences), may co-exist with both threat and guilt. Anxiety can be managed by 'loosening' one's construct system to allow for re-construction and changes that add meaning, or by contrast, through 'constriction' – withdrawing to a restricted, predictable world where constructs continue to have meaning. The person may demonstrate 'hostility', which is a way to deny or avoid stimuli which are incongruent with self-construing by extorting evidence for one's constructions (Kelly, 1955; Lester, 2009). In cases where a reconstruction or assimilation does not seem possible from within a person's (or family's) construct system, this may lead to the formation of a symptom or illness which is construed as being a 'not self' attached to the person that the person wishes to be rid of (Butt, 2008, p.64).

This latter point may illuminate the physical and mental suffering of those with MUS. Eric Cassell defined suffering as "the state of severe distress associated with events that threaten the intactness of the person" (Cassell, 1991, p.33). This definition alludes to the fact that it is not 'my body' as an object that experiences symptoms, but it is *the self*, 'me', who experiences symptoms – I feel it *in* my body (Wittgenstein, 1953, p.89-104). 'The symptom' is not here thought of as some metaphysical entity waiting to be discovered, nor is 'the self' (Butt, 2008). As Cassell's definition indicates, suffering involves a sense of threat to personal integrity.

As previously mentioned construing processes can have varying degrees of preverbal and verbal elaboration, with varying degrees of awareness associated with them. One theory of MUS, building upon earlier 'dissociation and conversion' models of MUS, here-called 'frozen construing theory' (Lin & Payne, 2014), has proposed that adverse childhood events and relationships common found in MUS populations may be construed in embodied, preverbal and non-verbal ways, at low levels of awareness. Such events may threaten not only the person's construing system for him/herself and others, but it may also threaten the shared construing processes of those around the person (Procter, 1981; Dallos & Aldridge, 1987), shutting down opportunities for reconstructing the events and their relationship to the person in meaningful ways. When opportunities for collective reconstruction are not available, the experience may become traumatic (Verhaeghe & Vanheule, 2005), in the sense that the embodied person is 'frozen' or 'stuck' (Dallos & Aldridge, 1987) within a constraining network of construing.

The symptom cannot be readily integrated into the core verbal system without threatening change to that system, and therefore remains dissociated whilst 'overshadowing' the person's view of him/herself (Berntsen et al., 2003)– carrying a number of negative implications for that person's current construal of themselves (Sermpezis, 2007). Notably, a choice of negative construing of the self (e.g. 'I am fragile and naïve and at the mercy of others' vs. 'I am strong and responsible for what has happens to me') may yet be a preferred one for reducing threat (Sermpezis, 2007), even if it leads to an anxious and depressed position (Berntsen, 2001). The re-occurrence of similar threatening events at various points in the person's life may precipitate the onset of symptoms (Lin & Payne, 2014).

Symptoms may help to manage threat in an embodied, preverbal manner through processes of constriction, hostility or aggression (e.g. Cipolletta & Pruneddu, 2012). Some theorists have proposed that the structural properties of the body make it able to alter its function in such a way that can shape interactions and managed perceived threats (e.g. Obissier, 2006). Examples include 'having a thicker skin', 'not being able to digest' certain events, and widening or narrowing of the visual field (Cipolletta et al., 2012). These clearly lend themselves to metaphors offering opportunities to verbally represent *how* a symptom has meaning (Bateson, 1972; Centomo & Del Rizzo, 2016; Dallos & Aldridge, 1987).

If these preverbal construing processes are at lower levels of awareness, they may be 'dissociated' from the verbal construct systems of the person and those closest to them (Lin & Payne, 2014). 'The symptom', representing preverbal ways of managing threats to identity, is construed as being 'other' - part of 'the body' as an object that is not-self. Anxiety (using Kelly's meaning) is likely to be experienced as the person cannot meaningfully make sense of symptoms, or assimilate information about events that threaten their identity, using their verbally elaborated core construct system.

As in Kelly's quote above, PCT does not consider symptoms to be passive things happening to a passive body (as opposed to a more active mind which handles conflict and produces symptoms in the body), but rather as personal processes of meaning-making happening at an embodied, preverbal level (Gendlin, 1982). Such processes are 'compromises' or implicit choices (Dallos & Aldridge, 1987) for finding meaning when the core construct systems are threatened – compromises which involve suffering for the individual (Foulkes & Anthony, 1957). The structure of such embodied interaction has a variety of meanings which we are rarely aware of and verbally able to express (e.g. Bourdieu, 1980; Lakoff & Johnson, 1980; Schefflen, 1973). The separation or dissociation of these embodied processes, as 'symptoms' of the passive body, from the self as verbally construed may actually be supported within a society which encourages us to view 'mind' and 'body' as being

separate (Kelly, 1955). When no physical causes are found for symptoms, the personal experience of *suffering* is invalidated, or worse - attributed to 'the mind'.

2. Literature Review

The ways in which chronic bodily symptoms impact on a person's identity/sense of self have been emphasized as a key factor to understand in conditions with a known medical explanation (e.g. Contrada & Ashmore, 1999), with many authors adopting a personal construct perspective when undertaking such explorations (e.g. Chiari & Nuzzo, 1987; Cipolletta & Pruneddu, 2012; Lane & Viney, 2001, 2006). 'Identity' and 'self' have also been emphasized as being highly important concepts to understand in chronic pain research (e.g. Morley & Eccleston, 2004; Morley, 2010).

Based on the frozen-construing model discussed above, one might expect the following construing characteristics of people who experience MUS:

- Threat(s) to core-construing of self, including aspects which may not be verbalized or that the person is not fully aware of (expressed at an embodied level).
- Guilt related to perceived loss of former identity, particularly in those who have a rigid pre-symptom sense of identity.
- Hostility and constriction in response to invalidation and threats to core construing, which are elaborated or carried out by embodied processes including the formation of symptoms.
- Dissociation of the symptom and the broader body-self from well-elaborated (verbal) core construing processes of self and others, which results in anxiety as the symptom cannot be meaningfully integrated into construing of self and others.

To explore the empirical evidence for the above characteristics, a literature search was conducted which focused on relationships between MUS and self-construing, with a particular focus on how the body enters into construing of self and others.

Literature search strategy

Key search terms included 'identity', 'body-self', 'self-concept', 'self-construct', 'experience of body', 'bodily experience', 'embodied self', 'embodiment' and 'relationship to body'. Key search terms for MUS included 'medically unexplained symptoms/MUS/unexplained physical symptoms'; 'chronic pain/fibromyalgia/low back pain/persistent pain/facial pain'; 'CFS/chronic fatigue syndrome/myalgic encephalitis'; 'irritable bowel syndrome (IBS)', 'multiple chemical sensitivities'/MCS, 'contested illness(es)' 'functional syndrome(s)' and 'somatic symptom disorder'/SSD.

Excluded terms included 'cancer', 'diabetes', and 'multiple sclerosis', to eliminate papers exploring identity for chronic illnesses with known pathology. Papers which included forms of MUS of low relevance to primary care populations, e.g. 'non-epileptic attack disorder' (NEAD), or populations with a primary psychiatric diagnosis (e.g. 'psychosis' or 'borderline personality disorder') were also excluded. With the exception of the review by Yu et al. (2015), the review focused on empirical papers using data from multiple participants.

The following databases were searched: Google Scholar, SCOPUS, Pubmed, Taylor & Francis, APA Psychnet and ScienceDirect. Several specialist journals, including *Pain*, *Psychosomatics*, *Personal Construct Theory & Practice*, and *Journal of Constructivist Psychology* were also hand-searched.

Description of literature reviewed

Fifteen qualitative papers and fourteen quantitative papers were reviewed (Appendix A). As noted by Morley (2008) in relation to chronic pain, most research into relationships between chronic physical symptoms and identity is qualitative. Qualitative papers were selected based on their focus on bodily aspects of identity. As only two quantitative papers (Bode et al., 2010; Stuerz et al., 2009), focused on embodied aspects of identity, quantitative literature which explored relationships between MUS and identity more broadly was included.

Sample characteristics

Most participants experienced long-term pain (804), including fibromyalgia (43), chronic low back pain (381) and other chronically painful conditions (380). People experiencing multiple chemical sensitivity (MCS) made up the second largest research population (n=203), albeit all being recruited within a qualitative study by Reed-Gibson et al. (2005). Participants experiencing chronic fatigue syndrome (CFS) made up the next largest number of research participants (n=88 from 2 studies), followed by tinnitus (n=65 from a single study by Stuerz et al., 2007) and IBS (n=22 from 2 studies). Swoboda's (2006) study included a wide range of MUS in its inclusion criteria. Only two of the quantitative studies reviewed included participants who were experiencing symptoms other than pain (Benasayag et al., 2004; Stuerz et al., 2007).

The significantly higher proportion of research into chronic pain as a form of unexplained symptom might be accounted for by several factors. In terms of identifying participant samples from healthcare populations, research infrastructure is often supported by clinical infrastructure. Of the 28 empirical studies reviewed, 21 recruited primarily from hospital inpatient/outpatient and specialist medicinal clinics. Where there are specialist pathways and clinics for assessing and treating

pain, there is generally much less healthcare infrastructure outside of primary care for the range of non-pain MUS. Furthermore, whilst certain functional syndromes such as fibromyalgia have clearer clinical definitions, this does not apply to all forms of MUS. Therefore, clearly identifying a research sample of people experiencing heterogeneous forms of MUS can be problematic when clinical conceptions of MUS are constantly shifting – meaning that a single integrated stream of research with MUS populations is lacking (Brown, 2007). With the absence of clear diagnostic criteria or healthcare structure to engage the range of MUS experienced outside of chronic pain, other MUS groups may feel stigmatized by and excluded from those mainstream healthcare services which the majority of studies in this review have recruited from. Indeed, most of the studies that recruited beyond healthcare settings were recruiting participants experiencing symptoms other than pain (Clarke & James, 2003; Reed-Gibson et al., 2005; Stuerz et al., 2005; Swoboda, 2006; Whitehead, 2006).

The fact that many participants in the literature reviewed are recruited from outpatient hospital clinics raises issues as to whether the findings from the literature review can be generalized to a broader population of those experiencing MUS who are not currently engaged in secondary care services. There is generally a lack of comprehensive data about the utilization of healthcare services, and many of the qualitative papers (for methodological reasons) do not use standardized tools to clinically describe participants. It may be that the outpatient hospital samples are more severe in terms of psychological and physical problems compared to broader community samples experiencing MUS (e.g. Hellstroem, 2001; Miles et al., 2005).

Although the mean sample size was larger for quantitative studies (mean number = 60) relative to qualitative studies (mean number = 26, excluding the study by Reed-Gibson et al., 2005, which did not directly interview participants), the generalizability and relevance of the findings of qualitative versus quantitative research to the broader MUS population may be confounded by the sampling methods used. Notably, the issues in generalization of findings to the broader MUS population are not exclusive to the reviewed literature, but reflect broader issues in classification of MUS, and the clinical and research infrastructure surrounding MUS.

Conceptualizations of ‘self’ and ‘identity’ in qualitative and quantitative literature

‘Self’ and ‘identity’ are considered to represent complex, multifaceted and dynamic constructs within and beyond the literature reviewed, and are often used interchangeably. Although not always made explicit by some of the authors, different research approaches assumed different conceptions of self and identity.

'Content' versus 'process' views of self

Yu et al. (2015) reviewed conceptualizations of self and identity in quantitative literature on chronic pain. The majority of the 54 studies that they reviewed conceptualized self as self-evaluations such as 'self-esteem' (e.g. Bode et al., 2010), self-descriptions of roles (e.g. Harris et al., 2003) or lists of attributes generated by participants (e.g. self-discrepancy theory and methodology: Kindermans et al., 2009, 2010; Waters, Keefe & Strauman, 2004; and to some extent repertory grid papers by Benasayag et al., 2004; Compan et al., 2011 and Drysdale, 1989). They note that such conceptualizations are largely 'content' based conceptualizations of self, which they see as reflecting a dominant conceptual bias towards viewing 'self' and 'identity' as being the sum of thoughts, beliefs, evaluations, and descriptions that the individual makes about him/herself. They contrast this with self-as-context and self-as-process views of the self, which propose that self and identity can be detached from the contents of one's own (introspective) thoughts (e.g. Costa & Gouveia, 2011; McHugh & Stewart, 2012). Notably, focus on the self-as-process aspects of self was more common within qualitative research, which uses semi-structured interviews to examine the experiences of those who experience chronic symptoms, and the processes by which they make sense of their experiences from the subjective viewpoint.

Self and others in identity

Though all studies focused primarily on individual participants' constructions of their identity, several quantitative and qualitative studies explored or emphasized the role of others in constructing identity. Some construed identity as being related to having certain 'social roles' (e.g. Asbring, 2001; Crowe, Whitehead et al., 2010; Harris et al., 2003; Whitehead 2006), whereas other papers focused on the contrasts between public and private identities (Smith & Osborn, 2007; Read-Gibson et al., 2005; Werner, Isakson & Malterud, 2004). Several papers highlighted comparative processes where self is positioned in relation to certain individuals and groups (e.g. Smith & Osborn, 1999), and papers using repertory grid interview methods asked participants to construe themselves and others in a way that allows for 'distances' between how the self and others are construed to be quantified and standardized (Benasayag et al., 2004; Compan et al., 2011; Drysdale, 1989; Large & Strong, 1996). Four papers based on self-discrepancy theory (Higgins, 1987) asked participants to describe and rate various aspects of self (e.g. ought/ideal/feared) from their own perspective but also from the perspectives of others who knew them (Kindermans et al., 2009, 2010; Sutherland & Morley, 2008; Waters, Keefe & Strauman, 2004).

Two papers looked at the construction of self within wider cultural discourses or narratives. Two key wider cultural lenses for exploration and analysis were gender (Werner et al., 2004) and the ways in

which illness more generally is understood by society (Swoboda, 2006). Interestingly, although some papers did include information about cultural backgrounds and ethnicities of their participants, this was not explored in relationship to identity and MUS. This may be because the populations were predominantly white-Caucasian, meaning that cultural differences could not be meaningfully explored with the populations involved. Certain minority groups may also be under-represented in the healthcare services from which many participants were recruited. It may also reflect the 'invisible similarities' between the researchers and the participants who, sharing common Western White cultures, do not see cultural and ethnic status as a differentiating factor in identity.

Body and Self

The relationship between the body and self/identity is also conceptualized and explored differently across different methodologies. Strikingly, there is a distinct lack of an attempt to explore the role of the body for people experiencing MUS in the quantitative literature reviewed. Bode et al. (2010) devised a 10-item Likert-scale tool with a two-factor structure of the extent of 'alienation' and 'harmony' that the participant feels with their body. They related this measure with a measure of self-esteem (Rosenberg self-esteem questionnaire, Rosenberg, 1965) and Illness Cognitions (Illness Cognitions Questionnaire, Evers et al., 2001). However, although their sample included participants experiencing undiagnosed pain (21.4%), they did not compare scores of this sub-group with the wider sample of participants with diagnosed forms of rheumatic pain. The other quantitative paper exploring body-identity and chronic symptoms by Stuerz et al. (2009) included a sample of participants diagnosed with tinnitus. They used a body-image questionnaire, largely consisting of items about how the body is described and evaluated, to compare with clinical outcomes. However, the use of generic, standardized questionnaires might not be considered an adequate way to explore body-image, nor body-self-identity more broadly (Ben-Tovim & Walker, 1990; Gallagher, 1986). Although 'meta' themes might be extracted, such as the 'sense of insecurity about the body' and perceived 'unattractiveness' of the body for the tinnitus sample, the lack of idiographic exploration may prevent the full extent of the personal meaning of the body from emerging. In other conditions with strong overlapping psychological and physical symptoms, such idiographic explorations of construing of bodily aspects of self have been fruitful in increasing understanding between relationships between the body and the self. For example, with people experiencing eating disorders, categorizing the constructs they use revealed a significant tendency to use constructs relating to the body (Dada et al., 2017). Another study which asked participants diagnosed with anorexia nervosa to construe body parts in relation to the wider body (a procedure called the 'Body-Grid'; Weber et al., 2001) found a tendency to dissociate or distance body parts relating to sexuality and reproductive function from broader body-self – a finding which had been hypothesized in

psychoanalytic theory but not evidenced before empirically. Another condition where exploration of construing of the body-self has enhanced understanding is that of cancer. For example using the Body-Grid method revealed that those experiencing haematological cancer appeared to construe the body in a restricted way, focusing on the functional status of the body organs (e.g. 'healthy' versus 'ill') (Weber et al., 2005). This construing style may protect the person from threats to their body's integrity during a difficult and tissue-damaging treatment process (Turpin, Dallos, Owen & Thomas, 2016).

The dominant qualitative methodologies for exploring relationships between the body and identity derived from phenomenological paradigms, such as Interpretative Phenomenological Analysis (IPA) (Smith et al., 1995) (e.g. Afrell, Biquet & Rudebeck, 2007; Smith & Osborn, 1998, 2006, 2007), or Empirical Phenomenological Psychology (EPP) (Giorgi, 1985) (e.g. Hakanson et al., 2008; Hellstroem, 2001). These paradigms focused on how participants made sense of their experience of their bodies, viewing participants as 'experiential experts' (Smith & Osborn, 2003) in the approach to interviews, and then assigning superordinate labels to the participants' accounts, attending to processes in addition to contents.

Themes in qualitative and quantitative literature

Loss of former 'healthy' identity and take-over of undesired 'illness' identity

All of the qualitative studies, regardless of MUS type, reported a perceived loss of identity following the onset of symptoms. Hellstroem (2001) discusses the struggles of those experiencing chronic pain to keep their pre-pain identity "alive" (p.118). A participant in Reed-Gibson et al.'s (2005) study described MCS as having "strangled my fun/loving/kind/true self" (p.509), and Whitehead (2006) identified a theme of dramatic immediate losses of identity for those experiencing CFS. The current, symptomatic identity was generally described in self-denigrating terms (Smith & Osborn, 2007), such as "needy" (Reed-Gibson et al., 2005), "crippled" (Osborn & Smith, 1999), and unattractive (Hakanson et al., 2008) as the result of symptoms.

Many studies noted that participants drew a distinction between their former 'healthy' selves and their current 'illness' selves, and that their former self could become an unhelpful reference point for recovery (Reed-Gibson et al., 2005; Smith & Osborn, 1998; Swoboda, 2006). Large (1985 – full text unavailable for review) reported that pain patients construed their idealself as being close to that of 'like an ill person', suggesting that it was important to be validated as 'unwell' initially. A distinction was also drawn by many participants between themselves and 'healthy' others (Hakanson et al., 2008; Smith & Osborn, 1998), a comparison which was associated with feelings of envy and negativity towards others (Reed-Gibson et al., 1999; Smith & Osborn, 2007).

A study by Harris et al. (2003) attempted to quantify the extent of losses of former identity in relation to standardized clinical measures. They conceptualized 'identity' as having different self-representations across different social contexts or 'roles' (which in PCT terms might be seen as a measure of 'cognitive complexity' of self-construing), hypothesizing that someone who perceived themselves as having identical attributes across different contexts (i.e. 'low Self-Concept Differentiation' (SCD) (Diehl, Hastings & Stanton, 2001)) was at increased risk of experiencing depression if they lost those attributes due to symptoms. They measured SCD by asking 80 participants experiencing chronic pain to generate lists of attributes to describe themselves in 4 different contexts, for both their pre-pain and current self. Subtracting duplicated attributes gave a list of unique attributes equivalent to SCD. Although they found no relationship between SCD and scores on the Beck Depression Inventory (BDI-II, Beck, 1996), they found that attribute and role-loss predicted depression scores, and that these losses appeared to be greatest in the 'friendship', 'occupational' and 'leisure' domains, and least in the 'family' domain. Of course, whether such losses occur with the most valued or core aspects of identity is unclear, as interviews did not provide information about the relative importance of these attributes for participants.

Waters et al. (2004) provided an evaluative component by asking participants to compare their construction of their current self with that of how they would like to be ('ideal self') and the type of person they feel they ought to be ('ought self'). This is based on Higgins' (1987) Self-Discrepancy Theory, which predicts that the greater the distance ('discrepancy') between construing of the current self and the ideal self, the more likely a person is to experience depression. Discrepancies between current self and ought self correlate positively with anxiety according to this theory. They tested the hypotheses with 93 chronic low back pain patients, by asking them to generate lists of 10 attributes to describe their current/ideal/ought selves, calculating discrepancy scores based on relative numbers of attribute matches and mismatches in the lists. They also asked participants to generate lists from the perspectives of others who knew them. They found that discrepancies between the current self and the ideal self significantly positively correlated with BDI-II scores. Interestingly, a greater amount of variance in psychological distress scores on the Symptoms Checklist Revised-90 (SCL-R-90) was accounted for by the discrepancies between the current self and the ought self when participants were taking the perspectives of others. The authors emphasized the importance of others in self-conceptualization (Stryker & Stratham, 1985) based on this finding.

A flaw with the Waters et al. (2004) study is that the self-discrepancies, though associated with depression and psychological distress, were not necessarily attributed by participants to the symptom, and could have been present independently of symptoms. However, in addition to qualitative papers providing evidence to support that participants attribute changes to the

symptom, research based on the concept of 'enmeshment', discussed below, suggests that people with chronic pain do indeed construe such discrepancies as being contingent upon symptoms.

Alienation of body and dualism

The onset of symptoms did not only appear to lead to undesirably construed changes to the self, but also appeared to alter the relationship with the body, a theme which has been almost exclusively explored using qualitative methods. Many of the negative changes to identity were experienced as changes to the body, which was construed as something 'other' than the self (Asbring, 2001; Smith & Osborn, 2006), and different from the pre-symptom self, which was more likely to be construed as the 'real' self (Hellstroem, 2001; Smith & Osborn, 2007). The body became cut-off or dissociated from the (authentic) self, constituting a dualistic split between mind and body (Miles et al., 2005) that appeared to preserve the pre-symptom ('mental') identity as 'entrapped'/'imprisoned' (Hellstroem, 2001, p. 118) within an alien, dysfunctional body (Afrell et al., 2007; Smith & Osborn, 2006).

Afrell, Biquet & Rudebeck (2007) suggested from their phenomenological analysis with 20 chronic pain participants that the degree of acceptance and awareness of the body is on a continuum, and corresponds with the individual's ability to cope with symptoms. At one end of the continuum, they found participants who rejected their body, viewing it as an enemy or trap. They felt out of control of their bodies, and spoke pejoratively about their dependency on others. On the other hand, there were participants who recognized the need to make important choices to get a richer quality of life despite their symptom. Such participants connected the body and self, and reported enhanced self-awareness through listening to and learning from the body. Between these two poles were participants whose relationship with their body was ambivalent, moving between listening to and accommodating symptoms, and shutting off the body when it threatened their integrity. As the researchers acknowledged, it is uncertain whether the different responses to symptoms reflect individual differences between the people in their broader life context, or whether they reflect distinct temporal stages in the process of experiencing chronic pain.

Perhaps in contrast to the above findings where the body is explicitly or verbally construed as separate or apart from the self, Lilleas & Von Der Fehr (2011) drew on interview data with 71 women experiencing chronic pain (Lilleas, 2003) to suggest that these women construed the 'natural' female body as being a body that is supposed to be available for others. They illustrate with an in-depth analysis of a single participant from that study the way in which the body is regarded as 'a body for others'. They argued for a state of 'body preparedness for others' that may be an implicit part of the 'habitus' of embodied identity for these women. Messages from the body indicating the

need for rest and self-care were routinely ignored or resisted, as they did not fit with the habitus or body-self-schema for these women. They argue that this is an implicit and gendered way of construing the body-self, rather than being transparent and open to awareness. Although the paper lacks a large enough sample to provide convincing empirical evidence of such a habitus, the findings of Compan et al (2011) and Drysdale (1989) provide evidence of self-constructions of 'being sensitive to others' and 'being responsible and hard-working' which could be taken as the verbal expressions of a 'body for others' habitus. From a developmental perspective such as the 'dynamic maturational model' (Crittenden, 2006), this habitus could represent an attachment based organization or strategy for ensuring that one is safe from and gets needs met by caregivers (Kozłowska et al., 2013; Kozłowska & Williams, 2010). Kasia Kozłowska (2007) has suggested that a subset of MUS may reflect exaggerated appeasement behavior, where looking after caregivers and signaling vulnerability through somatic rather than verbal communications of distress ensures a level of consistency that may otherwise be absent. Such behavioural strategies would be expected to be at lower levels of awareness given that they are proposed to develop at a pre-verbal age.

Enmeshment

Quantitative research has developed the idea of the 'entrapped' self (Asbring, 2001) by looking at the extent to which alternative possible selves are construed as being contingent upon symptom status, a phenomenon known as 'enmeshment' within chronic pain literature (Morley & Pincus, 2001). Morley, Davies & Barton (2005) used a similar technique to Waters et al (2004), eliciting lists of attributes associated with the current, hoped-for, and feared-for selves. However, rather than simply examining discrepancies between these lists, they additionally asked participants with chronic pain to judge numerically (i) how capable they felt, and (ii) how likely it was that they would be characterized by their hoped-for and feared-for attributes with and without their pain. They looked at the relative proportion of pain-dependent characteristics for various possible selves as a measure of enmeshment. They found a significant positive correlation between increased enmeshment of the hoped-for-self with pain and reported symptoms of depression. Enmeshment also had a significant negative relationship with acceptance scores on the Chronic Pain Acceptance Questionnaire (CPAQ, McCracken, 1998). Current-self versus Hoped-for self-discrepancies did not add any further explanatory value to this relationship. Feared-for enmeshment and current-feared-for contingencies did not add any further predictive value. These findings were repeated in an extension of the study by Sutherland & Morley (2008), who also included items relating to motivational preferences, and used the Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983) as an additional measure of anxiety and as a preferred measure of depression to the BDI-II for physical health populations (Morley, Williams & Black, 2002). They also asked participants to distinguish between

'ought' and 'wanted' (ideal) characteristics in their hoped-for-self lists, and asked participants to generate descriptions based on the perspective of others as well as from their own perspectives. In contrast to their expectations, the hoped-for self as rated from the perspective of others did not contain more 'ought' characteristics, and the levels of anxiety were not associated with the feared-for-self. While they found that the hoped-for enmeshment similarly predicted pain-acceptance and depression scores, a further finding was that anxiety levels were significantly associated with enmeshment level regardless of motivational preferences.

In terms of theories relating to depression, the additional value of the enmeshment concept over and above self-ideal discrepancies can be explained by the following logic: if the difference between the self and the ideal self is construed as being contingent upon symptom status, and the symptom and/or the body are perceived of as being outside of one's control, then a sense of 'helplessness' and 'hopelessness' may ensue (Seligman, 1972), creating a sense of stuck-ness characteristic of depression.

Conflicting identities relating to the symptom

Although the above research suggests that negative attributes are enmeshed with symptoms, research using repertory grid technique (Kelly, 1955, 1991) has suggested that desirable/positive self-constructions may also be associated with chronic pain (Drysdale, 1989; Compan et al., 2011) and irritable bowel syndrome (Benasayag, Feixas, Mearin, Saul & Laso, 2004), albeit on a more implicit level that participants themselves may not fully aware of. Compan et al. (2011) conducted a study using Repertory Grid Technique (RGT) with 30 women diagnosed with fibromyalgia, matched with a control sample of 30 women experiencing non-MUS pain. The RGT is a structured interview in which participants are asked to compare themselves and significant others (called 'Elements') in terms of similarity and difference. Once several bipolar constructs have been elicited this way, the participant is then asked to numerically rate each element in turn (plus optional additional elements) on a scale in terms of how they see them according to each construct. The result is a 'grid' of ratings for elements/constructs that can be used to examine relationships between different elements and constructs. This can include implicit relationships which are not stated. In Compan et al's research, they supplied the construct 'in pain-not in pain' to explore relationships between the symptom and the other constructs of participants. They specifically tested to see if there were any 'Implicative Dilemmas' in the construing of the symptom. An implicative dilemma is found where there is a significant correlation ($r > 0.35$) between the desired pole of a construct on which a person is congruent (i.e. the current self and the ideal self are rated similarly on it, marking the opposite pole as undesirable) and the undesired pole of a construct on which the person is discrepant (there is a difference between current self and ideal self ratings in terms of the construct). The researchers

found when examining the construct systems of fibromyalgia participants versus controls that the former group had a higher number of implicative dilemmas, to the extent that it was the single most predictive variable (e.g. more so than self-ideal discrepancies) of MUS versus 'normal' pain group status. When they further analysed the content of the implicative dilemmas using a system to classify constructs (Classification System for Personal Constructs, CSPC; Feixas, Geldschlager & Neimeyer, 2002), they found that 73.9% of dilemmas related to the supplied symptom-construct, which was associated with a congruent 'moral' construct (e.g. 'responsible-irresponsible', or 'hardworking-lazy') in 43.5% of cases. The significance of this finding was that the reduction of the symptom would also threaten an undesirable change to another aspect of the self, most likely in a moral attribute. Compan et al's findings bear resemblance to those of Drysdale's (1989) repertory grid study, where constructs were supplied based on previous work with chronic pain groups rather than elicited idiographically. One of the key findings of this study with 15 acute and 18 chronic (>6 months symptom-duration) low back pain participants was that the symptom-construct was highly and significantly correlated with the supplied construct 'sensitive-insensitive to others', suggesting that the symptom was associated, perhaps on an implicit level, with qualities of tenderness and morality. The study by Benasayag et al. (2004) also found an increased number of implicative dilemmas with IBS participants compared with healthy controls, particularly for those experiencing multiple unexplained physical symptoms. However, they did not specify whether they provided a symptom construct for the IBS sample, and did not do a content analysis to find out which congruent aspects of the self-construct were associated with the symptom – making it unclear whether the dilemmas take on a similar or different form to those in people experiencing chronic pain.

Studies by Large & Strong (1996) and Werner et al. (2004), both involving participants who experience chronic pain, suggest that people who experience MUS may associate a positive self-identity with their perceived ways of coping with pain. Large & Strong used a repertory grid method which looks at standardized distances between how the self is construed compared to various others, including someone who is 'a copier' and someone who is 'a hypochondriac'. They noted that participants construed themselves as being more like 'copiers' and as dissimilar to 'hypochondriacs' based on characteristics including being authentic, having practical mastery of symptoms, not being limited by symptoms, and displaying stoicism with symptoms. They suggested therefore that low back pain sufferers may derive some self-esteem from their 'coping' identity. Werner et al. (2004) similarly noted narrative efforts of women experiencing pain to portray the self as having a mentally 'strong' and 'positive' attitude in relation to their symptoms (as opposed to 'whining and complaining'). Though both authors interpret these processes as means of maintaining self-esteem in the face of losses and stigma, it is quite possible that the 'strong copier' identities may be

positively enmeshed with symptoms. This is reminiscent of research by Kozłowska et al. into the attachment basis of MUS, which has suggested that various MUS may develop from phylogenetic 'freeze' responses (Kozłowska, 2007; Kozłowska et al, 2013). These inhibitory strategies involve a decoupling or inhibition of affect in a context where caregivers withdraw their support, and might respond disapprovingly to the neediness of their children. Construing oneself as 'coping' and 'strong' may stem from the strategic inhibition internal and external signals of vulnerability and neediness.

Lilleas & Von Der Fehr's (2011) formulations about the gender-construed female body and habitus may also constitute a form of implicit identity, tied up with 'a body for others'. Although this may be self-sacrificing at one level, with costs to bodily health, if it constitutes a core self-construction, then making the necessary changes to better manage symptoms may present more threat to their (transpersonal) construct systems than the consequences of maintaining symptoms.

The role of others

Several qualitative papers identified dilemmas about how much they let others see them with symptoms. There was a sense of shame (Hanakson et al., 2005) and exposure of vulnerabilities (Smith & Osborn, 1999) associated with exposure of the self with symptoms. Withdrawing and controlling social contact allowed participants to maintain a 'mask' or pretence that minimizes negatively perceived differences to identity (Asbring, 2001; Miles et al., 2005). If one conceptualizes identity as being dependent on the mirrored reactions of others, then isolating oneself may have an analogous effect to avoiding looking in the mirror for fear of confirming negative change to the self (Hellstroem, 2001). In PCP terms, this strategy may be characterized as 'constriction' involving avoidance of information that is incongruent with a dominant self-construction. However, this strategy, which Miles et al. (2005) termed 'subversion', is double-edged, being accompanied by feelings of isolation and a fear of being cut-off or abandoned (Smith & Osborn, 1998).

Quantitative literature has provided further support that the social or interpersonal domain may be particularly salient in the self-constructions of those experiencing chronic pain. As mentioned earlier, Waters et al. (2004) found that the current-self versus ought-self discrepancies from the perspective of others accounted for the most variance in psychological distress scores. Kindermans et al. (2009) analyzed the content of discrepant attributes between current self and ideal, and ought and feared-for selves. Although they experienced some difficulties in achieving reliability in categorizing discrepancies (final Cohen's Kappa 0.62), they found that interpersonal attributes (including 'honest', 'helpful', and 'not selfish') accounted for the largest number of discrepancies for the 'ought', 'feared-for' and 'ideal' selves, whereas the 'ideal' self was more characterized by physical 'wellbeing' attributes. Though this study did not demonstrate that these discrepancies were

associated with symptoms, the overall salience of interpersonal factors suggests that the challenges of chronic pain on societal roles (the person they want to be or feel they ought to be in social environments) may be as important as those relating to subjective wellbeing. Another study by Kindermans et al. (2010) looked at the relationship between discrepancies and levels of avoidance (not engaging in activities) and persistence ('overdoing it' in certain activities) behaviour in managing pain. They found that current-ideal discrepancies from the perspective of others, but not from their own perspective, significantly predicted levels of persistence. Current-feared-for congruencies from their own and the other perspectives significantly predicted levels of avoidance. Avoidance of activities, but not 'overdoing it', significantly predicted levels of disability and physical health. These findings further emphasize the importance of others' expectations, which motivate behavior to protect social identity in a manner that could be characterized as 'hostile' (i.e. 'overdoing' social activities to maintain public identity at times when the symptom is less intense, and avoiding interaction during times when the symptoms are worst). The motivation to protect social identity may outweigh the motivation to improve symptoms and individual wellbeing (Miles et al., 2005).

Participants with chronic pain (Smith & Osborn, 1998), fatigue (Asbring, 2001) and MCS (Reed-Gibson et al., 2005) spoke about withdrawing from others to avoid having to meet demands and expectations from others that are made difficult by their symptom. This may relate to the 'body for others' theme developed by Lilleas & Von Der Fehr. Swoboda's (2006) study also noted the emergence of a positive identity and desire to be 'a body for other bodies' by mentoring, providing support and advice to other sufferers. As research with repertory grids suggests, changes imposed by the symptom itself, but also the alleviation of symptoms, may threaten how the self is construed in relation to others.

Emergence of alternative identities over time

In addition to evidence of practical accommodating and 'working around' for various symptoms (e.g. Read-Gibson et al, 2005), several papers found evidence of a more 'radical' re-construction of the self (Clarke & James, 2005), involving the emergence of a 'new' self (Asbring, 2001; Swoboda, 2006) with re-evaluated values and priorities (Whitehead, 2006). Rather than being construed as inferior to their pre-symptom self, this new self was regarded as an improvement (Whitehead, 2006), particularly with regards to self-respect and the relationship with the body-self (Afrell, Biquet & Rudebeck, 2004; Asbring, 2001). Although it was over a short time-period, Vagrnsfeld, Morley, Peters et al. (2010) found a reduction on measures of self-pain enmeshment between 4 weeks post-road traffic accident (RTA) and 7 weeks post-RTA, which was associated with a reduction in measures of depression and pain severity. Although one might argue that improvements to both pain and psychological wellbeing are likely to have occurred regardless of a reduction in

enmeshment, the fact that self-ideal discrepancy scores did not change over the identical period suggests that the reduction of distress was not simply the result of improvement in how the self was construed relative to ideals. Perhaps this indicates that the sense of self and identity was construed as more 'internalized' to the person rather than being contingent on pain, reducing distress and promoting recovery. However, a caveat is that the discrepancy between current-self and ideal-self may not have been the relevant measure to compare with enmeshment in the first place, and that it may have been a reduction on a different aspect of self-identity (e.g. learning that the feared-for self has not been realized over time) that was a factor in relieving distress. The study may however be taken to suggest that enmeshment might be a natural response in the early stages of symptom experience.

Summary of research findings

Both quantitative and qualitative research has supported the idea that MUS are construed as having a negative impact on the self, which is construed as a significant change from how the person used to be before the onset of symptoms. Findings from qualitative research suggest that symptomatic identity may be preserved to some extent by splitting or dissociating the self (or mind) from the body, which is characterized as symptomatic, 'ill' and 'other'/non-self. This is made possible by the enmeshment of negative characteristics with the symptom. However, this enmeshment can also create distress, as identity is seen as being contingent upon an unpredictable body. The role of others in validating certain self-constructions means that the social arena is particularly associated with threat. Avoidance of/withdrawal from certain social situations that risk exposure of undesired identities ('constriction'), or 'persistence behaviour' ('hostility') may maintain pre-symptom identity in the eyes of others, but also have the consequence of isolation and depression/'guilt' (where one is not acting consistently with one's core social roles), and exacerbation of symptoms (e.g. through 'overdoing it').

Whilst symptoms are construed at an explicit level as being associated with undesirable changes to the self, research has suggested that the symptom may also be construed as being associated with positive qualities such as being a 'strong copier' and 'being sensitive to others', albeit on a more implicit level. These aspects have been suggested to be of an interpersonal nature. One qualitative paper argues that these aspects of identity may be 'carried out' at an embodied level of 'habitus', with low levels of awareness (Lilleas & Von Der Fehr, 2011). Symptoms could be representing an externalization, or perhaps more aptly, an embodiment, of a conflict where resolving the symptom would involve a more radical and 'nuclear' change to the construction of the self in relation to others, in a similar way to that suggested for agoraphobic symptoms (e.g. Bannister, 1965; Metcalfe,

1997). Indeed, coming to terms with symptoms appears to involve a 'radical' re-construction of the self. This may involve simultaneous re-construction of the former 'healthy' self.

As noted above, the majority of papers are based on findings from homogeneous participant samples experiencing chronic pain symptoms, which may not be generalizable to wider MUS. However, from a constructivist approach, two people's experiences of unexplained and chronic pain may have no more similarity in their personal meaning than experiences of two symptoms which are on the surface differently described (Foulkes & Anthony, 1957, p.66).

Key areas identified in literature review

With regards to the characteristics predicted from the frozen-construing model (Lin & Payne, 2014) of MUS, the following were evidenced in the literature review:

- The self-construction was threatened by the presence of MUS
- The discrepancies between current self and self before symptoms, current self and ideal self, and current self and how the self is ideally seen by others were factors in distress ('guilt' at dislodgement from core roles).
- Symptoms were implicitly associated with aspects of identity that were construed as desirable, aspects which may be construed in a preverbal and embodied manner.
- Dissociation of the self from the symptom, and of the mind (as 'real me') from the body, may be a means of managing threats to identity. However, enmeshment of the symptomatic self with undesirable characteristics raises psychological distress, because the symptom cannot be understood in relation to the current self-construct.

Gaps identified from the review

The relationship between the body and the construction of self has yet to be systematically explored using a quantitative method. Such a quantitative method would be able to confirm relationships between characteristics of the way the body is construed in relation to the self, such as dissociation of the symptomatic body and the self, and clinical measures of distress and symptom severity.

Repertory grid methods have been useful in identifying implicit associations between desirable aspects of the current self and MUS, which carries the implication that symptoms may serve to stabilize the way the self is construed. Exploring how the body enters into the construction of the self using repertory grid methods may reveal whether these congruent and desirable aspects of self are elaborated in a preverbal, embodied way.

The current study aims to address the above gaps by exploring the role of the body and symptoms in

the construing of self and others using the repertory grid method. It will explore the following hypotheses:

3. Hypotheses:

1. The level of integration (or dissociation) of the symptom and symptomatic self within the mind-body construct system

1A: The symptom construct is more likely to be dissociated than other constructs from the core construct system for mind-body identity.

Rationale: people with MUS are expected to struggle to understand their symptom using their well elaborated verbal construct systems for mind-body identity.

1B: Increased dis-integration of the symptom from the rest of the construct-system will increase levels of anxiety; and conversely, if the symptom is dominant in the construct system – this will correlate with depression.

Rationale: With less meaning/understanding of the symptom in relation to constructs for making sense of self and others, the person will experience more anxiety as the symptom construct cannot be used to make predictions about self and others. However, if the symptom is highly intercorrelated with many aspects of mind-body identity (i.e. superordinate), then this 'enmeshment' of the symptom with many facets of identity will likely increase psychological distress, as the person construes their identity as being contingent upon symptom-status (including desirable and undesirable characteristics).

1C: Increased distance in the construal of the self generally from the self when symptoms are worst will have a curvilinear, U-shaped relationship with anxiety and depression symptoms.

Rationale: If the self in-general is identified with the self when symptoms are at their worst, then this will indicate that the person sees their identity as being 'entrapped' by symptoms, which would be expected to be associated with psychological distress. Increased differences between the construing of general self and the self when symptoms are worst should alleviate distress, particularly if negatively construed attributes are enmeshed with symptoms. However, if the self when symptoms are worst is 'dissociated' (i.e. construed as a different person to the self in general), this level of dissociation may actually increase distress, as this would threaten the integrity of the self across the

temporal dimension (Asbring, 2001). The person with worst symptoms is 'not me', which presumably may be distressing.

Hypotheses 2: Discrepancies between aspects of self

2A: The level of depression symptoms will increase with increased distance between how the current-self and how the ideal-self are construed.

Rationale: self-discrepancy theory would predict a linear relationship between increased self-ideal discrepancies and depression symptoms.

2B: increased distance in how the current-self is construed relative to the pre-symptom self will be associated with increased anxiety and depression symptoms, and will relate to increased severity of symptoms.

Rationale: one would expect that the distance between the self before symptoms and the current-self would be related to symptom severity. Increased difference reflecting (mostly undesirable) changes to self as the result of symptoms, which would be expected to increase psychological distress as the result of a change in identity.

2C: Increased difference between the pre-symptom self and the ideal self will be positively correlated with symptoms of depression and anxiety

Rationale: if the person has a chronic sense of being different to their ideals that pre-dates symptoms, then these ideals (which may represent high standards for the self) may influence psychological distress regardless of discrepancies due to symptom status.

2D: The discrepancy between the current-self and the ideal-self will be greater than the discrepancy between the self as seen by others and the self as ideally seen by others. Increased distances between the discrepancies may correlate with increased anxiety and depression.

Rationale: If people with MUS attempts to minimize the impact of symptoms on their public identity, then one would expect the distance between the seen as self and the ideally seen as self to be smaller than the gap between the current-self and the ideal-self. If the difference between the ideals

is significant, the task of trying to meet ideals for the self and ideals for being seen by others may increase psychological symptoms.

2E: increased discrepancy between the ideal-self and the self as ideally seen by others correlates with increased anxiety and depression symptoms.

Rationale: If there are possible differences or perhaps even conflicts between how the ideal-self and the self as ideally seen by others are construed, then this may produce a state of conflict or possible guilt about wanting to move away from core social roles.

Hypotheses 3: Conflicts and implicative dilemmas (IDs)

3A: There will be implicative dilemmas (IDs) where desirable movements towards being physically healthier and symptom-free are associated with undesirable changes to the current-self. These dilemmas will also be present for movement from the how the self is currently seen by others towards the self as ideally seen by others. The number of dilemmas will correlate positively with depression, symptom severity and duration of symptoms.

3B: The number of implicative dilemmas will be greater for movement from the seen as seen by others to the self as ideally seen by others, compared to the number of implicative dilemmas associated with movement from the current-self towards the ideal-self.

Rationale: the literature search identified that the public aspects of self were particularly difficult with regards to changes in identity. Associations between symptoms and positive relational/interpersonal attributes of the current self have also been identified. Changes to symptoms may particularly threaten those positive aspects of self that are interpersonal in nature (i.e. positive aspects of self that are 'seen by others').

3C: Implicative Dilemmas will be more likely for constructs that relate to interpersonal qualities, for which the ideal-self and the current-self are construed as similar (i.e. current-self construed in a desirable way.)

3D: The current self will be less complex and construed more consistently than the self before symptoms.

Rationale: If implicative dilemmas involve a 'no change' position in relation to symptoms (Feixas & Saul, 2000), then the current-self may be construed as being less complex and in a less contradictory

manner than the self before symptoms (demonstrating the stabilizing function of the symptom, Feixas & Villegas, 1993).

4. Method

Design

A non-experimental, correlational design was selected to explore the hypotheses. The study used a modified Repertory Grid (RG) for eliciting physical/bodily constructs in addition to personality/psychological constructs (described in detail below), to explore relationships between construing of the symptom in relation to the broader body/mind construct system, and relationships between characteristics of construing and measures of symptom severity, anxiety and depression.

Participants

The study initially sought to recruit participants from the waiting list for an NHS-commissioned service for people with MUS. The recruitment pathway involved asking GPs to introduce the study to members of the waiting list for group interventions, who had already been screened by the service according to a set of inclusion and exclusion criteria. However, due to a lack of recruitment success via this pathway and time constraints, the study recruited all participants using public advertising on social media sites and support group websites/forums for MUS. The following inclusion and exclusion criteria were used:

Inclusion:

- Aged between 18 and 65 years
- Experiencing a physical symptom (e.g. tiredness, headaches, pains, irritable bowels) for more than 6 months
- Tests for the symptom have come back negative, and the symptom is not linked to a (malignant) organic pathology; or has been given a 'diagnosis of exclusion'
- English-speaking
- The symptom causes distress and impacts on everyday functioning

Exclusion

- Primary diagnosis of a psychiatric condition (e.g. psychosis, personality disorder, major depressive disorder) AND/OR currently being seen in secondary mental healthcare services.
- Non-English speaking

- Current substance misuse disorder
- Experience of trauma or traumatic bereavement in the past 6 months

Power calculation for statistical testing

Power calculations were made to determine the sample size required for demonstrating effect sizes with adequate power (AICBT Ltd, 2017). For the correlational analyses, a sample of 28 participants would be required for detecting a strong positive correlation ($r \leq 0.5$) with desired power (0.8) at the 95% significance level. However, given the recruitment difficulties and time constraints, as a practical compromise the sample size was 20 participants. This gives a 6% increase in alpha-error level for detecting a strong correlation at a borderline level of significance ($p < 0.10$). For the additional chi-squared analyses, this increase in alpha-error level was similar at borderline significance level.

Measures

Repertory Grid (RG)

The repertory grid (RG) is a major research tool for exploring a person's construct system (Kelly, 1995, 1991). It has been used in research with populations experiencing various mental and physical health difficulties (Walker & Winter, 2007), including populations experiencing chronic pain (e.g. Compan et al., 2011; Drysdale, 1989; Large & Strong, 1997; Large, 1985a, 1985b; O'Farrell, Tait & Aitken, 1993).

The RG usually involves a procedure for eliciting personal constructs in the form of word pairs, which are generated by asking the participant to compare people they know ('elements'), including themselves, in terms of likeness and difference. On a pragmatic level, these word pairs (e.g. 'selfish-kind') approximate to a verbalized form of the bipolar constructs that characterize their personal construct system (Butt, 2008). The next part of the procedure involves numerically rating aspects of the self and significant others based on the constructs that have been elicited, generating a data matrix from which various relationships between the elements and constructs can be quantified.

The RG method represents a compromise between idiographic and nomothetic methods (Neimeyer, 2004). It shares the aim of methods such as IPA of trying to see the world from the participant's idiographic perspective, interpreting each individual grid as 'soft data' whose meanings can be construed by the researcher. However, it can also be used in a nomothetic way to extract general patterns of construing across groups. Furthermore, the RG allows for identification of relationships between constructs and elements that may not be verbalizable by participants themselves, such as the implicit relationships between the pain symptom-construct and congruent moral aspects of

identity in Compan et al's (2011) RG study. In addition to 'internal' relationships between elements and constructs, the RG can be used to explore the overall structure of a person's construing: e.g. whether their constructs are tightly bound into a single monolithic system, or whether alternative constellations of constructs are available for more flexible construing. This has made the RG a useful complement to methods that primarily explore the content of personal meaning, such as IPA (e.g. Turpin, Dallos, Owen & Thomas, 2016). For embodied constructs which may be verbally difficult to describe qualitatively, exploring the structure as well as content of construing is important.

Adaptation of the RG

The elicitation procedure was adapted by the researcher, by asking participants to provide constructs that were important for construing the physical or embodied aspects of elements. Alternative adaptations of the RG, such as the 'Body-Grid' (Weber et al., 2001) introduced the whole-body, desired-body and selected parts of the body as elements to elicit constructs for, and evaluate various aspects of, the body. Body-grids have been applied to populations with overlapping physical and psychological presentations, such as cancer (e.g. Weber et al., 2005), in-vitro-fertilization (IVF) and anorexia nervosa (Borkenhagen, Klapp, Schoeneich & Braehler, 2005). A possible extension of the current study using BG design is described in the discussion section. For the current study, primary relevance was on exploration of bodily and psychological constructs for self and others within a single 'body-mind' grid-space. For this reason, whole-person elements were selected.

RG procedure for current study

Constructs were elicited using the 'triadic method' (Kelly, 1955/1991), which involves presenting participants with three elements at a time and asking them to specify 'an important way in which two of them are similar and yet different from the third'. When participants provided a word to describe the initial difference or likeness (e.g. 'calm'), the researcher asked the participant to describe a person who was the 'opposite' of that word (e.g. 'panicky') (Epting, Suchman & Nickelson, 1971). The word-pair was noted down by the researcher as a personal construct (e.g. 'Calm --- Panicky'). Participants were asked to provide 'an important physical or bodily difference' and 'an important personality or psychological difference' for each triad of elements. The order in which psychological and physical constructs were asked for was alternated for each triad, and counterbalanced across the sample (i.e. 10 participants gave a psychological construct first for the first triad, 10 gave the psychological construct second for the first triad). Although research eliciting constructs for the body using the BG has found that participants find it easier to provide constructs for dyads with body parts, the current research opted for triads, as triadic methods are generally

considered to produce construct systems with greater cognitive complexity (Caputi and Reddy, 1999).

The following elements were included in the elicitation:

1. Me (current self)
2. How I would like to be (ideal self)
3. Me when my symptom is at its worst
4. Me before I had the symptom (pre symptom self)
5. A person I know and like (liked person)
6. A person I know and do not like (disliked person)
- 7- 10. A person who is significant to me x 4

The element 'Me (as I am now)' was included in all of the triads, a technique known as the 'self-identification form' (Kelly, 1955). The rationale for this was that the physical self could be compared 'internally' with other self-related elements, as well as being compared 'externally' with non-self elements. A total of 6 triads were compared, giving a total of 6 psychological constructs and 6 bodily/physical constructs. Finally, after comparing the elements, the researcher reminded the participant of the symptom they had described (e.g. 'burning pain in lower back') and asked them to describe a person who was the opposite of a person with that symptom. This provided a 13th construct denoted as the 'symptom construct'. This was done at the end of the triadic elicitations to minimize any implied classification of the symptom construct as either physical or psychological. This last aspect of the procedure deviates from previous research, which provided the symptom with an antonym (e.g. 'in pain' – 'not in pain') rather than eliciting a symptom construct (e.g. Compan et al, 2011; Drysdale, 1989).

Finally, participants were asked to rate a set of elements using a 1 to 7 scale, with each end of the scale representing a pole of the construct (e.g. 7= 'calm', 1= 'panicky'). Participants were instructed to use the midpoint '4' rating if they were unsure whether the construct applied to the given element. The participant rated each element in turn for a given construct, before moving onto the next construct in the order that constructs were first elicited. This produced a 13 x 13 grid of ratings (see example in Appendix Bi). The following elements were added to those listed above in the rating-procedure:

11. My symptom if it were a person
12. How I think other people see me (self as seen by others)
13. How I would like other people to see me (self as ideally seen by others)

The above elements were not included in the elicitation procedure, as the mixture of self/other perspectives within a single triad was thought to be too confusing. The 'symptom as person' element was deemed to be hypothetical/projective for elicitation and therefore only included at the ratings stage. The inclusion of the 'self as seen' elements was particularly relevant to exploring hypotheses relating to the role of interpersonal constructions of self.

Grid matrices were analysed using the IDIOGRID computer package (Grice, 2002) and GRIDSTAT (Bell, 2004b) to extract the key grid indices.

Grid measures corresponding to relevant hypotheses:

Principal Components Analysis (PCA)

Principal Components Analysis (PCA) ('Slater analysis' in IDIOGRID; Grice, 2002) analyses the variance of the grid ratings into components, which represent constellations of constructs which correlate highly with one another, but correlate less with constructs on other components. The components that account for more variance are considered to be more well-developed sub-systems in the person's construct-system, being used to make more predictions than components with fewer constructs. This study replicates Metcalfe's (1997) method with agoraphobic participants by counting the number of times that the symptom construct loads most highly on the largest component (Component 1) compared to the next two largest components (Components 2 and 3). If the symptom is more likely to load on components 2 and 3 than component 1, relative to what would be expected from the loadings of all constructs, then this is evidence that the symptom construct is poorly integrated (i.e. dissociated) within the wider construct system (hypothesis 1A).

Construct Intensity

To allow for a correlational analysis with psychological distress symptoms and symptom severity measures, a continuous variable for integration/dissociation of the symptom construct is required. The intensity of the symptom construct is calculated by summing the squared values of correlations of the symptom construct with the rest of the constructs, then averaging by total number of constructs minus one. This can be correlated with scores on the PHQ-9 and GAD-7, as per Hypothesis 1B.

Distances between elements

The correlations between the ratings of different elements can be calculated as distances between elements in the 'grid-space', which are standardized according to all other inter-element differences within the grid (Grice, 2002). These Standardized Euclidean Distances range between 0 and 2, where a distance of 0 indicates that elements are construed as identical, distances ≤ 0.8 represent similarity,

and distances ≥ 1.2 suggest dissimilarity between elements (Makhlouf-Norris & Norris, 1973). If the elements 'current-self' and 'self when symptoms are at their worst' are construed as dissimilar (>1.2), this could be taken as a measure of dissociation, which can be correlated with symptom-severity and psychological distress (hypothesis 1C).

According to self-discrepancy theory (Higgins, 1987), the distance between the current self and the ideal self should correlate positively with depression (hypothesis 2A). The distance between the self before symptoms and current self, representing loss of former identity, would also be expected to correlate positively with depression measures (hypothesis 2B). If people with MUS show a desire to maintain a public identity, one would expect that the discrepancy between self as currently seen by others, and self as ideally seen by others, would be less than the distance between current self and ideal self (hypothesis 2D). The conflict (distance) between different ideals may increase psychological distress (hypothesis 2E).

Implicative Dilemmas

An alternative way of measuring conflict in grids is by counting the number of implicative dilemmas in the grid (Feixas & Saul, 2005). These are usually considered in terms of dilemmas associated with movement towards their ideal self (e.g. reduction in symptoms), but in this research, they will also be defined as dilemmas associated with movement towards the self as ideally seen by others. Implicative dilemmas are counted when the congruent pole of a construct (current self and ideal self are correlated, marking the opposite pole undesirable (Feixas & Saul, 2005)) is highly correlated ($r > .35$) with the discrepant pole (the current self and ideal self are rated on opposite ends of the construct, marking the current-self as undesirable). It will be interesting to see if physical characteristics in terms of which the self is discrepant from the ideal self' (e.g. healthy-unhealthy), including the symptom construct, are implicitly associated with congruent characteristics in how the self is construed and seen by others. In such cases, changes to the body-self and MUS would present the person with a dilemma. An increased number of dilemmatic associations would be expected to be correlated to measures of depression and anxiety (hypothesis 3A).

The literature review suggests that the social/interpersonal domain is particularly important for this population, so one would expect the number of implicative dilemmas to be greater for movement from the self as currently seen to the self as ideally seen by others (hypothesis 3B). To further test this hypothesis, constructs were rated using the Classification System for Personal Constructs (CSPC) (Feixas, Geldschlager & Neimeyer, 2002)– a coding system for categorizing constructs into one of 6 categories relating to 'Moral', 'Emotional', 'Relational', 'Personal' and 'Intellectual/Operational, and 'Values and interests'. An additional 7th category of 'physical' suggested by Dada et al. (2017) could

have been used – however, this category was pre-emptively provided in the elicitation. Physical constructs were categorized using some of the ‘physical’ categories suggested by Dada et al., including ‘body-appearance’, ‘physical malaise’ and ‘attitude towards body’, plus additional categories suggested by the data. Where physical constructs were involved in implicative dilemmas, or were the constructs associated with the highest percentage of conflicts for that grid, the category corresponding to the highest correlating psychological construct was noted (e.g. ‘heavy’ correlating with ‘responsibility’). This would allow for embodied constructs to be potentially ‘decoded’ in implicative dilemmas (hypothesis 3C).

Construct and Element Conflict

Conflict within a grid can be identified by examining the relationship between each element and pairs of constructs for inconsistencies in how they are construed (Bell, 2004a), where either (i) ‘an element is at the same time similar or close to two constructs which are themselves different or distant’; or (ii) ‘An element is similar or close to one construct’s pole and at the same time is different to or distant from another construct’s pole, where the two construct poles are similar or close’ (Bell, 2009, p. 34). These are called ‘Element-Construct Triangular Inequalities’ (Bell, 2004a) and the total distribution of these in grids can be attributed as a percentage to each of the elements and constructs in the grid. These conflicts can be seen either as reflecting flexibility or complexity on the one hand, or threatening the meaning and internal coherence of construct system on the other.

One might expect the level of conflict attributed to the current self to be lower than that for the pre-symptom self, if the symptom reduces inconsistencies in how the self is construed (hypothesis 3D).

Summary of key grid indices for testing hypotheses:

Construct system characteristic	Grid measure	Relevant hypothesis
Dissociation or integration of symptom construct with the remainder of the construct system	1. Principal components analysis (PCA). The frequency of highest loading on component 1/2/3 for symptom-construct vs. all constructs.	1A
	2. Symptom construct intensity	1B

Perceived similarity and dissimilarity between the self in general, and the self when symptoms are worst	Standardized Euclidean Distance between current self and self when symptoms are worst	1C
The perceived difference between the current self and the ideal self	Standardized Euclidean distance between the Self and the Ideal-Self.	2A
Perceived change in identity due to symptom (i.e. difference between current self and self before symptoms)	Standardized Euclidean Distance between the current self and the self before symptoms.	2B
Perceived distance between the self before symptoms and the ideal self	Standardized Euclidean Distance between the pre symptom self and the ideal self.	2C
Perceived distance between how the self is currently seen by others compared to how the self is ideally seen by others	Standardized Euclidean Distances between the self as currently seen by others and the self as ideally seen by others.	2D, 2E
Number of Implicative dilemmas associated with movement from the current-self towards the ideal self	An implicative dilemma is counted when congruent pole of a construct (present and ideal rated at desirable end of construct) is highly correlated ($r > .35$) with the discrepant pole of another construct (current self is rated at the opposite, undesired pole, to the ideal self)	3A, 3B
Number of Implicative dilemmas associated with movement from	An implicative dilemma is counted when congruent pole	3A, 3B

the self as currently seen by others to the self as ideally seen by others	of a construct (self as currently seen by others and self as ideally seen rated at desirable end of construct) is highly correlated ($r > .35$) with the discrepant pole of another construct (self as currently seen by others is rated at the opposite, undesired pole, to the self as ideally seen)	
Level of conflict in construing of current self, versus self before symptoms	Element-construct triangular inequalities- percentage of conflicts attributed to different elements	3D

Measure Yourself Medical Outcome Profile 2 (MYMOP-2)

The MYMOP (Paterson, 1996) (Appendix Bii) is a symptom-focused, patient-generated instrument which requires the participant to specify at least one symptom and one valued activity that the symptom interferes with. Participants rate the symptom on a seven-point scale (0= 'as good as it could be'; 7= 'as bad as it could be'). Questions on general wellbeing and coping strategies are similarly scaled. Three scales and an overall score are produced. The overall profile score will be regarded as the single measure of symptom severity in the analysis. This questionnaire tool has been used in both clinical and research contexts within primary care settings, with populations with a variety of chronic symptoms (e.g. Hill et al., 1999; Payne & Brooks, 2016; Paterson et al., 2000). When participants reported experiencing multiple symptoms, the researcher asked participants to specify the symptom that 'bothered them the most, or that they were most motivated to seek explanation for and/or relief from'.

Generalized Anxiety Disorder Scale (GAD-7)

The GAD-7 (Spitzer et al., 2006) (Appendix Biii) is a structured 7-item questionnaire tool on self-reported symptoms of anxiety over the past 2 weeks. It is widely used in outpatient and primary care settings as a tool to assess for generalized anxiety disorder (Lowe et al., 2008). It has been used for outcomes research with MUS populations (e.g. Payne, 2015; Payne & Brooks, 2016).

Patient Health Questionnaire (PHQ-9)

The PHQ-9 (Appendix Biv) is a structured self-report 9-item questionnaire tool on self-reported

symptoms of low mood and depression (based on the 9 DSM-IV criteria for depression) over the past 2 weeks. Its use has been validated in outpatient and primary care settings (e.g. Kroenke et al, 2001; Spitzer, Kroenke, and Williams, 1999) and with MUS populations (Payne & Brooks, 2016).

Procedure

The study was advertised on social media sites, and with the permissions of the relevant administrators, on forums and support/information websites for various MUS conditions (e.g. Fibromyalgia Association Website, IBS network, CFS network). A link was provided to a study website from which the participant information sheet (Appendix C) could be downloaded. Potential participants were invited to contact the researcher directly to find out more about the study. The researcher provided those who expressed an interest in taking part with an information sheet if they did not already have one. Following confirmation of interest on behalf of potential participants, an interview was arranged at a convenient community location, or over *Skype* video-conferencing computer program. Participants were asked to complete a copy of the written consent form (Appendix D) either prior to the interview meeting, or at the start of the interview.

Face to face interviews lasted between 60 and 90 minutes. Four of the interviews took place in person, and the remaining fourteen interviews were conducted via *Skype*. Initial demographic information was collected, followed by completion of the MYMOP-2, PHQ-9, GAD-7, and finally the repertory grid.

Ethical Considerations

Ethical approval was sought initially from the University of Hertfordshire, the Health Research Authority (HRA), and an NHS Research Ethics Committee (REC) for recruitment involving Primary Care surgeries as Participant Identification Centres (PICs). The study received approval to recruit in February 2017. Due to a lack of recruitment success, approval was obtained from the University of Hertfordshire for recruitment using public advertisements (appendix E). Recruitment via this second pathway began in March 2017, and the interviews were conducted between March and May 2017.

Due to the personal nature of the material discussed, and the way that the repertory grid method involves reflecting on and numerically stating the impact of symptoms, the possibility of distress to participants during interviews was given consideration in the study protocol. Offering participants to pause or discontinue, or alternatively suggesting that they seek further support (e.g. from their GP) were options available to the researcher. Another factor considered in the ethical factors was the level of physical demands of taking part in interviews lasting up to 90 minutes, for a population who experienced various physical symptoms. To make participants as comfortable as possible and avoid

exacerbation of symptoms, the researcher was flexible with regards to time and location of interviews (e.g. *Skype* allowed participants to take part in interviews from the comfort of their own home), and participants were informed that they could take breaks or discontinue if they began to feel physically uncomfortable during interviews.

Service User Involvement

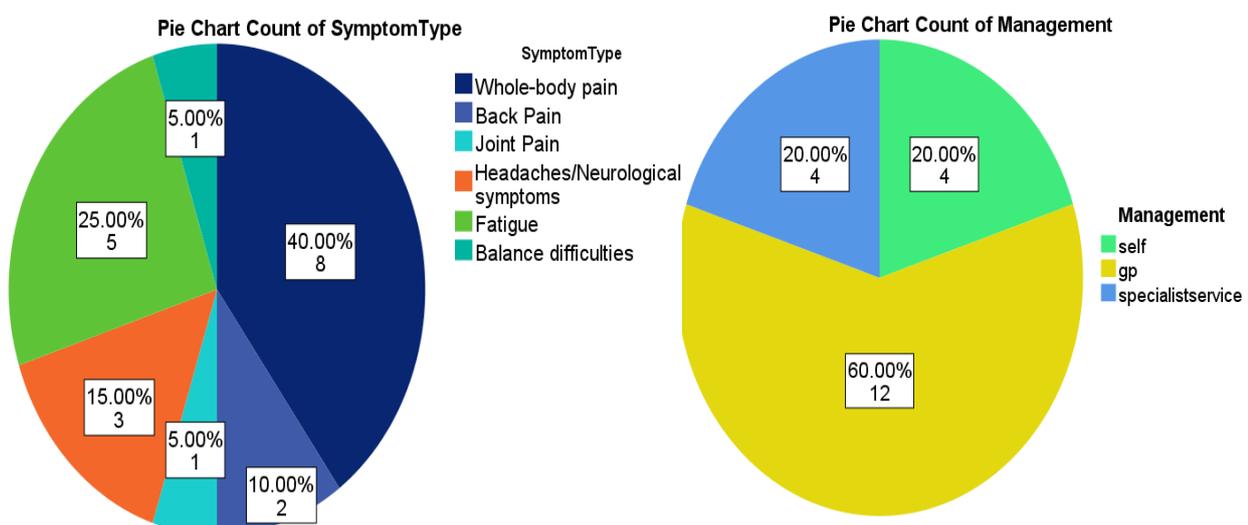
A previous service user of an MUS 'symptoms groups' intervention provided consultation on the study procedure, including the appropriateness of the questionnaire tools for a primary care population. They also provided advice on how advertisements and study documents could be sensitively worded for a population who may be wary of psychological research.

5. Findings

Description of participants

Eighteen women and two men took part in the study. The sample was aged between 25 and 71 years old (mean age = 46.95). The majority of the sample consisted of people experiencing various forms of chronic pain (11), including back pain (2), joint pain (1) and 'all over body pain'/fibromyalgia (8). The remainder of the sample consisted of people who experienced fatigue (5) neurological symptoms such as migraines (3) and one participant who was experiencing unexpected loss of coordination leading to falls. All participants considered their symptoms to be lacking adequate medical explanation, and described having undergone various tests (e.g. scans, blood tests) which came back negative. The majority of the sample had received a medical label in the absence of this explanation, including 'chronic fatigue syndrome' (CFS) and 'fibromyalgia'. Some of the sample mentioned having been diagnosed with anxiety and depression in the past, although none currently had a psychiatric diagnosis.

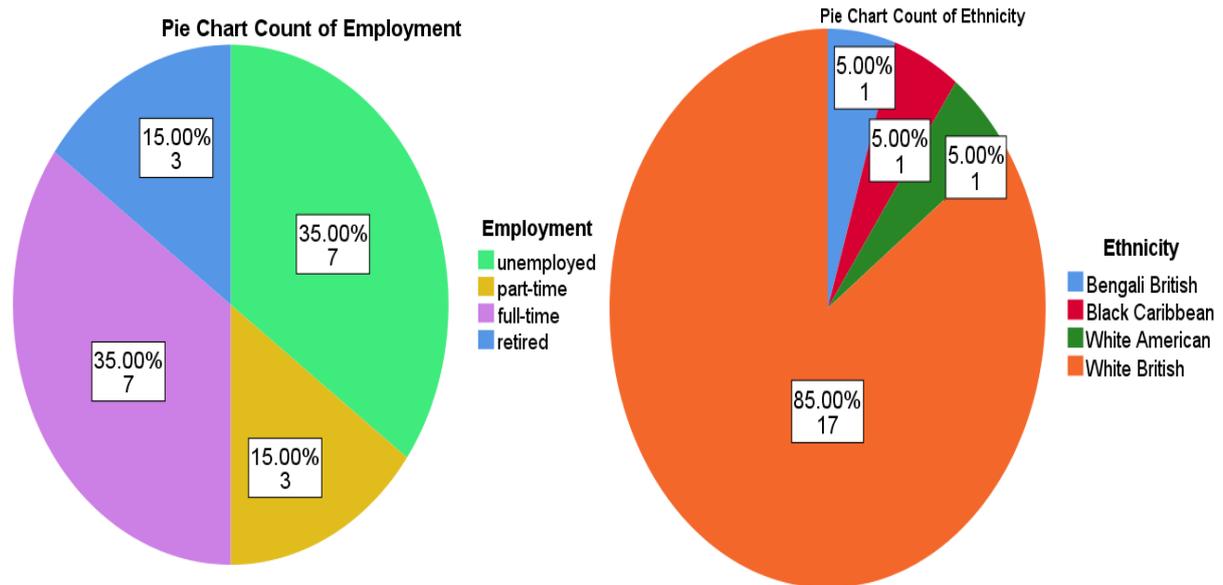
Figure 1: Pie charts displaying MUS-type and management form



Management preferences

The majority of participants (12) sought support for their symptom from their GPs. If the contact with GPs was infrequent (less than five times per year) then the participant was classified as 'self-management'. The number self-managing was four (20% of the sample). Those receiving 'specialist support' (e.g. specialist or multi-disciplinary outpatient) made up the remainder (20%) of the sample (Figure 1, right).

Figure 2: Pie charts showing employment status and ethnicity of participants.



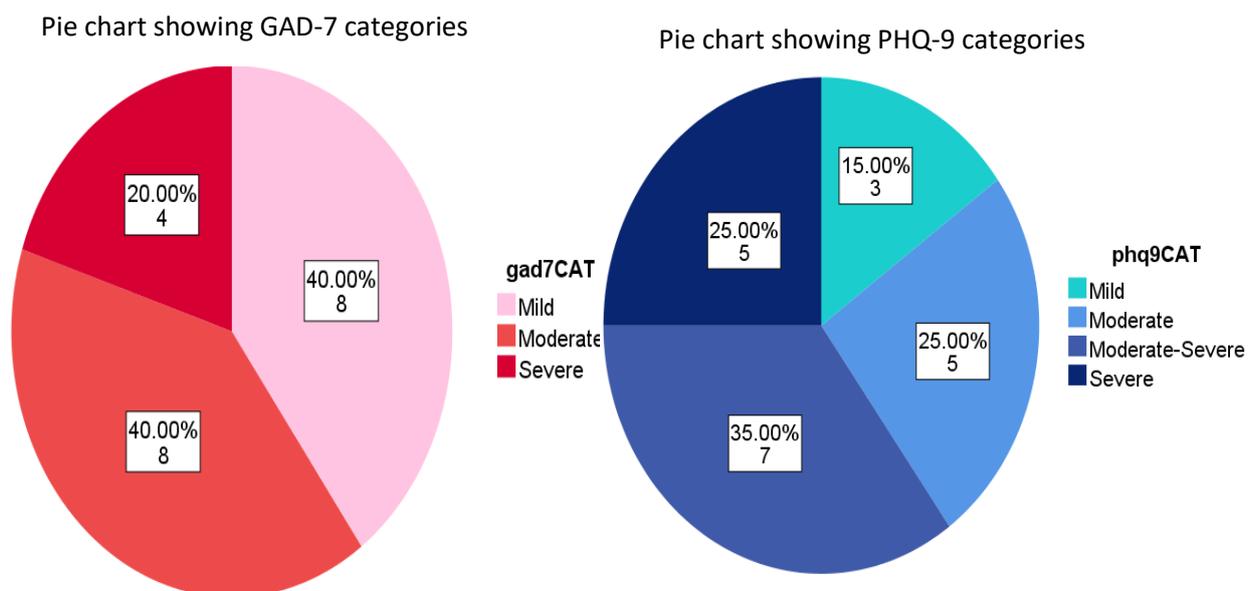
The majority of the sample (80%) could therefore be regarded as a primary care population. None of the sample were receiving psychological treatment (e.g. cognitive-behaviour therapy (CBT)) at the time of interview, although four of the participants mentioned having received a form of talking therapy in the past, for a mixture of reasons including trauma, depressive symptoms relating to the symptom, and for psychological support unrelated to symptoms.

For a summary of clinical variables, see Table 1. All participants had experienced symptoms for over 6 months. The participant who experienced an MUS of unexpected loss of coordination and balance reported experiencing other forms of unexplained physical symptoms prior to the onset of this particular MUS. None of the participants scored below a '3' out of 6 on the MYMOP profile score (where 0= 'as good as it can be' and 6= 'as bad as it can be'). The PHQ-9 and GAD-7 scores have been categorized in terms of normative severity ratings, presented in Figure 3, to give clinical relevance to these scores. MYMOP-2 scores do not have normative data available for comparison.

Table 1: Descriptive statistics for MUS and psychological symptoms.

	Mean	Median	Std. Deviation	Minimum	Maximum
Duration of MUS (years)	9.03	6.50	6.94	1	24
MYMOP profile score	4.23	4.50	.89	2.33	6.00
GAD-7 Score	11.05	11.50	4.53	2	5
PHQ-9 Score	16.45	17.00	5.77	5	29

Figure 3: Pie charts of PHQ-9 and GAD-7 categories



As can be seen from in Figure 3, the sample is characterized by the full range of categories for severity of symptoms of anxiety and depression. As mentioned above, despite some participants scoring in the moderate-severe or severe ranges, none of the participants were receiving a form of psychiatric or psychological treatment at the time of the interview. Several participants described experiencing low mood and frequent anxiety about their symptoms. However, they also reported that they did not talk about the psychological impact of MUS with healthcare professionals, in case this resulted in their physical symptoms being judged as 'psychosomatic'. The perceived external (and possible internal) stigma about mental health and its relationship to physical symptoms may

present a considerable barrier to accessing services (this is considered further in the discussion section).

A series of one-way ANOVAs was conducted to examine possible relationships between group factors (symptom type, preferred management, employment status) and clinical variables. Except for one person who experienced unexplained balance difficulties and had a significantly longer duration of MUS than the other symptom types, none of the grouping variables had significant between-group effects on PHQ-9, GAD-7, MYMOP or duration of symptom (see Table 2).

Table 2: descriptive statistics for PHQ-9, GAD-7, MYMOP-2 and duration of symptoms.

Group variable		PHQ-9		GAD-7		MYMOP-2		Duration of MUS	
		mean	Sd	Mean	sd	mean	sd	mean	sd
Management of MUS	Self	18.50	5.60	9.00	7.59	4.26	.69	7.75	8.85
	GP	15.92	4.49	12.00	5.82	4.22	.74	7.71	5.98
	Specialist service	16.00	3.86	10.25	4.69	4.83	1.11	14.25	7.50
F-value		.29		.71		.71		1.49	
p-value (sig.)		.51		.75		.75		.25	
Employment	Unemployed	18.71	5.28	14.29	3.95	4.71	.91	11.57	7.28
	Part-time	19.00	8.66	9.67	3.79	3.78	.19	7.67	7.37
	Full-time	13.29	4.82	9.57	2.94	4.38	.85	7.71	5.23
	Retired	16.00	5.00	8.33	7.09	4.35	.58	7.50	10.85
F-value		2.26		1.38		1.21		.44	
p-value (sig.)		.12		.30		.34		.72	
Type of symptom	All-body pain	16.63	6.34	9.25	5.42	4.17	.67	6.75	2.19
	Back pain	19.00	7.07	13.00	7.07	4.34	.47	10.50	5.99
	Joint pain	16.00	7.50	8.00	3.65	4.67	-	4.00	7.78
	Headaches	13.67	5.70	11.00	3.11	4.67	1.53	20.00	4.00
	Fatigue	16.00	5.77	12.80	4.54	4.53	.87	8.20	3.96
	Balance	21.00	-	16.00	-3.67	3.67	-	.50	-
F-value		.29		.75		.33		3.5	
p-value (sig.)		.91		.60		.89		.03	

Summary of analysis procedures

A series of parametric and non-parametric correlational analyses were conducted (after removal of outliers) to examine relationships between relevant grid indices (see Table 3) and scores on the PHQ-9, GAD-7 and MYMOP-2, and duration of symptoms (which was also explored as an independent variable). Analyses were conducted as one-tailed where a relationship had been predicted a priori. For hypothesized curvilinear relationships between variables, squared-transformations were used in correlations. Table 4 provides a summary of correlational analyses, with borderline significant ($p \leq .10$) and significant ($p \leq .005$) results highlighted.

Hierarchical regression tests were conducted to further explore the predictive values of significant indices in relation to the PHQ-9 and GAD-7 scores (Table 8). Only one index correlated significantly with MYMOP-2 and symptom-duration measures respectively, so no hierarchical regression analysis was necessary for these dependent variables.

Categorical data, including the component which constructs correlated most highly with (1 to 3), type of construct (physical, psychological or MUS), and the content-classification of constructs, was analysed using chi-squared tests.

One-way repeated measures ANOVAs, paired-samples t-tests, or non-parametric equivalents of these tests, were conducted to explore differences in element properties, and relevant comparisons of discrepancies between elements.

Table 3: Descriptive data for key grid indices

Grid index	Description	Mean (or median where specified)	Standard deviation (or Inter-quartile range where specified)
Standard Euclidean distances between elements (discrepancies)	current self --- ideal self	1.15	.19
	current self ---- pre symptom self	.91	.29
	Pre symptom self --- ideal self	.43	.26
	current self --- ideally seen as by others	.97	.23
	Seen as by others --- self ideally seen as by others	Mdn .73	IQR .41
	Current self --- self when symptom worst	.77	.25
	Ideal self --- ideally seen as by others	Mdn .28	IQR .46

Difference between element distances	Current self---ideal self distance, minus seen as by others--- ideally seen as by others distance	.32	.22
Symptom intensity	% sum squares of symptom construct	.69	.10
Symptom conflict	% triangular inequality conflicts attributed to symptom construct	8.31	.24
Element-Conflict: % triangular inequality conflict attributed to each element	Current self	6.92	2.13
	Ideal self	9.25	1.95
	Self when symptoms are worst	10.53	2.06
	Self pre symptoms	7.21	2.95
	Seen as by others	6.34	2.19
	Ideally seen as by others	8.29	2.66
Difference in element conflict %	% conflict attributed to Current self --- % conflict attributed to pre symptoms self	-3.25	39
Difference in percent sum squares of grid ratings between elements	Current self %sumsquares ---- self pre symptom %sumsquares	Mdn 34	IQR 79.5
Correlations of psychological vs. physical constructs with symptom construct	Mean correlations between physical constructs with symptom construct minus mean correlations between psychological constructs and symptom construct	.08	.14

Table 4: Correlational analyses summary

Dependent Variable → Independent ↓	Relevant hypothesis	Pearson correlation (r)			
		PHQ-9	GAD-7	MYMOP-2	Duration of MUS (r _s)
Age	X	-.15	-.10	.06	X
Intensity of symptom-construct	1B	-.36*	-.39*	.13	.10
(Intensity of symptom construct) ²	1B	-.31*	-.36*	.15	X
Distance between current self and self when symptoms are worst	1C	-.48**	-.36*	.11	.24
Distance between current self and ideal self	2A	.24	.39**	.04	.08
Distance between current self and self before symptoms	2B	.08	-.15	.32*	.08
Distance between ideal self and self before symptoms	2C	.38*	.55**	-.09	.05
Difference between distance between current self and ideal self, and self as currently seen by others and self as ideally seen by others	2D	.49**	.31*	.11	.23
SelfConflict% minus PreSymptomConflict%	3D	.16	.33*	-.08	.15
Spearman's rank correlation (r _s)					

Distance between self as currently seen by others and self as ideally seen by others	2D	-.37*	-.02	-.28	.30
Distance between ideal self and self as ideally seen by others	2E	.48**	.32*	.12	-.51**
Duration of symptoms	X	-.40*	-.20	.28	X
Kendall's Tau (τ)					
Implicative dilemmas associated with movement from current self to ideal self	3A-B	-.21	-.20	-.20	.30
Implicative dilemmas associated with movement from self as currently seen by other to self as ideally seen by others	3A-B	.12	.18	-.01	-.11

* $p \leq .10$ ** $p \leq .005$

Findings relating to key hypotheses

Hypothesis 1. Measures of integration and dissociation of the symptom construct and symptomatic self

1A: Correlation of symptom construct with principal components

The table below shows observed and expected values for the number of occasions on which the symptom construct, and other constructs, correlated mostly highly with each of the first three largest components (ordered in terms of the amount of grid variance they account for). The symptom construct was not significantly more likely than other constructs to correlate most highly with the second or third components. In fact, the trend was for symptom constructs to load most highly on the first component, though this was not significant (see Table 5). The lack of constructs loading highly on the third component suggests a lack of possible complexity in participants' construct systems for mind-body identity (Bell, 2004a).

Table 5: Observed and expected values for symptom and non-symptom constructs correlating most highly with each component, and overall test statistics for chi-squared analysis.

		Component which construct correlated with most highly			
Construct-type		Component 1	Component 2	Component 3	Total
Symptom Construct	Observed Number	17	3	0	20
	Expected Number	14.4	4.6	1	
Non-symptom constructs	Observed Number	170	57	13	240
	Expected Number	172.6	55.4	12	
Total		187	60	13	260
$\chi^2 (2,20) = 2.21 \quad p = .33$					

The integration of the symptom construct might be accounted for by the symptom constructs having a significantly higher mean correlation with physical constructs ($\bar{x} = .71$) than with psychological constructs ($\bar{x} = .62$) ($t(18)=2.99, p=.01$). Another Chi-squared test looking at relative highest-correlations of constructs categorized as 'physical', 'psychological' and 'MUS' additionally showed that the number of physical constructs correlating most highly with the first component was higher than expected. The number of psychological constructs loading on the second and third components was greater than expected also. However, the overall test value was not significant ($\chi^2 (4,20)= 6.09, p= .19$).

1B: Intensity of the symptom construct within the mind-body construct system A Jonckheere-Terpstra test for ordered alternatives indicated a significant trend of increased median intensity for symptom constructs (Mdn=.71, IQR= .11) over physical (Mdn= .68, IQR= .19) and psychological (Mdn = .64, IQR= .23) constructs ($T_{JT}= 10881, z= 2.042, p= .04$). There was a borderline-significant (one-tailed) negative correlation between symptom construct intensity ($M= .69, SD=.10$) and PHQ-9 scores ($r(19)= -.40, p= .07$). A U-shaped relationship between intensity and PHQ-9 did not add significant explanatory value over a linear relationship ($\Delta F= 1.17, p= .29$). A borderline-significant negative correlation was found with GAD-7 scores ($r= -.39, p= .051$). A curvilinear relationship between symptom intensity and GAD-7 scores was also borderline-significant ($r= -.36, p=.054$); however, this

U-shaped relationship did not add significant predictive value to the linear relationship GAD-7 scores and symptom intensity ($\Delta F= 1.31, p= .29$).

1C: Distance between the current self and the self when symptoms are worst

The distance between the current self and the self when symptoms are worst was less than 0.6 for three participants, indicating that they construed the elements as being similar to one another. One of these participants construed these elements as being very similar (0.2). Only one participant might be considered to dissociate the self when symptoms are worst from their current self, with a distance greater than 1.2 (1.25). After removing the latter participant as an extreme outlier, a significant (one-tailed) negative correlation was found between the distance between the current self and the self when symptoms are worst ($M= .77, SD= .25$), and PHQ-9 scores ($r(19)= -.48, p=.02$) (Appendix Fi). A borderline-significant negative correlation was found between the distance between the current self and the self when symptoms are worst and GAD-7 scores ($r(19)= -.36, p=.06$) (Appendix Fii). No significant correlation was found between MYMOP score and the distance between these two elements ($r= .24, p= .47$).

2. Hypotheses relating to distances between elements relating to the self

2A: Distance between current self and ideal self

The mean distance between the current self and the ideal self ($M=1.15, SD = .19$) was close to the value of 1.2, indicating that they were generally regarded as being dissimilar. Discrepancies did not positively correlate with scores on the PHQ-9 to a significant degree (one-tailed) ($r= .24, p= .16$). However, distances between the current self and the ideal self were significantly positively correlated with GAD-7 scores ($r(20)= .39, p= .05, \text{one-tailed}$) (Appendix G).

2B: Distance between the current self and the self before symptoms

A borderline-significant positive correlation was found between the distance between the current self and the self before symptoms ($M= .91, SD = .29$) and MYMOP-2 scores ($r= .32, p= .08$). No significant correlations were found between the distance between the current self and the self before symptoms and scores on the PHQ-9 ($r= .08, p= .36$) or GAD-7 ($r= -.15, p= .26$).

2C: Distance between self before symptoms and the ideal self

The distance between the self before symptoms and the ideal self ($M= .43, SD= .26$) was significantly positively correlated with GAD-7 scores ($r(20)= .55, p= .01$) (Appendix H), and positively correlated with PHQ-9 scores at borderline (one-tailed) significance ($r(19) = .37, p=.06$).

2D: The difference between the distance between the current self and the ideal self, minus the distance between the self as currently seen by others and the self as ideally seen by others.

As the differences between the distance between the current self and the ideal self, minus the distance between the self as currently seen by others and the self as ideally seen by others, was not normally distributed, a Wilcoxon Signed-Ranks test was used. The distance between the self as currently seen by others and the self as ideally seen by others (Mdn = .73, IQR= .41) was significantly lower than the discrepancy between the current self and the ideal self (Mdn= 1.25) ($Z = .37$, $p < .001$).

A one-way within-subjects ANOVA showed significant differences between means for different discrepancies between aspects of self (Greenhouse-Geisser correction, $F(3, 38.56) = 7.98$, $p = .001$, $\eta^2 = .30$). This result was accounted for by the mean distance between the current self and the ideal self being significantly greater ($M = 1.15$) than the mean distance between the current self and the self when symptoms are worst ($M = .77$, $SD = .25$), the mean distance between the current self and the self before symptoms ($M = .97$, $SD = .23$) and the distance between the self and the self as seen by others ($M = .97$, $SD = .23$).

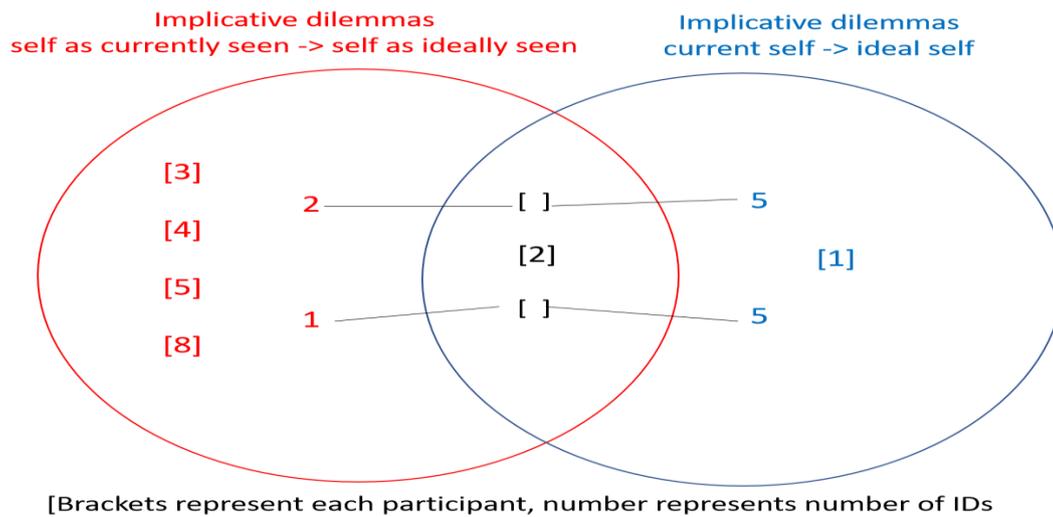
2E: Distance between the ideal self and the self as ideally seen by others

The distance between the ideal self and the self as ideally seen by others ($M = .32$, $SD = .22$) was positively correlated with PHQ-9 scores ($r(20) = .53$, $p = .02$) (two-tailed) (Appendix I), and was positively correlated with the GAD-7 at borderline (two-tailed) significance ($r(20) = .36$, $p = .07$). No significant correlation was found for the distance between ideals and MYMOP scores ($r(20) = .11$, $p = .66$, two-tailed).

Hypothesis 3: Implicative dilemmas and conflict pertaining to constructs and elements

Less than half of the sample ($n = 8$) had implicative dilemmas in their grids. Four participants had IDs exclusively relating to movement from the self as currently seen by others to the self as ideally seen by others. One participant had implicative dilemmas exclusively relating to movement from the current-self to the ideal-self. Three participants had both forms of implicative dilemmas in their grids (Figure 5).

Figure 5: Distribution of implicative dilemma types



3A: Relationship between Implicative dilemmas and outcome measures

Due to the high number of participants with matched scores of zero, Kendall's Tau was used to test association with clinical variables (Field, 2009; Hull & Jenkins, 1970). No significant relationships were found between the number of IDs associated with movement from the current self towards the ideal-self and PHQ-9 ($\tau_b = -.21$, $p = .13$, one-tailed) or the GAD-7 ($\tau_b = -.14$, $p = .14$, one-tailed), and a borderline-significant negative relationship was found between number of IDs and MYMOP profile scores ($\tau_b = -.26$, $p = .09$, two-tailed). With regards to IDs associated with movement from the self as currently seen by others to the self as ideally seen by others, no significant (one-tailed) associations were found between number of IDs and scores on GAD-7 ($\tau_b = .01$, $p = .49$) or MYMOP ($\tau_b = .10$, $p = .29$). A borderline significant association was found between PHQ-9 score and the number of IDs associated with the movement towards the self as ideally seen ($\tau_b = .22$, $p = .09$). As IDs would be expected to be associated with chronicity of symptoms, further Kendall's Tau tests were conducted to explore relationships between duration of symptoms and number of IDs. No significant relationships were found between number of IDs associated with movement towards the ideal self ($\tau_b = -.11$, $p = .27$) and duration of MUS. The number of IDs associated with movement towards the self as ideally seen by others was positively associated with duration of symptoms at borderline (one-tailed) significance ($\tau_b = .23$, $p = .09$).

3B: Number of IDs associated with movement towards the ideal self relative to number of IDs related to movement towards the self as ideally seen by others.

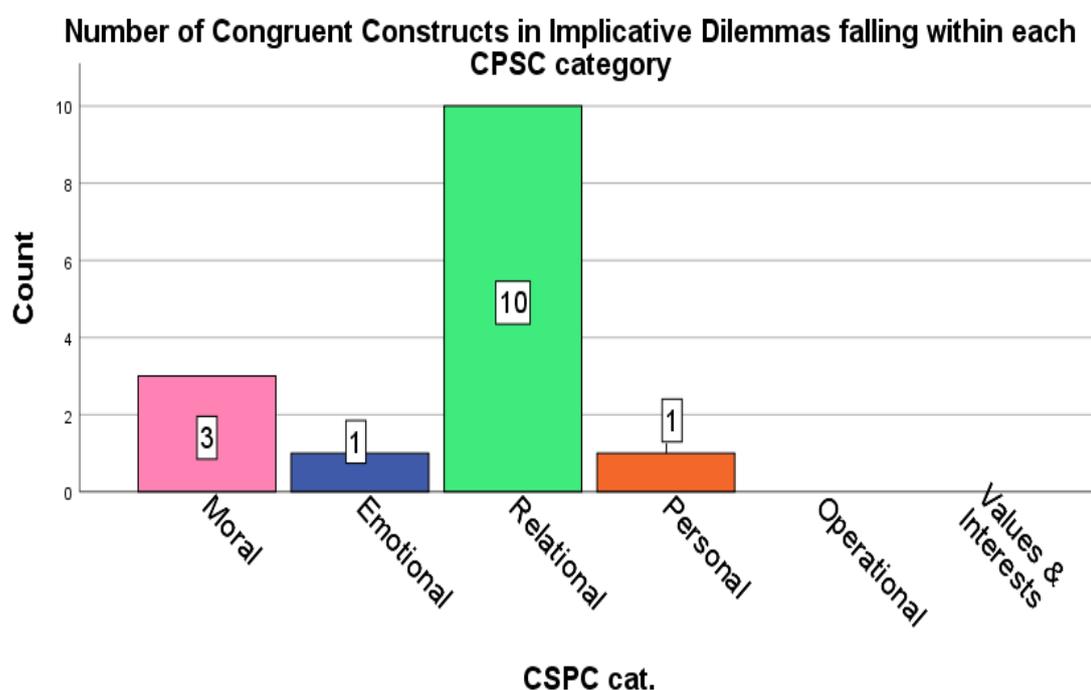
Due to the asymmetry of differences between IDs associated with movement from the current self to the ideal self, and IDs between the self as currently seen by others and the self as ideally seen by

others, a paired-samples Sign-Test was used to compare the distributions of IDs. The sign-test did not find a significant difference between the distribution of the two types of IDs (two-tailed $p = 1.00$).

3C: Content analysis of implicative dilemmas:

Sentence-form descriptions of main IDs for each participant are provided in Appendix J, along with metaphorical interpretations of mind-body construct associations made by the author. Each construct was allocated to the categories of the Category System for Personal Constructs system (CPSC) (Feixas, Geldschlager & Neimeyer, 2002), including physical constructs that correlated highly (>0.6) with psychological constructs belonging to a particular CPSC category. The test indicated significant differences in CPSC categorization of congruent constructs involved in IDs (i.e. current self and either ideal self or self as ideally seen by others are rated as being at the same end of a desirable construct-pole) compared to what would be expected from CPSC categorization of all psychological constructs (Table 6) ($\chi^2 (5,20) = 13.305, p = .021, 2$ -tailed). The observed number of cases was notably greater than expected for congruent constructs classified as 'moral' and in particular 'relational' (Figure 6)

Figure 6: Bar-chart showing distribution of congruent constructs in IDs across CPSC categories



Using the reverse process described above to physically classify congruent psychological constructs in IDs that correlated highly with physical constructs, another chi-squared test of the number of observed versus expected number of congruent physical constructs falling under different physical categories was conducted. The overall statistic was significant ($\chi^2 (6, 162) = 20.552, p = .015$). Of the

15 physically categorised congruent constructs, 3 were related to gender (expected count for this category was 0.5). Strength, Age and health function all had more congruent constructs than expected (Table 7 and Figure 7).

Figure 7: Bar chart of different physical categories of ID constructs

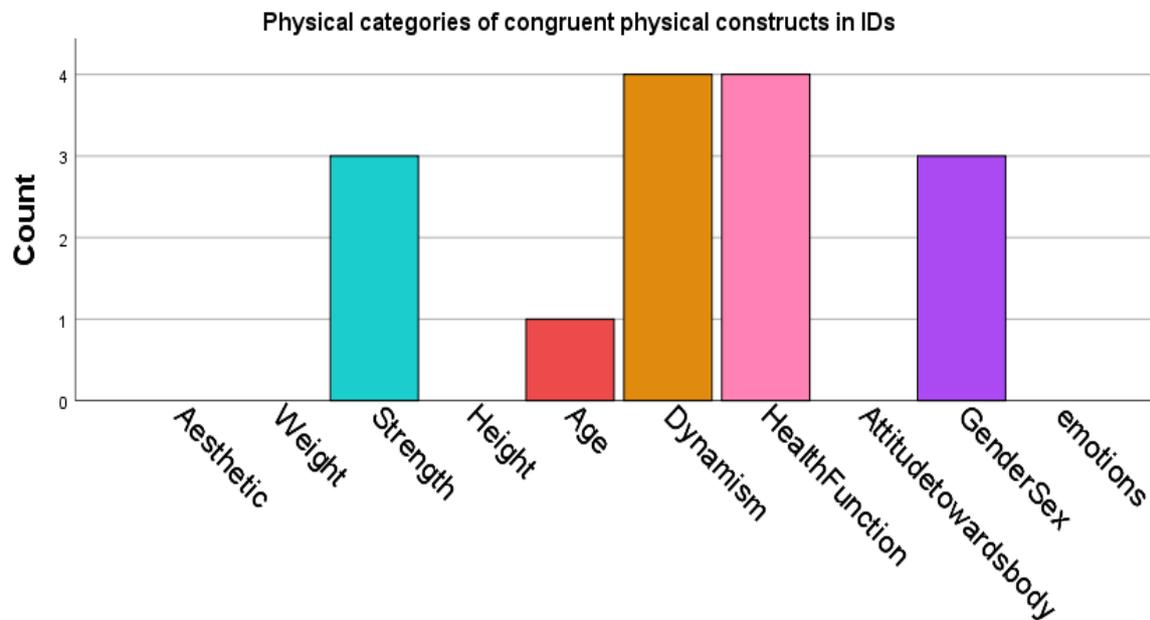


Table 6: Observed versus expected numbers of constructs within different CSPC categorizations for congruent constructs (current self and ideal self/self as ideally seen by others are rated as being at the same pole of a desirable construct).

CSPC Categorization	Congruent ID constructs		All psychological constructs
	Observed	Expected	
Moral	Observed	3	6
	Expected	0.9	8.1
Emotional	Observed	1	38
	Expected	3.8	35.2
Relational	Observed	10	55
	Expected	6.3	58.7
Personal	Observed	1	14
	Expected	1.5	13.5
Operational	Observed	0	19
	Expected	1.9	17.1
Values & Interests	Observed	0	6
	Expected	0.7	6.3

Table 7: observed versus expected numbers of constructs within different physical categorizations for congruent constructs (current self and ideal self/self as ideally seen by others are rated as being at the same end of a desirable construct-pole).

Physical Construct Categorization		Congruent ID constructs	All psychological constructs
Emotions (in body)	Observed	0	7
	Expected	0.6	6.4
Aesthetic	Observed	0	13
	Expected	1.2	11.8
Weight	Observed	0	6
	Expected	0.6	5.4
Strength	Observed	3	24
	Expected	2.5	24.5
Height	Observed	0	5
	Expected	0.5	4.5
Age	Observed	1	4
	Expected	0.5	4.5
Dynamism/Energy	Observed	4	39
	Expected	4	39
Health function	Observed	4	35
	Expected	3.6	35.4
Attitude towards body	Observed	0	12
	Expected	1.1	10.9
Gender/Sex	Observed	3	2
	Expected	0.5	4.5

Symptom constructs were no more likely to be involved in IDs (either congruently or incongruently) than would be expected from distributions of psychological or physical constructs in IDs ($\chi^2(2, 26) = 4.95, p = .084$). Symptom constructs were rated as incongruent (i.e. a desired movement in symptom towards ideals would be dilemmatic) for four of the nine participants with IDs. Of these, two participants construed being symptomatic as desirable (indeed their ideal self as seen by others was *more* symptomatic than how they were currently seen), which presented a dilemma in movement towards desired physical and psychological changes in how they were seen by others (participants 1 and 2) that would entail being seen as *less* symptomatic. Two other participants (3 and 14) appeared to wish to be seen as *immobile* and *inactive* by others. However, for participant 14, being seen this

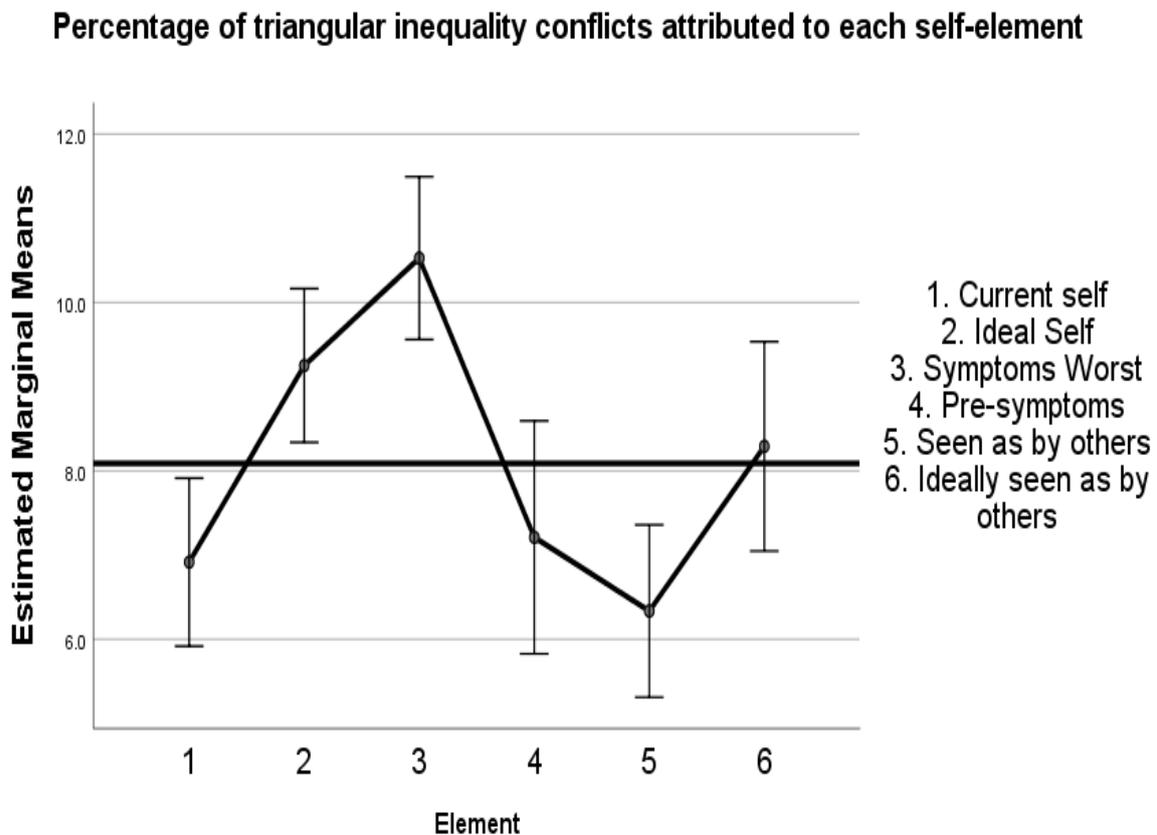
way was implicitly construed as involving undesirable changes to how she is seen by others, such as being seen as *attention-seeking, unpleasant, and whingey*.

3D: Differences in the percentage of triangular inequality conflicts attributed to the current self minus the percentage of triangular inequality conflicts attributed to the self before symptoms.

A one-way repeated-measures ANOVA found significant differences between the percentage conflict accounted for by various self-related elements ($F(5, 95) = 8.54, p < .001$). A paired t-test found that the differences between mean percent conflict accounted for by the current self ($M = 6.92, SD = 2.13$) and the self before symptoms ($M = 7.21, SD = 2.95$) was not significant ($t(19, 2) = .34, p = .74$).

Notably, as can be seen from Figure 8, the mean percent conflict accounted for by the ideal self ($M = 9.25, Sd = 1.95$) was considerably greater than that for the current self and the self as seen by others ($M = 6.34, Sd = 2.19$), but is close to the percent of conflict accounted for by the self when symptoms are worst ($M = 10.53, SE = 2.06$).

Figure 8: Percentage of triangular inequality conflicts attributed to self-related elements.



4. Additional explorations

Hierarchical regression analyses

Table 8: Summary of hierarchical regression analyses

Dependent Variable	Block	Independent Variable	Pearson r (with all IVs)	ΔR^2	ΔF	Sig. ΔF
PHQ-9	1	Distance between current self and self when symptoms are worst	-.44**	.145	4.21	.06
	2	Difference between distance between current self and ideal self, and current self as seen by others, and ideal self as seen by others	.49**	.311	5.28	.03
	3	[ideal-self] – [ideally-seen-as] discrepancy	.43**	.34	4.20	.21
GAD-7	1	Distance between pre symptom self and current self	-.55**	.30	7.61	.01
	2	Distance between current self and self when symptoms are worst	-.36*	.16	5.03	.04
	3	Distance between current self and ideal self	.39	.00	0.06	.81

Significance level: * $p \leq .10$ ** $p \leq .05$

Hierarchical multiple regression analyses were conducted to explore the relative predictive value of indices correlating with the PHQ-9 and the GAD-7 respectively. For the GAD-7, (i) distance between self before symptoms and ideal self (ii) distance between current self and self when symptoms are

worst; and (iii) distance between current self and ideal self were entered into separate blocks (Table 8). This resulted in the distance between the current self and the ideal self no longer adding significant predictive value of GAD-7 scores ($\Delta F=.06$, $p=.81$). A model which included both (ii) and (iii) had the highest predictive value of GAD-7 scores ($F(2, 19)= 7.17$, $p<.01$) (Figure 9). The variables (i) distance between current self and self when symptoms are worst (ii) differences between the distance between the current self and the ideal self, and the current self as seen by other and the self as ideally seen by others; and (iii) ideal self vs self as ideally seen by others discrepancy, were entered into separate blocks for the PHQ-9. With all variables entered, variable (iii) no longer added predictive value ($\Delta F= 4.20$, $p= .21$), whereas variables (i) ($\Delta F= 4.21$, $p= .06$) and (ii) ($\Delta F= 5.28$, $p= .03$) retained significant predictive value of PHQ-9 score. A combined model of (i) and (ii) was most significantly predictive of PHQ-9 score ($F(2,19)= 5.28$, $p=.02$) (Figure 10).

Figure 9: dual-axis chart showing linear relationships between GAD-7 scores and (i) distance between the current self and the self when symptoms are worst; and (ii) distance between the self before symptoms and the ideal self.

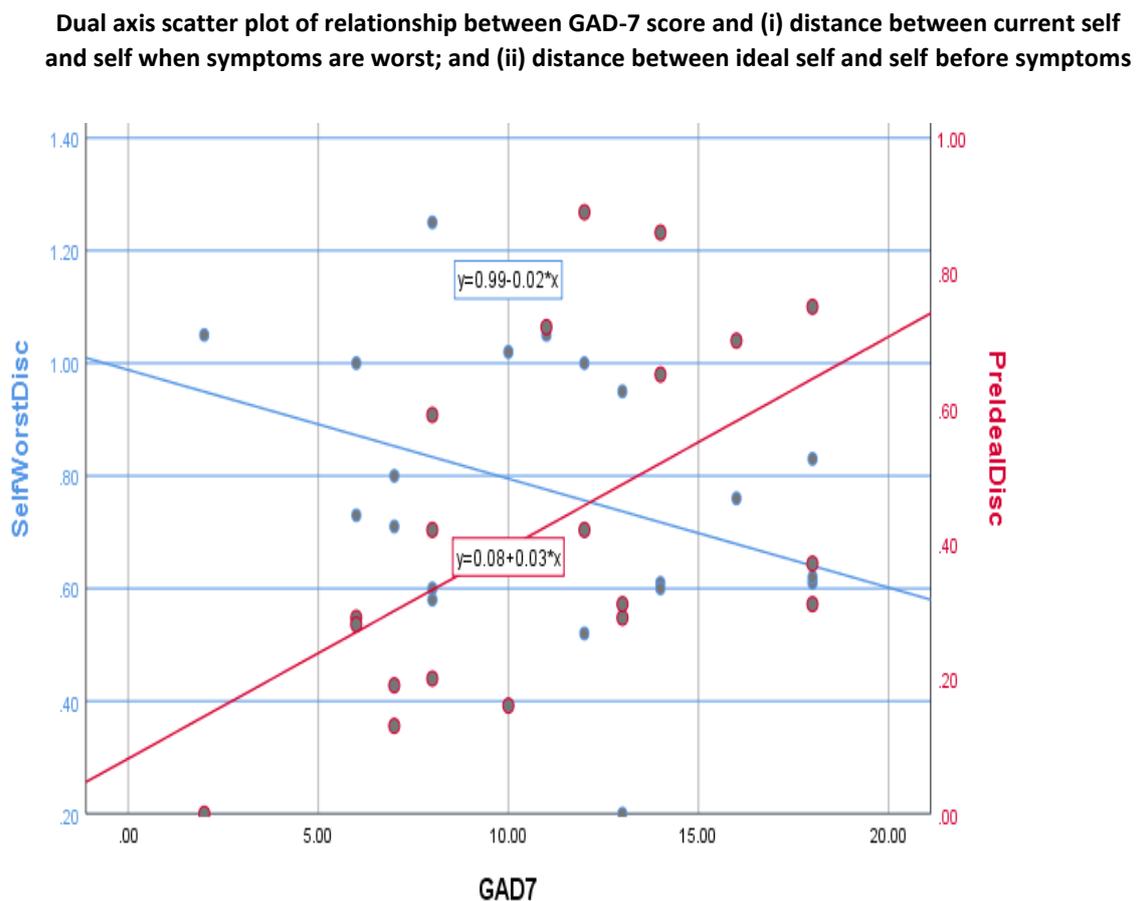
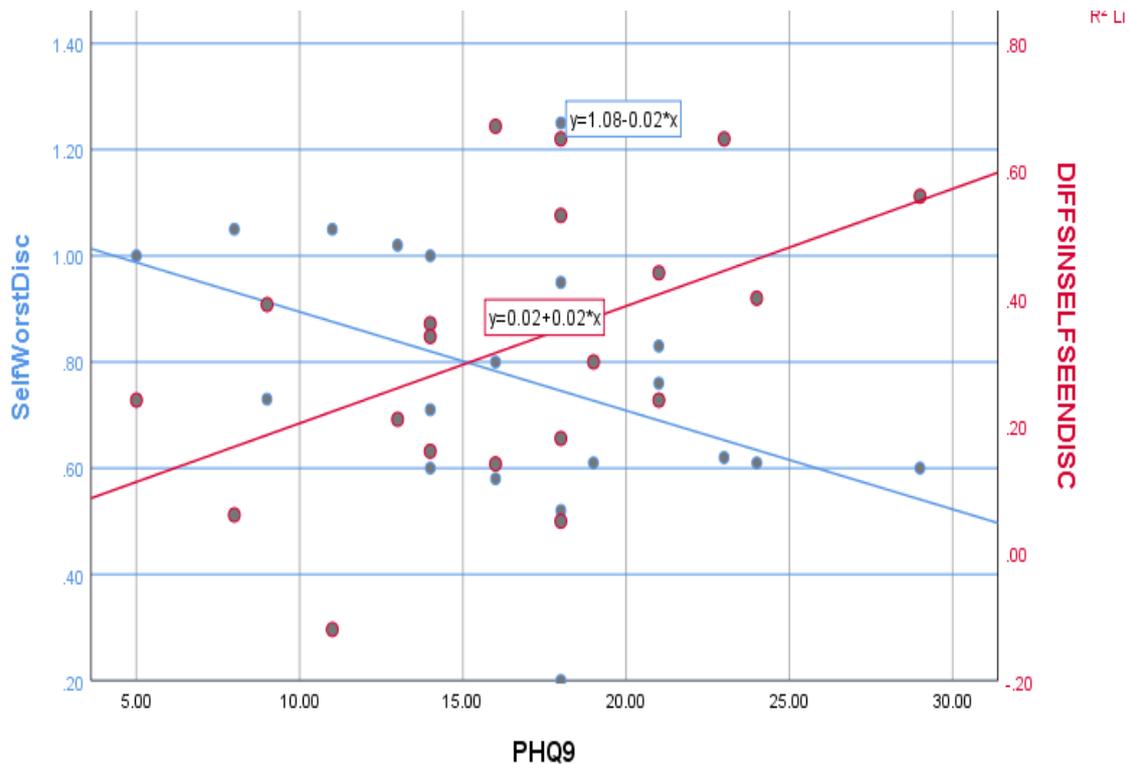


Figure 10: Dual-axis chart displaying linear relationships between PHQ-9 and (i) distance between current self and self when symptoms are worst; and (ii) difference between the distance between the current self and the ideal self, minus the distance between the self as currently seen and the self as ideally seen by others:

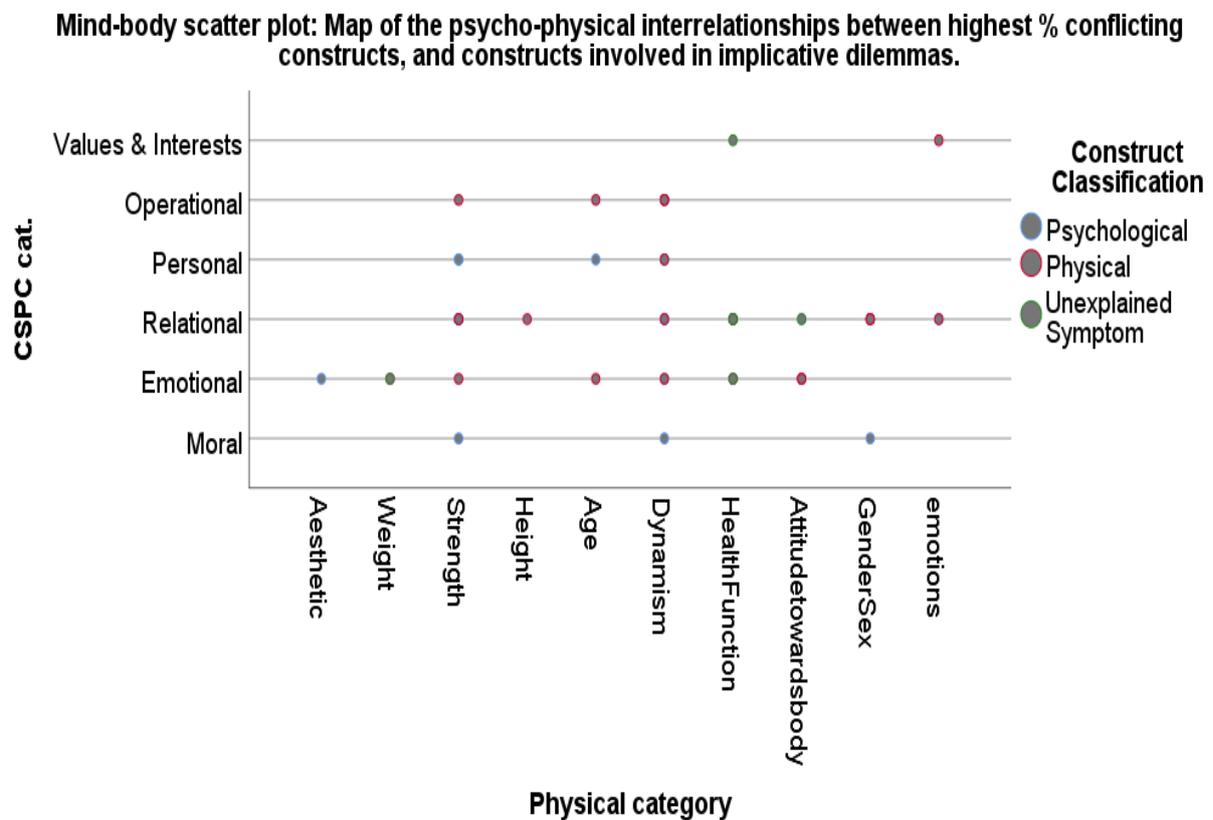
Dual axis scatter plot of relationship between PHQ-9 score and (i) distance between current self and self when symptoms are worst; and (ii) difference between the distance between the current self and ideal self, minus the distance between self as currently seen and self as ideally seen by others



Additional explorations of constructs

Physical constructs which either accounted to the highest level of conflict, or were involved in an ID, were classified psychologically using the CPSC system according to the psychological construct which they correlated most strongly with. The reverse process was used to physically classify any remaining psychological constructs that accounted for the triangular conflict percentages, or were involved in implicative dilemmas (see Figure 11).

Figure 11: Mind-body scatter plot of interrelationships between physical and psychological constructs that were involved in implicative dilemmas, or had the highest level of % conflict in grids.



Physical categories of strength (weak/strong, powerful, fragility) and dynamism (i.e. energy, ability to move) are the broadest physical categories within mind-body space. Strength is interestingly associated with moral and personal psychological characteristics. Constructs relating to the gendered body are mapped closely with 'moral' and 'relational' constructs. The broadest psychological categories represented in the space are 'relational' and 'emotional' constructs, which seem to relate with a number of constructs of the physical body.

As reported above, congruent constructs involved in IDs were more likely to be classified as 'relational' or 'moral' in nature than would be expected based on distributions of all constructs. Another chi-squared test revealed that these constructs were also more likely to correlate most highly with components 2 and 3 ($\chi^2(2, 260) = 11.74, p < .01$) than other constructs (Table 9) indicating that they were not integrated well within the mind-body construct system.

Table 9: Observed versus expected number of ID congruent constructs correlating most highly with the three largest components, relative to other constructs not involved in IDs.

		Component which construct correlated with most highly			Total: 260
Construct-type		Component 1	Component 2	Component 3	Total
Implicative Dilemma (ID) congruent construct	Observed	6	6	3	15
	Expected	10.9	3.3	0.8	
Other	Observed	183	52	10	245
	Expected	178.1	54.7	12.3	

The researcher noticed that the variants of the physical construct ‘strong-weak’ occurred frequently in participants’ grids. As can be seen in Figure 11, ‘strength’ constitutes a broad category for the conflicted and dilemmatic aspects of mind-body identity. When it came to the ratings procedure, many participants asked for clarification of whether the ‘strong-weak’ construct had been one which they had provided as a physical one or a mental one. The researcher reminded them but also asked how their ratings might have changed if the ‘strong-weak’ construct had been psychological. All participants answering this question said that they viewed themselves ‘mentally strong, but physically weak’, so the ratings would have been very different. The researcher noticed that these participants frequently used psychological constructs that reflecting the importance of ‘psychological strength’, such as ‘determined-lazy’, ‘positive-negative’ and ‘resilient-frail’.

The salience of the ‘strong-weak’ construct within the mind-body system prompted further exploration of these constructs. Constructs were classified as ‘strong-weak’ constructs when they were physical constructs relating to strength, and psychological constructs relating to ‘positivity’ or ‘determination’. Constructs relating to being ‘caring for others’, such as ‘caring-selfish’ and ‘empathic-insensitive’ and ‘responsible-irresponsible’ were also identified. Comparisons between construct groups using the Kruskal-Wallis H test revealed significant differences between the median intensity of the ‘sensitivity to others’ constructs (N=25, Mdn= .41), which was lower than intensity of ‘strong-weak’ (N=36, Mdn= .71) and all other constructs (N=199, Mdn= .68) ($\chi^2(2)= 33.09, p<.001$). A chi-squared test confirmed that the ‘sensitive to others’ constructs were more likely than expected to correlate most highly with components 2 and 3 in PCA ($\chi^2(4, 260)= 38.70, p<.001$) (Table 10), which is unsurprising given 15/25 of these constructs were involved in IDs. No between-groups differences were found for the percentage of triangular-inequality conflicts ($\chi^2(2)= 3.86, p=.15$).

Table 10: Observed versus expected numbers of strong-weak and sensitive-to-others constructs correlating most highly with the three largest components, relative to other constructs.

Construct-type		Component which construct correlated with most highly			Total: 260
		Component 1	Component 2	Component 3	Total
Strong-weak	Observed	32	4	0	
	Expected	26.2	8	1.8	36
Sensitive to others	Observed	6	17	2	
	Expected	18.2	5.6	1.3	25
Other	Observed	151	37	11	
	Expected	144.7	44.4	10	199

Sub-groupings within the sample

Although no overall difference in conflict scores for construct types was found, it appeared that for some participants, the strong-weak constructs were particularly conflicted or complex (they accounted for the highest percentage of triangular inequality conflicts for three participants, and were involved in an ID for another) (Figure 12). There appeared to be an approximate pattern in the characteristics of strong-weak and sensitive-to-others constructs that invited sub-grouping of participants (Figure 13). A table of self-related element characterizations for the different subgroups (according to the single construct correlating most highly with each element) is provided in Appendix K, providing further qualitative evidence for these construing patterns. The subgroups were:

1. **'Sensitive to others'** (n=6): larger proportion of poorly-integrated 'sensitive to others' constructs over 'strong-weak', high percentage conflict for 'sensitive to others' constructs.
2. **'Strong identity'** (n=6): larger proportion of 'strong-weak' constructs, which account for increased percentage of conflict in grids. 'Sensitive to others' constructs integrated and low in percent conflict accounted for
3. **'Mixed'/intermediate group**: both 'strong-weak' and poorly-integrated 'sensitive to others' constructs present and with some degree of percentage of triangular inequality conflicts attributed to them.

Figure 12: scatter plots with interpolation lines, showing intensity and % triangular inequality conflict attributed to strong-weak and sensitivity constructs for each subgroup.

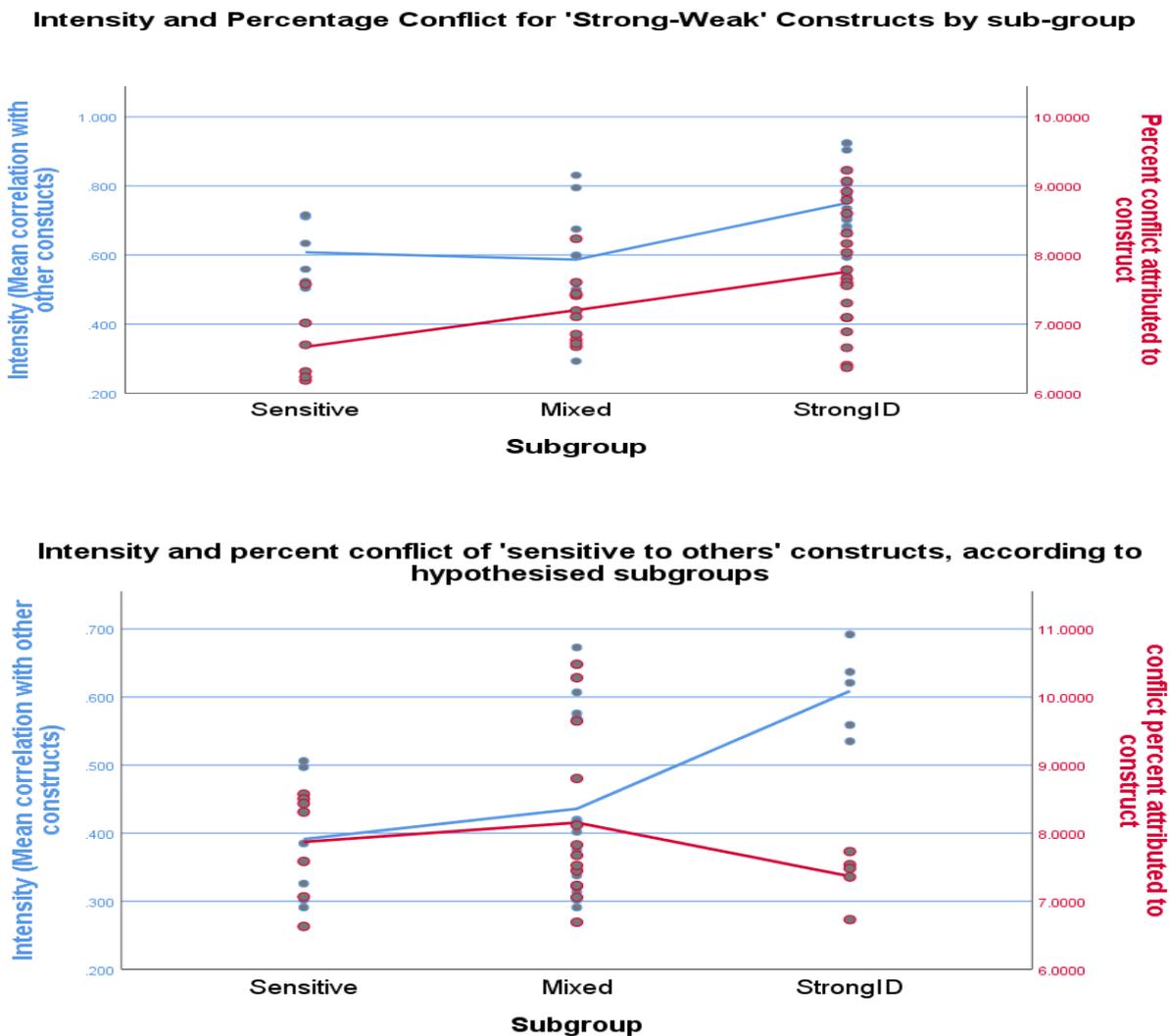
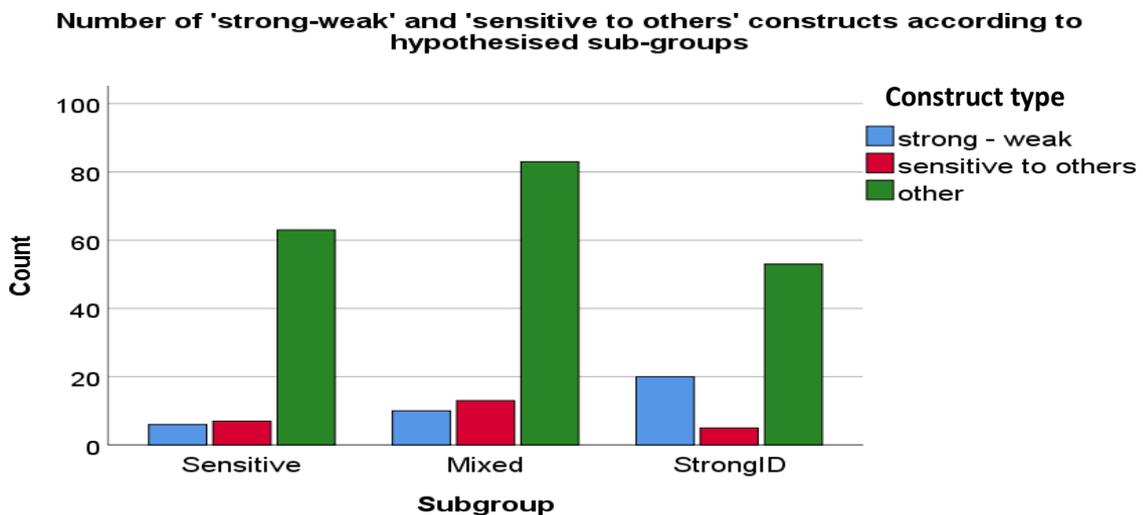
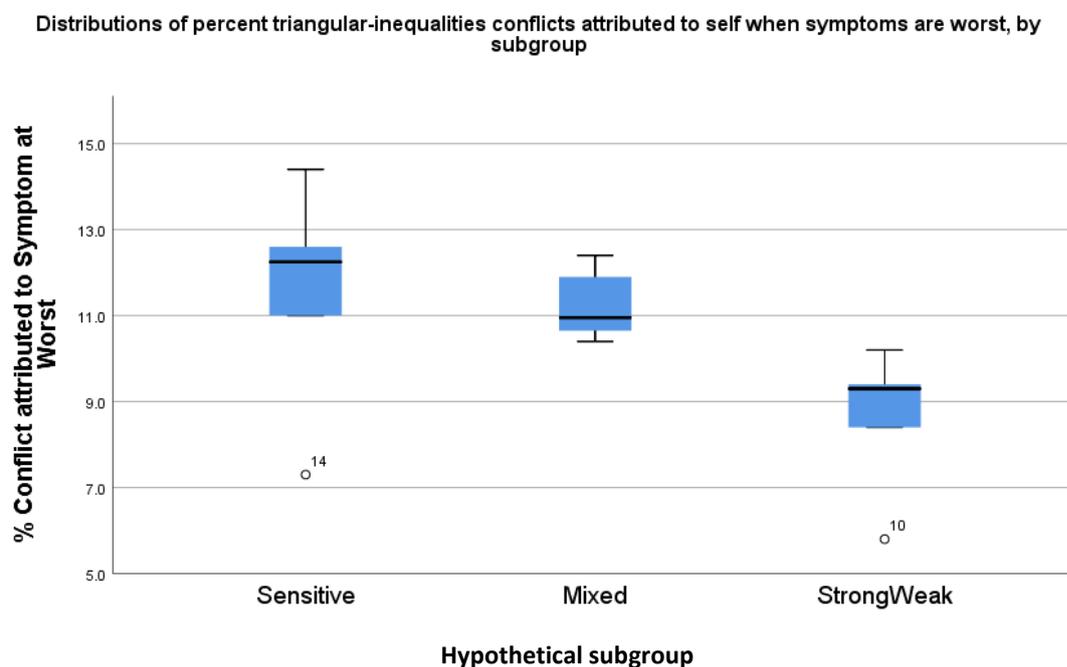


Figure 13: number of strong-weak, sensitivity and other constructs for each subgroup



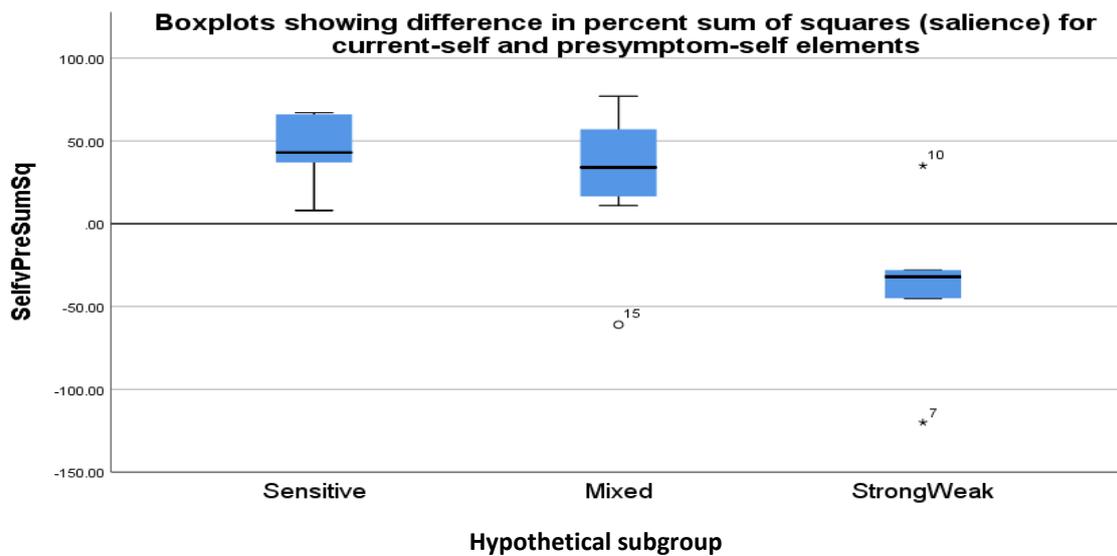
A one-way ANOVA found a significant between-subjects effect of subgroup on the percentage of conflict attributed to the self when symptoms are worst ($F(2,19)= 6.91, p<.01$)(Figure 14), and borderline-significant between-subjects effect on percentage conflict attributed to the self before symptoms ($F(2,19)=2.94, p=.08$). A borderline-significant between subjects effect was found for difference between percent conflict attributed to the current self, minus the conflict attributed to the self before symptoms ($F(2, 19)= 3.15, p=.069$).

Figure 14: Distributions of triangular-inequality conflicts attributed to self when symptoms are worst, by subgroup



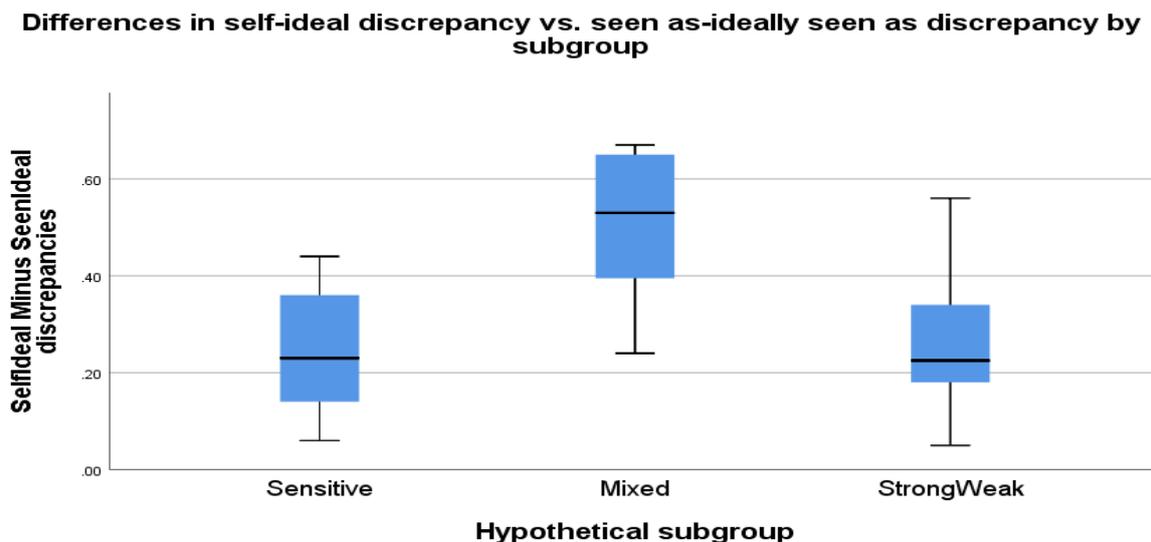
Explorations of the 'percent sum squares', a measure of the amount of variance in grids accounted for by each element in the grid (i.e. the salience or amount of meaning that element has in the grid), indicated a significant between-subgroups effect in the difference in percent sum squares for the current self, minus the percent sum squares for the self before symptoms (Kruskal-Wallis, $\chi^2(2)=6.71, p=.035$). The 'strong-weak' subgroup had lower percent sum squares of the current self relative to the self before symptoms (Mdn diff = -32), and the 'sensitive' (Mdn diff = +43) and 'mixed' (Mdn diff = 34) subgroups showed gains in percent sum squares for the self as the result of symptoms.

Figure 15: Boxplot of distributions of percent sum of squares for current self minus pre symptom self



A one-way ANOVA also found a significant between-subjects effect of subgroup on the difference between distance between the self and the ideal self, and the distance between the self as seen by others and the self as ideally seen by others ($F(2,18) = 5.32, p = .02$). The difference was greater for the 'mixed' subgroup ($M = .50, SD = .17$) than for the 'strong-weak' ($M = .26, SD = .17$) and 'sensitive' ($M = .24, SD = 1.50$) groups (see Figure 16).

Figure 16: Box plot of differences between distance between current self and ideal self, and distance between self as seen by others and self as ideally seen by others for each subgroup.



A Jonckheere-Terpstra test for ordered alternatives indicated a significant trend of increased median number of IDs associated with movement from the self as currently seen by others towards the self as ideally seen as by others (sensitive-to-others > mixed > strong-weak) ($T_{JT} = 27.5, z = -3.02, p < .01$). A

test of the same ordered alternatives was not significant for IDs defined by movement from the current self towards the ideal self ($T_{JT} = 48$, $z = -1.65$, $p < .01$). It was expected that the distance between the ideal self and the self as ideally seen would increase in the order strong-weak < mixed < sensitive to others. However, although this trend was found a Jonckheere-Terpstra test for ordered alternatives reported this trend was only borderline-significant ($T_{JT} = 41$, $z = -1.73$, $p = .08$).

Interactive factors between subgroups and variables

Although the size of each subgroup was too small to conduct meaningful correlational analyses, interactions between the grid variables on which the subgroups significantly differed, PHQ-9, GAD-7 and MYMOP-2 scores were explored on scatter-plots. The following notable features were observed that deviated from previously-observed overall effects of variables:

- Increased triangular inequality conflicts associated with the self when symptoms are worst had a stronger positive correlation with increased MYMOP profile scores for the strong-weak group in particular. Increased conflict for this element seemed to correlate better with increased GAD-7 anxiety scores for the sensitive-to-others and mixed groups than for the strong-weak group (Appendix L).
- Increased distance between current-self and self when symptoms are worst was correlated with increased GAD-7 anxiety scores for the sensitive group, but decreased GAD-7 anxiety scores for the mixed group and the strong-weak groups (Appendix M).
- With increased difference between the distance between the current self and the ideal self, and distances between the self as currently seen and the self as ideally seen by others, GAD-7 scores increase for the sensitive-to-other and mixed groups in particular (Appendix N). For the strong-weak group, increased differences are found with decreasing MYMOP symptom scores, whereas the opposite trend is found for the sensitive-to-others group.
- For the strong-weak and mixed subgroups, increased symptoms are associated with reduction in percent sum squares from the self before symptoms to the current self, which is positively associated with PHQ-9 scores (Appendix Oi). Conversely, gains in percent sum squares from the self before symptoms to the current self are associated with decreased PHQ-9 and GAD-7 scores for the sensitive-to-others and mixed groups (Appendix Oii).
- The strong-weak group had a slightly larger Percentage of Variance Accounted for by the First Factor (PVAFF) ($M = 62.11$, $SD = 16.17$) than the sensitive-to-others group ($M = 54.10$, $SD = 7.02$) and the mixed group ($M = 53.36$, $SD = 7.27$), but the overall between-subjects effect was not significant ($F(2,19) = 1.33$, $p = .29$).

Table 11: Summary of key findings

Variable	Whole-group findings	Subgroup differences
Constructs	<p>Symptom constructs: Tended to be integrated with main construct system. Tended to be more correlated with physical constructs.</p> <p>Constructs were found representing 'sensitivity to others' (being empathic/not-selfish/responsible), correlating most highly with less integrated construct subsystems.</p> <p>Constructs were identified representing 'strong-weak' poles, with psychological (e.g. 'positive', 'determined') and physical (e.g. 'weak', 'frail') variants – correlating most highly with the primary construct component</p>	<p>'Strong-weak' subgroup had an increased salience and level of conflict/complexity for 'strong-weak' type constructs.</p> <p>'Sensitive-to-others' subgroup had less well integrated constructs of a relational and moral nature ('sensitive').</p> <p>'Mixed' subgroup had both strong-weak and 'sensitive to other' constructs, with equal amounts of construct conflict/complexity.</p>
Implicative Dilemmas (IDs)	<p>IDs were associated with movement from current self towards ideal self and also towards self as ideally seen by others.</p> <p>Content analysis of congruent constructs in dilemmas showed a high proportion of 'relational' and 'moral' constructs. A congruent physical construct was being 'female'. These constructs were likely to be loaded on more peripheral construct subsystems than other constructs.</p>	<p>For IDs relating to movement towards the ideally-seen-self, the trend of number of IDs across subgroups was Sensitive-to-others>mixed>strong-weak</p>
Element properties	<p>The element <i>self when symptoms are worst</i> seemed to have particular salience in grids. Percentage of triangular-inequality conflicts was higher for this element than for other self-related elements.</p>	<p>Percentage conflict associated with Self when symptoms are worst increased with MYMOP severity for the strong-weak group. Increased GAD-7 scores were associated with increased percent conflict attributed to self when symptoms are worst for the sensitive-to-other and mixed groups.</p>

	Percent sum squares (salience, or amount of variance in grid ratings) of current-self relative to pre-symptom self: no overall main effects.	Reduction in percent sum squares for the current self relative to the self before symptoms more likely for the strong-weak group, associated with increased symptom-scores and depression scores. Gains in sum squares from self before symptoms to current self more likely for sensitive-to-other and mixed groups - related to decreased depression and anxiety scores.
Distances between elements	The distance between the current-self and the self when symptoms are worst was a major predictor of depression and anxiety scores, correlating negatively with both.	Increased distance between current self and self when symptoms are worst associated with increased GAD-7 anxiety scores for the sensitive group, but with decreased GAD-7 anxiety scores for the mixed group and the strong-weak groups.
	The distance between the self before symptoms and the ideal self was positively correlated with depression symptoms.	
Discrepancies between self and aspects of self as seen by others	Difference between the distance between the current self and the ideal self, and the distance between the self as currently seen by others and the self ideally seen by others, correlated positively with depression.	Difference between the two decreases with higher symptom severity for the strong-weak group, but increases with symptom scores for the sensitive-to-others group, with increased anxiety for the latter group.

6. Discussion

Integration of symptoms and the symptomatic self in mind-body construct systems

In the mind-body grid, the construct relating to the symptom was well integrated and possibly superordinate (more so than physical and psychological constructs). It also correlated significantly more with physical constructs than psychological constructs. Integration of the symptom construct correlated negatively with anxiety, which is expected because increased integration means that

more predictions can be made about mind-body identity for self and others using the symptom-construct (Metcalf, 1997). The author's hypothesized U-shaped relationship between symptom intensity and anxiety was found to be significant. If symptoms are seen to relate to every aspect of mind-body identity, then that person will see a great deal of identity as being enmeshed (Morley & Pincus, 2001; Morley, 2010) with that symptom. Overall, a linear relationship proved to be better at predicting anxiety over the curvilinear model.

This study also looked at the integration of symptoms within mind-body identity by comparing how participants construed themselves generally to how they construed themselves when their symptoms were worst. The self when symptoms are worst was a particularly important element in grids, and often isolated from other elements, introducing more complexity and challenges to coherence of the construct system than any other self-related elements. The discrepancy between the self generally, and the self when symptoms are at their worst was a key factor in predicting levels of psychological distress. For the sample as a whole, anxiety and depression symptoms decreased with increasing levels of perceived dissimilarity between the self in general and the self when symptoms are worst. The fact that this discrepancy did not significantly correlate with symptom-severity scores suggests that it is the different ways in which self and self when symptoms are worst are constructed that alleviates anxiety and depression, rather than absolute difference made by symptoms. If a number of undesirable characteristics are enmeshed with symptoms, construing these negative differences as residing more in the self when symptoms are worst than the self in general may serve to protect from construing the self as having globally changed in undesirable ways (Hellstroem, 2001). Extreme dissociation could be envisaged as being distressing also if the self with worst symptoms is considered to be 'a different person'. However, this form of dissociation between self and self when symptoms are worst alleviated anxiety in a linear fashion.

Discrepancies from ideals

Many participants saw themselves as being dissimilar from the person who they would like to be, which was positively correlated with anxiety rather than depression (as self-discrepancy theory would predict, Higgins, 1987). Although participants construed themselves as further from their ideal self as the result of MUS, for many participants there was still a discrepancy between the self and the ideal self before they began to experience MUS. This latter discrepancy positively correlated with anxiety with stronger predictive effect than the discrepancy between the current self and the ideal self. This finding would seem to support findings that people with MUS may have high and difficult-to-achieve standards for themselves before experiencing symptoms (Ayats, Martin & Soler, 2006; Compan et al, 2011; Hallberg & Carlsson, 2011), rather than increased distance between self and ideals due to MUS being a primary factor relating to psychological distress.

As expected, the discrepancy between the current self and the ideal self was greater than the discrepancy between the self as seen by others and the self as ideally seen by others. This might be taken as evidence of ‘subversion’ (Miles et al., 2005) and processes whereby people try to maintain their public identity by avoiding social situations when symptomatic, or by ‘pushing through symptoms’ to maintain a public identity (Clarke & James, 2003; Hellstroem, 2001; Kindermans et al., 2011). Increased difference between these perceived discrepancies was associated with increased depression symptoms, even after factoring in additional predictors of depression. The fact that the difference in discrepancies had greater explanatory power for depression symptoms than the discrepancy between the respective ideals (i.e. ideal self and self as ideally seen by others) suggests that increased depression scores may not be related specifically to experiencing guilt about having different and possibly conflicting ideals. Rather, it could reflect more of a sense of hopelessness about achieving both sets of ideals (whether overlapping or distinct) whilst also experiencing symptoms.

Implicative dilemmas

The above interpretation of emotional (and physical) burnout from striving to achieve ideals for both the self and the self as seen by others relates to the finding that the congruent constructs in Implicative Dilemmas were more likely to be classified as being ‘moral’ or ‘relational’ using the Classification System for Personal Constructs (Feixas et al., 2002). This repeats findings by Compan et al. (2010), Benasayag et al. (2004) and Drysdale (1989), that chronic symptoms can be associated with desirable relational qualities involving ‘sensitivity to others’ (Drysdale, 1989) and moral characteristics such as being responsible and altruistic (Compan et al., 2010). Movement towards having desired physical traits (including symptom reduction) tended to be associated with undesirable changes to a current attribute of a moral or relational nature. Further exploration revealed that these constructs were more likely to correlate most highly with peripheral components than with the largest construct subsystem, indicating that these aspects of identity may be poorly elaborated and understood in relation to wider body-mind identity. Constructs relating to being *female* had a positive association with some of the moral and relational aspects of identity, but also with less desirable physical traits. This provides some, albeit limited, evidence for Lilleas & Von Der Fehr’s (2011) suggestion that the female body may implicitly be associated with constructs relating to being available for others, based on research with women with fibromyalgia. The fact that the congruent construct correlated most highly with a different component to the symptom construct for all participants with dilemmas further suggests that these aspects of identity may not be well elaborated and integrated with symptoms (hence they are in conflict) (Fogel, 2013; Nakazawa, 2013). The subgroups that experienced dilemmas also tended to increased elaboration of

self as a result of experiencing MUS, suggesting that they are elaborating parts of their identity *through* their physical, symptomatic body (these participants typically characterized themselves most highly with physical health or symptom-based constructs) (Obissier, 2006; Sommer Anderson et al., 2013; Turk & Gatchel, 2013, p.96). This relates closely to the role of ‘embodied’ construing and the emergence of metaphors for construing the self through the physical body (Centomo & Del Rizzo, 2016). Indeed, for some of the implicative dilemmas, particularly those involving relational constructs, the author has interpreted some metaphorical mind-body links in the dilemmas presented (Appendix J).

‘Strong’ and ‘sensitive’ constructs

As mentioned above, the exploration of IDs revealed positive constructions of the current self as ‘sensitive to others’ and ‘responsible’. However, the researcher also noted that some participants used several highly overlapping constructs associated with physical and mental qualities of strength or weakness (e.g. *muscular-weak, powerful-passive, optimistic-pessimistic, strong-weak, fragile-stable*). When the associations between the most conflictual physical and psychological constructs were mapped out along with constructs involved in implicative dilemmas, the physical category of ‘strength’ wove together a broad number of psychological and physical aspects of identity, confirming the importance of this aspect of identity. These constructs resembled those related to being ‘copers’ found with participants experiencing chronic pain (Large & Strong, 1996), or narratives of having ‘emotional strength’ and ‘positive attitudes’ (Werner et al., 2004). These latter constructs were likely to correlate most highly with the principal construct subsystem for construing self and others, but were also the constructs accounting the highest percentage of triangular conflicts (i.e. they add complexity and inconsistency which may threaten to invalidate the coherence of the overall construct system) for some participants. Exploring the properties and patterns in construing of these ‘strength-based’ constructs compared to those relating to ‘sensitivity to others’ suggested a possible subgrouping of the participants.

Subgroup characterisations

The subgroups were initially classified by the relative properties of constructs relating to strength and constructs relating to ‘sensitivity to others’. Although presented here as distinct groups, they might be considered as being on more of a continuum between self-constructions based on ‘being strong’ on one pole, and self-constructions relating to ‘being there for others’ on the other pole.

1. Strength based identity

These participants had relatively higher amounts of constructs relating to physical and mental strength or weakness in their grids, and fewer constructs relating to being sensitive to others. These

strength-based constructs correlated most highly with the largest principal component, having a high degree of correlations with other constructs, suggesting that they are superordinate for these participants. They also had the highest level of percentage conflict, suggesting that these constructs related to strength are complex and contain inconsistencies.

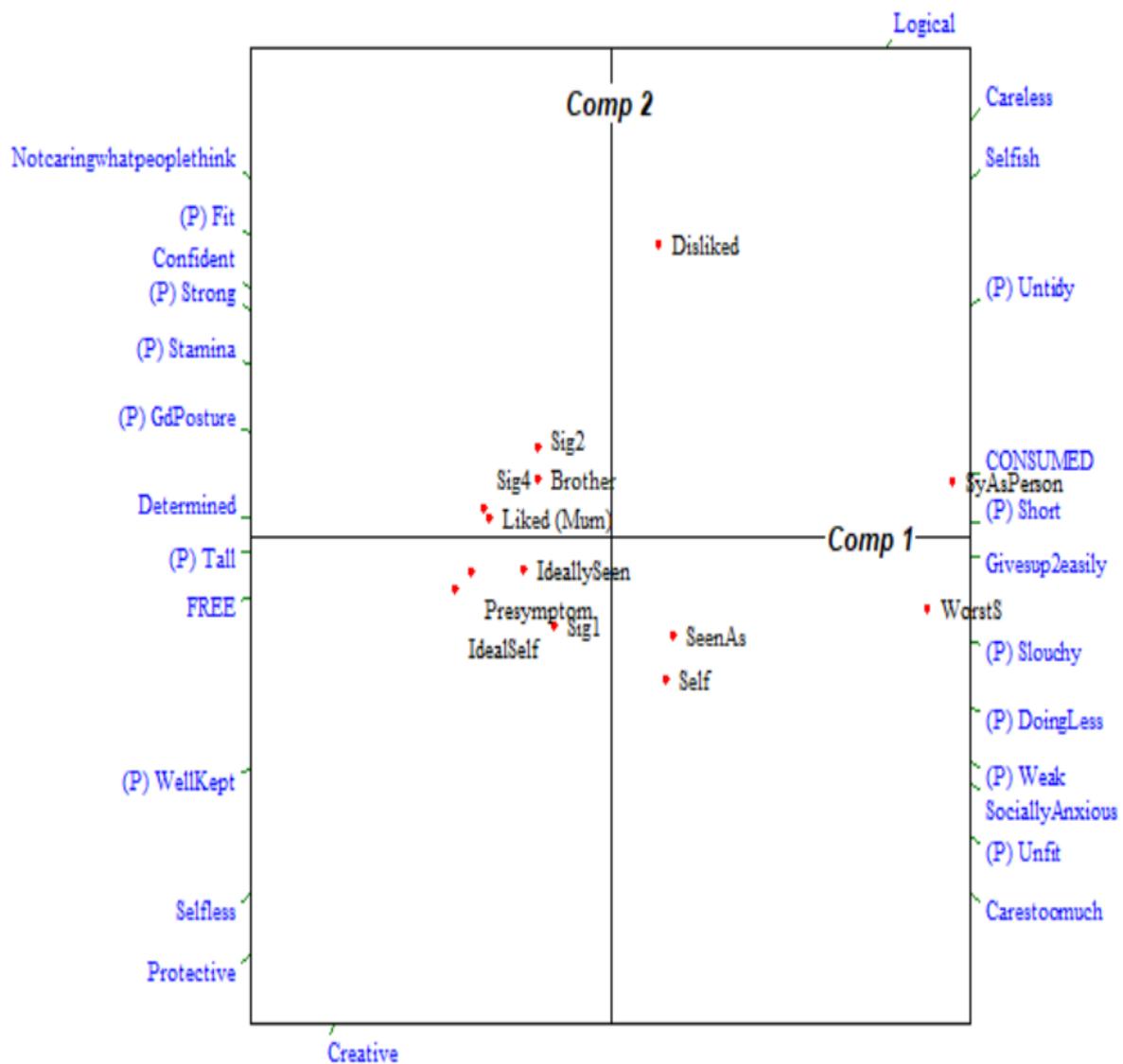
The current-self was characterized by such terms as 'weak', 'incapacitated' and 'gives up too easily'. This contrasts with the pre-symptom self, which is most characterized with constructs such as 'resilient' 'positive' and 'strong'. The ideal-self is characterized similarly to the pre-symptom self. The amount of conflict associated with the self when symptoms are worst was associated with depression more than anxiety. The valued activities that are affected for this group were typically exercising and working. These goals tended to reflect a possible higher level of functioning for this group. However, this does not mean that this subgroup were any less distressed by their MUS.

Most importantly perhaps is the reduction in the elaboration of the current self in these participants' construct systems relative to their pre-symptom selves. Increased loss of meaning of the current self, relative to the pre-symptom self is associated with increased depression scores. It seems that these participants may be struggling to find meaning for a symptomatic self that is no longer construed as 'strong', but is not completely 'weak' either. The current self also has fewer percentage conflicts than the pre-symptom self, which in this case might be interpreted as a loss of complexity in how the self is construed. As symptom severity increases, the difference between current self and ideal self, and self as seen by others and self as ideally seen by others decreases, perhaps reflecting a process whereby both sets of ideals are canalized in meaning. Though not significantly different, the amount of variance accounted for by the largest component is slightly larger for this sample, perhaps suggesting constriction to a smaller and more predictable set of identity constructs. Construing from a simpler, monolithic construct system could be self-protective: whilst the self is construed less meaningfully than the pre-symptom self, the constriction which predominantly centers on 'strength' may prevent further changes and losses in how the self is viewed. The prototypical form of this construing pattern might be construing the current self as 'mentally strong' but let down by a physically weak body.

The profile resembles somewhat those of cancer survivors, who tend to construe their bodies using cognitively narrow, monolithic set of constructs relating to the functional and mechanical aspects of the body, a mechanism which may help during the emotional stress of treatment (Weber et al., 2005; Turpin et al., 2009). In a similar way to those 'fighting off' an invasive terminal illness, these participants may construe themselves as being in a battle of wills against MUS. Aetiologically, one wonders if triggering events may have been those which threatened to invalidate the self-

construction of ‘having strength’ (as a whole-person, mind-and-body level), such as serious illnesses, or physical injuries or traumas that have less of a relational component. The symptom may act as a ‘somatic memory’ (Brown, 2006, 2009; Levine, 2010; Van Der Kolk, 2014) associated with such trauma, overshadowing the person with the potential possibility of being at the *weak* pole of the polarized *strong-weak* construct (Sermpezis, 2007).

Illustrative case example 1: Strength-based identity



This person experienced ‘consuming pain’ all over her body, the contrast pole of which was ‘free’. The valued activity that pain most interfered with was painting. This person was involved in full-time study at the time of the interview. As an indication of its superordinacy in her construct system, the first construct elicited in the interview was *strong---weak*, but another important construct appeared to be *determined—gives up too easily*. The *gives up too easily* pole most characterized both the

symptom as a person and the self when symptoms are worst. Notably, all people are close to the center of the plot of elements in construct space, indicating the relative salience of the disliked person but also the elaboration and isolation of the self when symptoms are worst. The current-self, though less elaborated than the self when symptoms are worst, is still isolated and seen in undesirable terms relative to many of the non-self elements, which occupy a quadrant opposite the current self. Notably the self as ideally seen by others is closer to these others (including the liked person) than the ideal self. The overall impression is that she wants to be seen as strong and may feel that by not being seen to be strong, she is 'letting the side down'. Notably, there are moral and relational constructs of being 'selfless' and 'protecting', which are dissociated from the primary construct component with *strong-weak* at its core, though these do not form implicative dilemmas. An aspect of strength which is particularly interesting is the construct *not caring what other people think* versus *cares too much what other people think*. It would seem that caring too much what other people think is associated with *weakness*, and the self when symptoms are worst is the only element to score the highest rating on the *caring too much what other people think* pole. The liked person, the participant's mother, is associated with qualities of confidence, which seems to also relate with *not caring what other people think*. 'Good posture' invites considerations about how she might have been encouraged to 'stand strong' and not show weakness. The fact that the self before symptoms is construed as identical to the ideal self suggests that she may be enmeshed with her symptom with regards to 'weakness'. The disliked person provides a potentially threatening and invalidating element as they are construed as confident and not caring what other people think, just like mum, but with a *logical, careless* and *selfish* twist. One wonders if the participant was at the receiving end of this person's less desirable form of 'not caring about others' in such a way that threatened the importance and value of being strong – indeed, the *strong-weak* construct for the participant accounted for the highest percentage of triangular inequality conflicts. Physically, being 'well-kept' characterises the ideal physical self, versus *untidy*. Given its position in the grid, this feels like a potential exception to the strong-weak ways of seeing themselves, tied in with a desire to be creative. Elaborating this aspect of their physical self further may demote the superordinate nature of the strong-weak construct system that isolates this participant from others and from their symptomatic self. The subgroup bears resemblance to the proposed 'compulsive self-reliance' A5-6 attachment organizations proposed by Kozłowska (2007) and Kozłowska, Foley & Crittenden (2006), stemming from the phylogenetic 'freeze'-response behavior to threatening situations. In a context where caregivers are experiencing their own unresolved loss or trauma, and may respond in a dismissive or disapproving way to the needs of the child (Adshead & Bluglass, 2001, 2005), the child learns to inhibit internal signals of need. Inhibiting needs may involve a preferential construing of

the self by the individual and by those around them as being 'strong', 'independent' and 'coping'. Construing of situations tends to be based on higher order processing of temporally organized information rather than affective information relating to the 'quality' of information available from feeling states (Crittenden, 1995). When vulnerability of both an emotional or physical nature breaks through inhibition of negative affect, it may do so in a manner which is very sudden involving sudden loss of physical function (Crittenden, 2003).

Sensitive to others

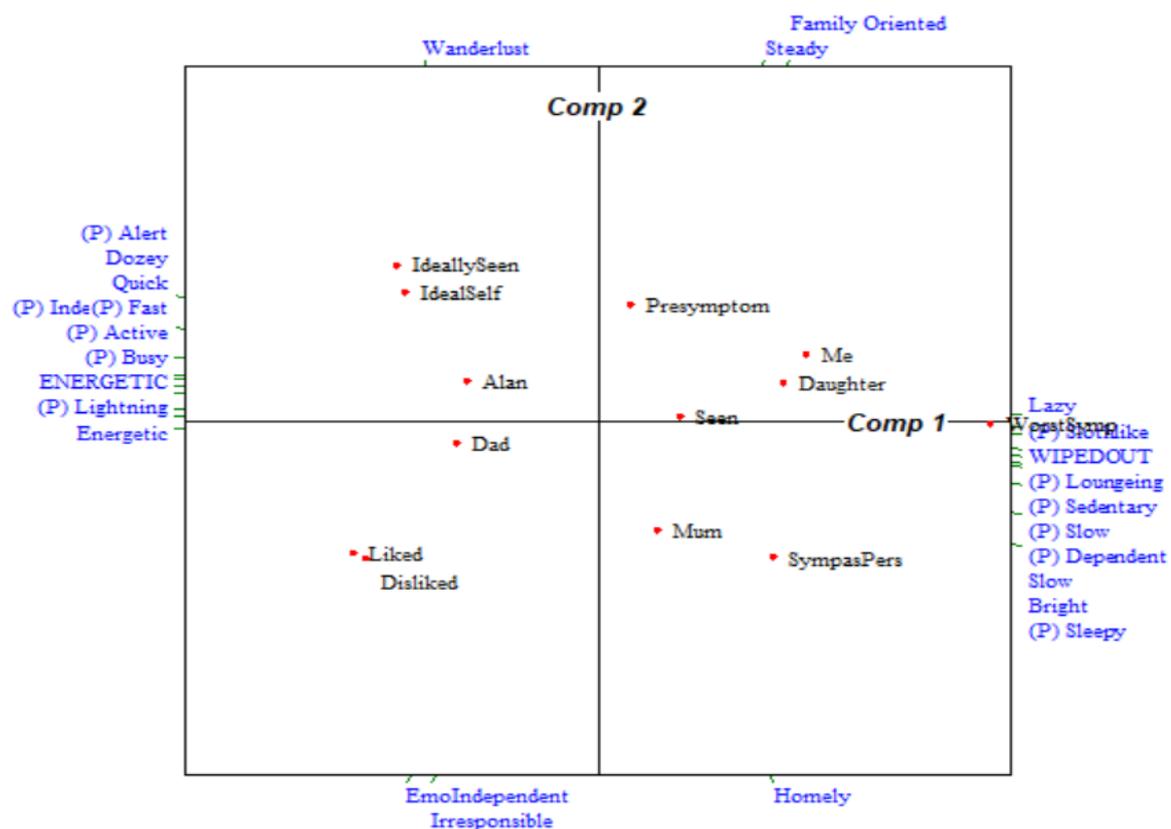
This subgroup had relatively more constructs related to being 'sensitive to others' in their grids. While the number of constructs relating to strength was not lower than the aforementioned subgroup, strength-based constructs were not superordinate for this subgroup. In contrast to the 'strong' group, this group had a more elaborated self with symptoms relative to the self before symptoms. The increase in elaboration was associated with reduced anxiety and depression for this subgroup. The current self was most characterized through symptoms and undesirable physical attributes such as 'stiffness', 'in pain' and 'overweight'. The ways in which these participants thought others perceived them was similar. In contrast, the self before the onset of MUS was characterized with words such as 'reliable', 'carefree (irresponsible)' and 'responsible'. The desired activities for this group interfered with by symptoms include socializing, walking and playing with grandchildren.

This subgroup was most likely to have implicative dilemmas associated with movement towards the self as ideally seen by others. The content of these dilemmas often involved congruent relational constructs, and some of the physical constructs involved in dilemmas appeared to elaborate relational aspects of self (e.g. being seen as '*heavy-burdened*', '*stiff-unreliable*' and '*weak-empathic*'). The fact that such constructs were part of less elaborated and more peripheral subsystems suggests that these aspects of identity are not well understood in terms of the main construct system for mind-body identity (Metcalf, 1997). Therefore, the relationship between the MUS and such positive aspects of identity is likely to be something that these participants are not fully aware of (Compan et al., 2011; Koch et al., 2013; Leitner, 1999; Lilleas & Von Der Fehr, 2011; Nakazawa, 2013). The automaticity of caregiving behavior may suggest that it developed in an attachment context (Grillner, 2003; Koslowska, Foley & Crittenden, 2006; Ledoux, 1998). Kowlowska (2007) and Kowlowska, Foley & Crittenden (2006) describe a number of attachment organizations that are based on 'appeasement' behaviours that are a means to signal helplessness and vulnerability in a way which will increase consistency of caregiving behavior. These 'type c' attachment strategies are theorized to be organized around feeling states which are mixed and incongruent in the face of unpredictable caregiving behavior, yet serve to provide information about

the quality of contextual stimuli (e.g. hot/cold, loud/quiet, calm/chaotic) (Crittenden, 1995). Exaggerated nonverbal signals may increase the predictability and acceptability of caregiving behavior, yet in a manner which does not provide opportunity contextualization and cognitive elaboration of what the needs are (Crittenden, 2006). This may relate to the way in which the physical construing of the self appears to provide a concrete, embodied metaphor that elaborates a more complex interpersonal situation in the grids explored in the current study.

Unsurprisingly, this group experienced increased anxiety and depression symptoms when the distance between their ideal self and their self as ideally seen by others was increased, which is perhaps suggestive of conflict between the ideals these participants have for themselves in contrast with the desired interpersonal identities. Increased differences in perceived discrepancies between the self and the ideal self on the one hand, and the self as seen by others and the self as ideally seen by others on the other hand, also appear to increase symptoms of anxiety and depression for these participants.

Illustrative case example 2: 'a body for others'



This participant was aged in her late forties and experienced tiredness for nine years, which she described as being *wiped out*. The contrast pole was *energetic* for this symptom. She explained that she was currently taking parental responsibility for their young granddaughter, as her own daughter

was 'too irresponsible' to look after them. She mentioned that her own mother, who is the person closest to the symptom-as-person element in the grid above, was an alcoholic and was also an 'irresponsible' and 'neglecting' mother. In this participant's grid, the physical constructs are very tightly organized into a single component in which they all correlate highly with the symptom. Orthogonal to this axis is the component with which the moral/relational constructs *irresponsible*—*steady* and *family oriented* --- *emotionally independent* correlate most highly. The self as seen by others is more characterized by undesirable physical health attributes, and is undifferentiated on the orthogonal relational axis. This is interesting because the participant noted that despite looking after her grand-daughter, both her mother and her daughter did not see her as being responsible or family oriented. Notably, the liked person is construed as *irresponsible* but also as *wanderlust*. However, the disliked person is also characterized as *irresponsible* but also *emotionally independent*. A third component *wanderlust*---*homely* best characterizes ideals. Perhaps it is not surprising that she had an implicative dilemma of the form *I want to be energetic, but if I am seen as energetic, then will I also be seen as more emotionally independent and more irresponsible, and I would prefer to be seen as responsible and family oriented*. The desire to be unlike mum and daughter in one respect, by being responsible, appeared to conflict with a more self-centered desire to be 'busy' 'energetic' and literally *wandering*. Pursuing these values requires physical energy, but some degree of independence (which she construed as a physical construct). It seems that this dilemma is currently more elaborated in the experience of the physical body being *wiped out*, *slow* and *lounging*. The *wanderlust* construct that characterizes her ideals is dissociated from the physical health subsystem (containing *independence*), which perhaps helps to manage the conflict between responsibility to family and having desires for herself. Validating her responsibilities and sacrifices may help her to elaborate alternative choices, as being *irresponsible* can be construed positively by this person. The concept of being 'tied down' by responsibility, or perhaps difficulty 'walking away' might help to elaborate the 'emotional weight' of her situation. Reintegration of her values of *wanderlust* with her current self construct (e.g. Smith & Hayes, 2005) could be used to positively fill the potential emptiness left in this person's self-construction if they spend less time being responsible to others (Havens, 1993).

3. Mixed group

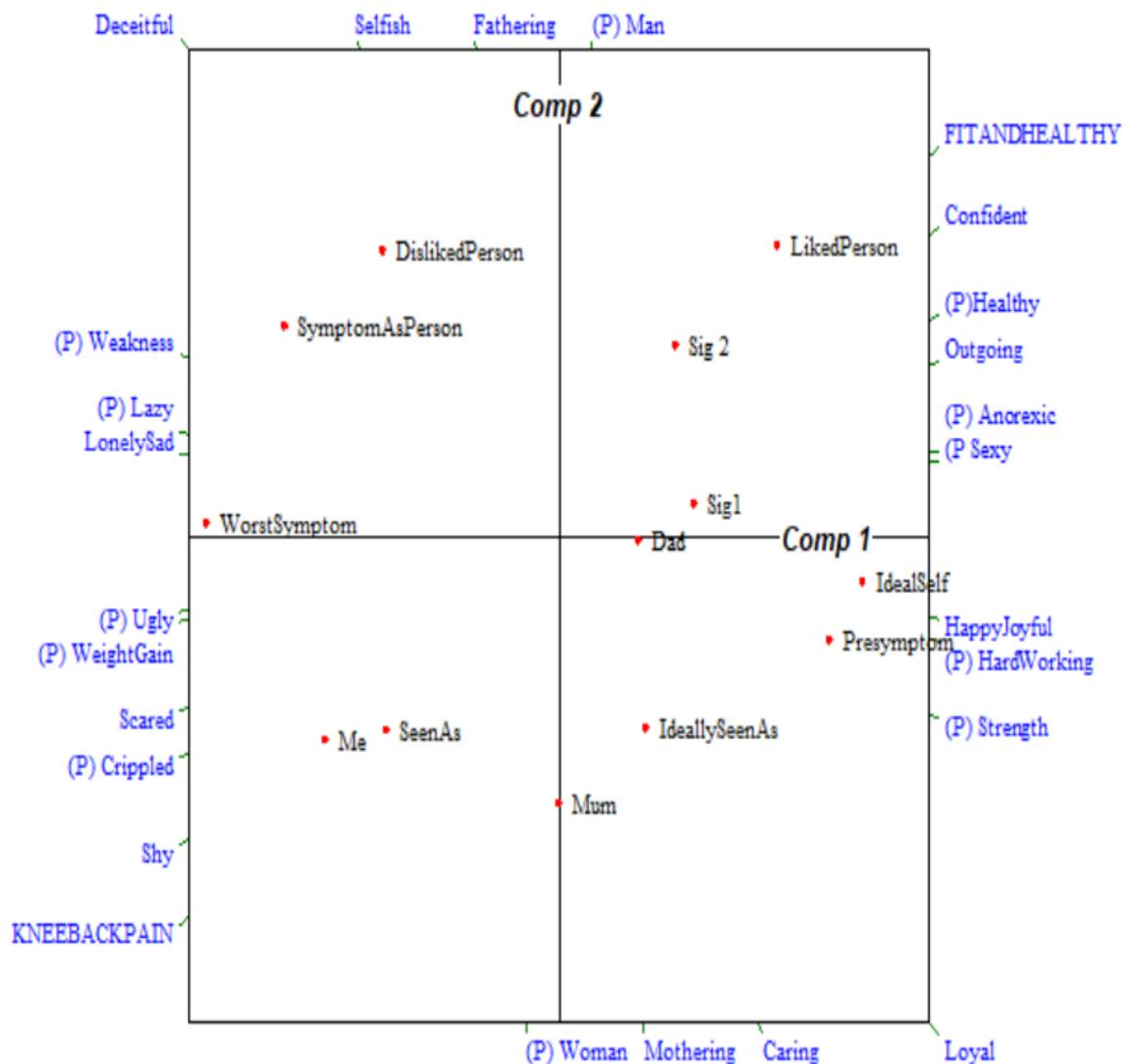
This subgroup might be described as a group which bridges across the strength-based and sensitivity-based subgroups described above. The current self was characterized by a mixture of emotional and physical constructs that suggested fragility or vulnerability for these groups, such as 'scared', 'frustrated', 'heavy' and 'small' (in a possible subjective sense). The characterization of symptom as worst included constructs with a particularly emotional tone: 'isolated' 'frustrated'

'sad', 'lonely'. Several of these participants described MUS as restricting their lifestyles, and valued activities that were affected by MUS included 'outside' activities such as going shopping, socializing and going for walks. However, despite these reported losses and restrictions, this group tended to have a more elaborated self through symptoms.

Whether these symptoms represented embodied constructs is not entirely clear. Two participants in this sample had implicative dilemmas: for one participants, being seen to be 'strong' and 'outgoing' carried the undesirable implication of being seen as 'confident' – whereas they preferred to be seen as 'shy'. The other participant wanted to be seen as 'young' (rather than 'old'), but this carried the implication of being seen as 'innocent' – whereas they preferred to be seen as 'knowing' by others. In contrast to the 'sensitive to others' group, this group appeared to show a strong reduction in anxiety levels as discrepancies between the current self and the self with worst symptoms increased. This indicates that there is something particularly undesirable about the symptomatic-self that this group may wish to dissociate their current self from. One speculates that this might be emotional vulnerability based on the way that the self when symptoms are worst is predominantly characterized. In support of this, the increase in anxiety scores was particularly strong for this group as the level of inconsistency and conflict ('threat') increased for the self when symptoms are worst. Even more speculatively, looking at the dilemmas described, it might be hypothesized that this group construed themselves as 'being strong for others', despite being in touch with their own emotional vulnerabilities when experiencing symptoms. Isolation may be a strategy for maintaining a public image of strength (constriction).

Although a comprehensive background of participants' etiology of MUS was not obtained as part of interviews, one wonders whether, rather than experiencing triggering events which may threaten to invalidate the physical-self-construct more concretely (as hypothesised for the strength-based subgroup), it may be that this group have had a self-construction of emotional strength invalidated by injury of a more emotional nature (Nakazawa, 2013; Obissier, 2006). Indeed, several participants in this group explicitly compared the symptom-as-person element to ex-partners, including terms such as 'deceitful', 'arrogant/male' and 'uncaring'. The desire to 'be available for others' might be a reason for these participants to refrain from acknowledging these injuries which affect the mind (evidenced in the emotional nature of constructs used) as much as the body (Turk & Gatchel, 2013). This group may present as a mixture of attachment strategies involving inhibition of one's own negative affect and compulsively compliant and caregiving behavior (A3, A4 and A5 attachment types; Koslowska, Foley & Crittenden, 2006, p.94) (see Kozlowska, English & Savage, 2012 for case examples).

Illustrative case example 3: 'Strong for others'



This person in her late 40s reported the onset of knee problems and back pain following a couple of traumatic accidents that were separated by several years. She had received cognitive behavioural therapy for trauma following the most recent incident. However, a more recent traumatic incident had also happened to her daughter (who does not feature in the grid), which had further unsettled her already unstable sense of safety in the world. Her symptoms increased her self-elaboration, although the current self and the self as seen by others are somewhat isolated from non-self elements by their being *kneepain*, *crippled*, *scared* and *shy*. The symptom was construed as similar to the disliked person as being *deceitful* and *selfish*. This person perceived strong dissimilarity between her current self and her pre-symptom self (dist = 1.22) and also between her current self and her ideal self (1.29). The magnitude of the distances indicates that the current self is in fact seen to be a

different person to the self before symptoms and the ideal self. The person desired to be more fit, healthy, and physically attractive. She also desired to be strong and caring, particularly in the eyes of others: She mentioned about supporting her daughter through her trauma and about 'being strong for them', despite construing themselves as currently being *weak*. This is reflected in an implicative dilemma of the following form: *I want to be seen as strong and outgoing, but that would mean being seen as more confident, and I want to be seen as shy. Confidence* did not have any clear negative associations, other than perhaps having some correlation with being *male*. Perhaps being over-confident may be dangerous in a world that is not construed as being safe. The derogatory physical construal of the self as being unfit and unattractive as a result of her symptoms may reflect physical insecurities with the body, which parallel or embody her insecurities about the world more generally. Being seen to be physically *crippled* may be more preferable for her if it is important for her to be seen as emotionally *strong* when helping her daughter to recover from her trauma. The symptom interferes with the desired activity of walking the dog. One could conceive how this activity may also be undesirable to someone who construes herself psychologically as being *scared*, but who may be unable to express this to others whom she feels protective over. In this case example the self-constructions of strength and weakness, and being 'there for others', seem to coincide within this person's construction of her physical-self.

Summary/Clinical recommendations

Assessment and integrated formulation

Repertory grids that elicit both bodily and psychological constructs could be a potentially powerful tool in a clinical or therapeutic context, facilitating both integrated formulation of distress and guiding the collaborative reconstructive process that is essential to a sustainable intervention (Kelly, 1969).

The salience of times when symptoms are worst

Even when the background level of daily functioning and overall symptom severity of those experiencing MUS appears to contrast with levels of psychological distress in clinical settings, clinicians should be careful not to see this as an over-exaggeration of symptoms. Clinicians should be mindful that times when symptoms are worst are likely to be 'landmark' (Berntsen et al., 2003) occasions threatening how people experiencing MUS see themselves.

Managing high standards (implicit and explicit)

The presence of high standards for oneself may be present before the onset of symptoms. These

standards may relate to a social identity of 'being there for others' - ideals which may not be verbalized or explicit, but acted out instead by those with MUS. Some may have an image of themselves as being 'strong' that they wish to validate, perhaps at the cost of taking appropriate steps to manage symptoms. Being aware of these standards can be important when it comes to the process of goal-setting around recovery and management of symptoms. Goals might be set that are for 'overcoming' symptoms that are unachievable, or may be accepted on a verbal level by participants but the changes involved may threaten implicit core self-constructs.

Mourning losses and re-framing strength-weakness poles

People who were particularly likely to see themselves as being 'strong' or 'determined' prior to symptoms will likely be experiencing a mourning process and a loss of self. Initially, they may struggle to construe their identity in terms other than being strong, which will make it difficult to accept the symptomatic body that is construed as holding all the weakness. The person's attempts to 'not be beaten' by symptoms may be an attempt to maintain a sense of psychological strength, but may be excessive and exacerbate symptoms – and ironically threaten to invalidate the person's view of themselves as being 'weak'. Clinicians using counselling or talking therapies might be interested in looking at whether recent events, such as trauma, might have challenged the person's sense of being strong. Appreciative exploration of why the 'strong' pole is preferred (especially with reference to how the person is seen by others) may open up opportunities for re-construing (or re-framing) aspects of weakness as 'self-compassion', 'warmth' and 'tenderness' – which may be taboo for these people if it made them feel vulnerable. Feedback about how the person attempts to embody strength by fighting the effects of physical symptoms (e.g. muscular stiffness, posture, activity levels), along with alternative ways to let the body feel more 'comfortable' and accommodating of symptoms (e.g. guided relaxation) could be explored in non-verbal therapies (e.g. 'mirror-time', Mahoney, 2003)(Mills, 2005).

Prioritising one's own needs without becoming 'selfish'

Participants who show signs of 'being a body for others' may have low self-care priorities. Engaging these participants in strategies such as 'pacing of activities' may be difficult if patients derive a strong sense of identity and self-worth in caring for others. This aspect of their identity may be something that they are not fully aware of until it comes under threat from exacerbated symptoms that restrict being available for others. The sacrifices made for others may need to be acknowledged, otherwise the implicit meaning of symptoms could be invalidated by aggressive attempts to 'get rid of symptoms', which will actually threaten implicit aspects of core identity and de-stabilize the

integrity of the system of relationships surrounding the person (Feixas & Villegas, 1993). Such symptom 'crises' may provide opportunities for insight and change, making metaphorical connections between the messages of the body and relationship habits (e.g. heavy - - - burdened by responsibility). The person may need to be encouraged to experiment with the pleasures of taking care of one's own body-self, and to see the value in self-care (where previously value was taken from caring for others). However, unlike those who see their pre-symptom selves as 'strong', those with a disposition to care for others may need to re-construe themselves as 'stronger' in asserting their right to care for themselves, as opposed to 'sensitive' to the needs of others. Reconnecting the person with a positive and valued self (Smith & Hayes, 2005) will ensure that they are not left feeling empty or lost without a stable sense of identity that comes from being available for others.

Sensitively exploring constructions of vulnerability and providing treatment options

For those who particularly emphasize managing symptoms independently and wanting to be 'strong for others', one might wish to (if it feels safe and appropriate) explore further the contributions of emotional vulnerability and physical weakness to their meanings of 'strength' or 'weakness'. Withdrawal from the social sphere may be spoken about as being for emotional reasons as much as physical difficulties. If the person appears to be coping with an emotional injury through trying not to show their feelings to others, providing the person with choice about treatment of psychosocial difficulties and/or focusing on symptom-management is important, as the person may have ambivalences about either option. Gradually encouraging the person to take emotional risks through graded exposure to the social world could be important for supporting emotional wellbeing in parallel to strategies improving symptom management.

Critical review

The study piloted the use of a novel repertory grid method for exploring idiosyncratic constructs of the body with people experiencing MUS. Exploring mind-body identity within a single integrated construct system elaborated some of the ways in which people who experience MUS construct meaning through both mind and body as a unity. A possible extension of the current study might be to use an identical elicitation method to the one used in the current study, but to include 'my mind' 'my body' and 'me' (and the ideal variants perhaps) as distinct elements in the rating procedure. Measuring the standard Euclidean distances between these aspects of self may provide evidence of dualism and dissociation between mind, body and person. It would be particularly interesting to see how constructs such as 'strong-weak' would be attributed to mind, body and self respectively, for those experiencing MUS. The subgroups identified in this study have similarities with different

attachment organizations described literature on children with MUS by Kozłowska (2007) and Kozłowska, Foley & Crittenden (2006). Further research using a tool to explicitly measure adult attachment styles such as the Adult Attachment Interview (AAI) rated according to the dynamic maturational model (Crittenden, 1999; 2006; Kozłowska, Foley & Crittenden, 2006), alongside repertory grids containing bodily and psychological constructs, could be a useful means of empirically validating these hypothetical links; adding a developmental 'depth' to the organization of the construct systems.

The lack of a control sample for the study presents obvious limitations for the experimental identification of key clinical characteristics for MUS. For example, it may be that the construct physical or mental strength--weakness is a pervasive construct in Western culture, or perhaps that implicative dilemmas involving the body are present in acute or explained chronic illnesses. The correlational nature of the current study may or may not be seen as problematic depending on one's metaphysical position. For the author, the experience of psychological distress is conceived of as accompanying imminent and actual changes in construing, guiding us into action. To resort to ideas of causation would risk reinstating a dualism where emotions are seen as belonging to mind rather than body.

Although identifying subgroups within the current study allowed for further meaningful explorations to emerge, many of these explorations were not statistically tested and the hypothesized characteristics of these subgroups need to be validated with larger samples than the current study sample. However, at the very least, the increased information gained by dividing the sample into subgroups demonstrates the power of the repertory grid as a rich source of idiosyncratic clinical and research data.

The study was unsuccessful in recruiting participants directly from primary care settings. The reasons for this are not entirely clear: It is possible that GPs, who were asked to promote the study to their patients, may have had reservations about discussing the study with their patients, which is quite possible given the evidence that GPs find it difficult to discuss MUS with their patients (Dimsdale, Sharma & Sharpe, 2011). Based on consultations from a service-user with MUS, the wording of information sheets deliberately avoided using the term 'MUS' in case it was unfamiliar and off-putting to potential participants. However, it still may be the case that the stigma associated with psychological research proved to be a barrier to recruitment in this particular setting. Notably, this study is not unusual with regards to going beyond mainstream healthcare settings to recruit MUS participants. Several papers in the review recruited participants outside of outpatient hospital clinics using social media and public recruitment methods. Perhaps such methods are (at least for the time

being) the most effective means for recruiting this population. The positive aspect of this recruitment method is that the study reached people with MUS who are not engaged in healthcare services. As clinical outcomes indicate, all participants were to some extent distressed by their symptoms and the impact MUS had on their identities; in addition to MUS affecting their day to day functioning. A related criticism concerns to the use of correlate measures of psychological symptoms and symptom severity which were selected based upon their frequent use in primary care populations, and out of an awareness that the length of questionnaires was an important ethical factor for a study population who were susceptible to the physical demands of taking part in the study. In contrast to the rich idiographic information yielded by the repertory grid interview, these measures provided rather limited amounts of information as correlates to the various grid indices. Using more refined tools to measure distress and level of impact of symptoms of daily functioning (e.g. the Symptom Checklist 90-Revised (SCL-90-R) (Derogatis, 1994) is recommended for further research using the body-mind grids, provided the additional burden to participants can be accommodated.

The majority of the sample were considered to be a primary care population. However, some of the sample were not frequent users of primary care services so the study sample may not generalize completely to MUS samples who frequently use primary care services. Additionally, although many of the sample mentioned that they had not sought psychological support for fear of their symptoms being labelled as 'psychosomatic', the sampling method is likely to have biased the sample to those who are open to taking part in psychological research at least. Indeed, some forums that were approached by the author did not wish to advertise the study, stating that their members would not like to be involved in psychological research into MUS. One can imagine that a sample who were more vigilant about the psychological presentation of MUS might provide different constructs, and give more guarded responses to measures relating to anxiety and depression experiences.

The study aimed to elicit those constructs that described the core embodied aspects of self. However, it did so whilst acknowledging a theoretical background that proposed that core embodied self-constructs may be at the lower levels of awareness ('tacit' or 'habitual'), and may therefore be difficult to verbalize explicitly (Leitner, 1999; Lin & Payne, 2014). Indeed, this presents a considerable caveat of using an elicitation method that asks participants to verbalize physical constructs. Some participants reported having a 'strong sense' of the physical distinctions they were trying to make, yet finding it difficult to put words to this. The struggles of participants to 'language the body' are not likely to be exclusive to the current sample (see Panhoffer & Payne, 2017). Indeed, some studies have used alternative ways of identifying embodied constructs. For example, Payne, Lin, Cipolletta & Winter (2017) directly observed the ways in which people used their bodies in interpersonal space

and used these observations to rate their embodied construing. Although this method provides a rich amount of data about embodied construing, it requires detailed analysis of a small number of participants, limiting generalizability.

Putting language to embodied constructs may be difficult, but it could also be viewed as a very important process for individuals who struggle to find meaning in MUS. Indeed the connection between mind and body may actually be best made through language, particularly when it comes to the elaboration of dilemmas about relationships with others. The validation of a person's identity and way of seeing the world necessarily involves participating in a shared language (not necessarily a verbal language), where one can express one's constructions and receive feedback from others. Here the ability of metaphorical language to structure understanding of one phenomenon in terms of the structure of another allows for new and shareable meaning, allowing a person to communicate conflicts and elaborate alternatives outside of the territories of the metaphor (Mair, 1989; Centomo & Del Rizzo, 2016). Many participants who took part in the current study gave feedback that it had been a helpful process to use the constructs and numerical ratings to clarify the impact of symptoms on their identity (Fogel, 2013; Gendlin, 1982; Koch et al., 2013; Leitner, 1999). Making these links explicit in the presence of the researcher appeared to be a positive process for many participants, and was perhaps also a novel experience in a culture where the body is frequently reduced to a mere mechanism.

7. Conclusion

This study attempted to extend current understanding of the relationship between mind-body identity construction and MUS, using a modified form of the repertory grid method that explored both bodily constructs and psychological constructs within a single construct system. The study hypothesized based on 'frozen-construing' theory (Lin & Payne, 2014) and a literature review of relevant studies with MUS populations, that aspects of the body-self, including the MUS, would be dissociated from the core, verbal construct systems for making sense of self and others. This hypothesis did not prove to be correct, as the symptom construct was in fact well integrated and perhaps superordinate in the construct systems of most participants. It was hypothesized that the symptom would be enmeshed with a number of undesirable characteristics, and therefore that the current self with symptoms would be negatively construed; and also, that there would therefore be a desire to dissociate the current self from the self when symptoms are worst in order to protect identity. The current study provided some evidence of this. The final set of hypotheses suggested that the symptom may be implicitly associated with positive aspects of how the self is currently seen and seen by others, particularly with regards to those traits that were 'moral' and 'relational' in

nature. It proposed that such self-constructions may be pre-verbal and embodied, hence less well elaborated within the construct system. While there was good evidence for this hypothesis for the current sample, the researcher found this pattern was more evident in a sub-section of participants. For these participants, the way in which the self is seen by others is particularly influential. Symptoms and constructions of the body-self appeared to elaborate and embody positive and negative aspects of the self in relation to others. Another subgroup seemed to have a superordinate construct relating to strength and weakness of both mind and body. This group appeared to be struggling to find a current coherent construction of their current mind-body identity using this 'strong-weak' construct sub-system. A third subgroup seemed to be somewhere in between, and might be seen as 'trying to be strong for others'.

While the study is limited by the sample characteristics, and by limited numbers preventing statistically viable comparisons between hypothesized subgroups, it demonstrates that integrating body and mind within exploration of an individual's construct system can provide additional understanding for a sample whose experiences are characterized by lack of validation of their suffering in a reductionist medical culture; and who struggle for themselves to find meaning for, and integration with, their symptomatic bodies.

Dissemination

The author intends to write up this research for publication in relevant physical health journals, but also to present the methodology used as something of interest to clinicians and researchers using Personal Construct Psychology in their approach. The plan is to provide brief face to face consultations with willing participants who took part in the study, to test the validity of possible mind-body connections interpreted by the author using individual repertory grid data. This personalized feedback process will provide opportunities to refine and elaborate further on the findings discussed in this thesis prior to publication of results.

A personal note

Through the process of producing this research, the author's own appreciation has grown of the necessity of unity between mind, body and the world in *feeling connected*. Whilst spending large amounts of time isolated physically from the world, and dissociated from everything but the contents of one's own thoughts, the desire to return to *being* a body in relation to the world was starkly emphasized. Going beyond 'functional' self-care of the body, allowing for moments of connection between the self and the world, occurred *through* the body. Whether in the form of the thrilling sensation of air rushing on the skin whilst racing through woodlands on a bicycle, or the slightly light-headed, half-intoxicated feeling after a bout of uncontrollable laughter with a partner,

these moments of connection are framed in language here on the page, but were inextricably embodied moments of connection with others and the world. On the other hand, ‘mindless’ activities were also a part of recent months – engaging in trivial tasks to procrastinate from a psychologically daunting task was equally a form of disconnection or dissociation from reality – a disconnection that recruited the body as an accomplice. Ultimately, one feels fully ‘oneself’ when one is metaphorically ‘firing on all cylinders’, a mind-body unity engaged in exploring the world with other cherished mind-bodies. I would like to thank all those who I have connected with through this thesis, and who I have had the privilege to share its explorations and adventures with.

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Appendix A: Table of papers reviewed in literature review:

Qualitative literature

Authors	Sample	Design	Key Findings	Author Conclusions	Critical Commentary
Asbring (2001)	12 CFS, 13FM, 32-65 years, 1-23 years symptom duration (x = 10) 6 employed; hospital outpatients	Grounded Theory analysis. Interview covering illness, ideas about illness, consequences, coping strategies.	(i) Loss of earlier identity; new non-integrated identity described as 'otherness'. (ii) loss of roles. withdrawal from demands/expectations of others. (iii) coming to terms with new identity (iv) increased self respect and personal integrity, favorable identity	Although themes of loss and difficulty integrating new identity, only small minority totally negative about illness.	-not longitudinal, transitions -hospital sample may not be representative of wider community
Werner, Isaksen, Malterud, 2004	10 women purposively sampled, 6 from 12-month treatment group, 4 from primary care setting, chronic muscular pain with no explanation.	In depth interviews, phenomenological analysis; focus on experience of being female patient with chronic pain in medical encounters and everyday life.	Telling stories about being emotionally strong and positive, sometimes contrasting to accounts of limitations and disabilities; contrast to complaining/'whining' of other women	Women's stories attempt to cope with psychological alternative explanations, scepticism and mistrust, strength narratives give credibility as patients; Acceptable gendered moral manner for living out illness publically. Better accepted if not seen as 'whining'?	+ places accounts in context of wider gender discourses, processes of perception management -bias in selection of supporting evidence and other aspects of methods and analysis, according to feminist critique?
3. Swoboda, 2006	18 women; open to those with CFS, FM, MCS, GWS, public advertisements; 13 caucasian, 3 african American, 2 hispanic.	Narrative: how do women explain bodily suffering in the face of contested illness? Embodiment focus – analysed using Frank's (1995) typology for illness.	(i) body control: loss of body control countered by becoming 'lay expert' in condition (ii) body relatedness: struggles to conceptualise rel to body in language of biomedical approach. Association/disassociation with body – drawn distinction between before-illness-selves and after-illness-selves.	Finding meaning for the body means going outside of the cultural idiom for understanding the medical body. Avoiding isolation a key motivation.	-selection bias of sampling method, prosocial sample in being there 'for others' and taking part in research? -unclear on author agenda in feminist journal, choice of women only for the research questions.

			<p>'Outside 'myth of escaping body through biomedical regulation' (Swoboda, p81)</p> <p>(iii) other-relatedness; Isolated body, failure/stigma of others to understand debilitation; expressions of desire generated to 'be a body for other bodies' (Frank, 1995, p40). Mentoring/support /advice to other sufferers.</p>		
Afrell, Biguet & Rudebeck, 2007	20 (13 female)– hospital outpatients patients; chronic pain; primary care and hospital clinics. All unemployed	IPA: interviews, describing process of referral to physiotherapy	<p>Typologies based on (integration of body into identity, reliance of body, body awareness, understanding pain)</p> <p>(A)'surrendering to one's fate'—trust of own ability to cope with integrated but unpredictable body.</p> <p>(B)'Accepting active process of change' making choices to get a richer life, see causes of pain as mind-body linked and integrate 'wisdom of the body'.</p> <p>(C)"Hope & Resignation" ambivalent state, oscillating between accepting & refusing body.</p> <p>(D)"Rejecting body" integrating body impass; body is energy or trap; not in control life unsafe and difficult.</p>	Integration of body a necessary step in acceptance, including body awareness and reliance, those in dialogue with body vs. detached.	<p>-Biographical perspective lacking- chronicity as a factor</p> <p>-Population positive to physio may not be representative.</p> <p>-Not tied to any clinical variables e.g. time spent in services, outcome measures, symptom impact</p>

5. Smith & Osborn 2007	N=6 purposive sample – pain clinic.	IPA ‘lived experience’; how pain affects beliefs, attitudes, feelings about self.	(i)negative impact on self – ‘not me’, self-denigrating of current self; effect on self more distressing than pain itself (ii)continuum/trjectory -fight to retain original +ve self, protection from ‘erosion of self’ (iii) public arena makes it worse – vulnerable to scorn, perhaps projected standards. (iv) directing it at others: negativity strong and directed towards others. (v)sense of fate or justice ‘what goes around comes around’	Cyclical process: pain>negative thoughts > internal self loathing > discharge onto others > sense of fate/justice for pain Shame – sense of self as being an object of scorn or punishment.	-limited sample size, selected on basis of characteristics may be more severe +in-depth look at processes of comparing self to others.
Smith & Osborn, 2006	N=6 as above (2008)	IPA interviews, focus of relationship between self concept and body	‘living with body separate to self’. Painful/dysfunctional parts placed aside ‘not me’; Some parts of body fragmented, others whole body not just parts.	Small mundane phys activities just as salient to self as profound life changes Enmeshment – seemed to ‘trap’ negative aspects of the self. Contradiction between embodied pain and preferred ‘bodyless’ self.	Smaller sample size, likely to be more severe due to setting. & demographic.
Osborn & Smith 1999	9 women low back OP clinic, recruited based on ‘excessive distress and disability’ in absence of organic pathology	IPA	-searching for an explanation; comparing selves others; not being believed; withdrawing to avoid being a burden, rejection, but fear of isolation	Comparison between ‘ill’ self and former ‘healthy’ self and healthy others. ‘concealed’ versus ‘open’ self and dilemmas around revealing pain to others.	+used specific assessment criteria to screen clinically relevant sample -may not generalize to primary care population
Hakanson et al., 2008	9 (2 men) IBS gastro clinic	Descriptive phenomenological perspective (Giorgi, 2000)	Altered self-image; separation from body; attractiveness lost (females) weakness	Self-distrust unreliable body; potential for shame; body as malfunctioning	-focus on bodily experience -small sample -psychological characteristics/

			(males); ashamed – uncontrollable body; distrusting body – limited & constrained; blaming self for aggravating symptoms.	object; investment of energy into solutions	relevance of population not stated.
Reed-Gibson et al., 2005	MCS: 268 initially, 203 at 2 year follow up, recruited through newsletter soc media; physicians' offices	Open ended postal questionnaire on how sense of identity changed as result of having MCS member-checking as quality control	Loss of stable/familiar personality negatively perceived – envy of 'well people'; loss of self-positioning ; appearance big factor in women, emotional suppression to meet other's expectations, trying not to alienate others with distress; 'forced growth' having to create balance, prioritise needs; reconsolidation of identity – drawing upon other aspects of identity	Considerable impacts of MCS which were not known before this study	Use of member checking as q control Large sample size to make themes more generalizable, but also makes finding a significant impact more likely. -not in-depth interviews for exploring significant themes, identifying who was most likely to need support.
Whitehead 2006	17 CFS, 10 from local hospital, 3 from support groups, 11 female.	Longitudinal phenomenological 2.5 years	Phases (i)ubiquitous losses – isolation & sep. from roles; (ii) disabled identity part and whole self oscillating (iii) new sense of normal/reconstruction – more valued self emerges, return to self prior to illness not sought.	-possibility of more radical identity reconstruction without symptom remission	-inclusion not based on medical dx -longitudinal adv that processes of change can be seen. -forms of support for participants during phases of study that may have facilitated acceptance?
Lilleas & von der Fehr, 2011	Based on Lilleas (2003) 71 interviews with women 25-70 years chronic pain	Further analysis of study data showing 'natural' female body attitude as being available for others,	Embodied habit 'to be there for others and not for selves' 'knowing' pain but not responding to body signals; pain not taken as a warning; 'body preparedness for others' gender-specific construing.	Gender specific habitual practices and actions; effectiveness of changing embodied 'habit' in talking therapy approaches emphasized.	-single case analysis, though building on sig. data

		regardless of age Single case illustration in current paper			
Crowe, Whitehead et al., 2010	64 chronic low back pain; public advertisements	Thematic analysis	Unpredictability of pain; need for vigilance; externalization/objectification of body; described body as if not part of their subjectivity, but rather as something external or other-than their sense of self; tensions between current and ideal selves	Tensions with body and broader identity may be connected.	Quality controls not reported +looked at body relationship in relation to self.
Miles et al., 2005	29 chronic pain outpatient clinic, 20 women.	Grounded theory	3 categories of constraint because of the pain, different situations bring difference challenges to identity: ability to do things, judgements from others. Coping with constraints: assimilation and accommodation; persisting in pre-pain activities despite constraints; subversion (biggest subjective impact on identity) – avoiding/curtailing of activities because of feeling stigmatized by judgements of others ('sensitive') rather than pain-related constraints. Body: slower, older, gaining weight, dualism (body not doing what mind wants it to do)	Considerable influence of others' judgements on sense of self. -some able to normalise changes to socially accepted changes (e.g. 'growing older') -superordinate category of 'living a normal life' -people whose identity rested on physical performance and body technique found it hard to adjust to pain -'need for research to look at relationships to body to help people find new body identities.'	No mention of quality controls/reliability & validity checks -some sections of summary unclear what weight of evidence was, single illustrations from source text. -hospital clinic sample who had been unsuccessfully treated - limited generalisability.
Hellstroem, 2001	21 chronic pain patients, inpatients in	Self-concept: projective possible selves,	Higher order themes: 1. dualism/separation	Different selves develop over time which are problematic if	Importance of iterative & social factors in the shaping of positive

	assessment hospital clinics, 6 men	processual self – open ended interviews focussing on temporal aspects of self-conception . Phenomenological analysis	of body from self-concept: body described as ‘other’ 2. struggle to maintain past identity; competent and active self ‘died’ (118). 3. entrapped: ‘locked in, a kind of prison’ (118). 4. projected selves: self defined by others in a way that is either developing or hampering self-validation. 5. temporal factors: fear of pain taking over identity future entirely.	they contrast too much with current reality or pain. Self appears to lag behind body changes and behavioural changes	possible selves needs further research -small sample. OP clinic -patients currently undergoing assessment 4-5 weeks inpatient stay, may not have had opportunity to integrate pain with self in the context of uncertainty.
Clarke & James 2003	CFS 59, 18male, recruited from CFS support groups.	Discourse Analysis: looked at ways participants talked about themselves as objects to be dealt with and understood. Self as fundamentally sociological concept Telephone interviews open ended.	1.immediate and short term loss of self. 2.disaffection & isolation socially: feel like outsiders, isolation, social distance. Stigma. Stepping away from former lives for shame/embarrassment about changes-maintain former identity 3.changed rels with ‘healthy people’ 4.new self emergence – not returning to pre-fatigue self, ‘radicalised self’ stronger, standing up for self, pacing, enjoying relationships	-unable to find legitimizing identity from medical discourses leading to more radical reinvention of self. -need to ‘include consideration of body and biography in self-identity and expectation’.	Link to wider discourses and reinvention of self not made by participants themselves. +looking at position of subjects in relation to wider discourses (figure/ground).

Quantitative literature reviewed

Authors	Sample	Method	Findings	Conclusions	Critical commentary
Yu, Norton, Harrison & McCracken, 2015	Chronic pain studies	Review of quantitative studies on chronic pain and fibromyalgia, examining various conceptions of self and attempts to measure and define identity and self-concept in chronic pain research, 54 studies reviewed.	15 separate self-related variables, clustered into 4 types: judgements of personal value/worth/esteem (32); role-based or descriptive sense of self including self-conflict (8); sense of self as process, detached from attributes (1) body-focussed measure (Bode et al., 2010)	Broader researcher assumes relationship between thoughts about self as being equivalent to self, rather than focus on self-as-process. -need for clearer definition of self in research, otherwise tendency to assume self = person. -words a process of describing....	Did not notice the lack of process self-conceptions might relate to the experiential/embodied conceptions of self that are not based in higher order cognitive process of 'naming attributes' -doing selves, being selves, conceptual selves, evaluating
Bode et al., 2010	168 outpatient orthopaedic clinic; 36 of which (21.4%) undiagnosed	Body-self-unity 10-item questionnaire; illness cognitions questionnaire; functional limitations; self-esteem Rosenberg 10-item; correlational analysis & multiple regression analysis	2-factor model of body-self unity q – 'alienation' & 'harmony'; self-esteem -vely correlated with 'alienation' and helplessness cognitions; self-esteem +vely correlated with 'harmony' and 'acceptance'; 'alienation' correlated +vely with 'helplessness' & -ve 'acceptance' --multiple regression; most strongly mediated relationship with functional limitations and self-esteem	-body-self strongest mediating effect on self-esteem vs. functional limitations compared to illness cognitions	-relationship to body and self highlighted; importance relative to 'illness cognitions' (overly mental?) -not validation study with chronic vs. acute illness, -controlled for level of limitation in analyses - no comparison of explained vs unexplained illness

Compan, Feixas et al., 2011	Normal controls vs 30 women dx fibromyalgia ; 46.47 years from support groups; controls (30) experiencing pain but not Dx fibromyalgia based on quads drawing + score on pain program; sampled from 452 women assessed for the study	Repertory Grid 10/20 elements (no set limit on number of constructs) -SCL-R-90: distress; fibro impact q; VAS/tender points -Implicative Dilemmas with classification of 'content' of constructs; Chi-squared of IDs determining clinical/normal sample	Clinical sample sig more IDs than cons; relatively higher pain levels and intensity; self-ideal disc higher in clinical sample; ideal-other discrepancy – perceived inadequacy of others; no diffs in perceived social isolation; moral constructs tend to congruent, phys health – 73.9% of IDs pain related – congruent moral construct e.g. responsible, hardworking vs lazy	-high standards for evaluation self & others; perceived adequacy of others more predictive of clinical sample than self-ideal discrepancy; ID most predictive variable – type of enmeshment not captured by self-ideal disc; similar to Drysdale 'sensitive to others' – responsible vs. lazy (moral CSPC; disappearance may also carry threat to moral positive identity (Asbring +ve identities)	-provided rather than elicited symptom contrast -non-clinical not given pain construct: no dilemmas inherent in physical symptom? -norms vs clinical not necessarily based on explained vs unexplained pain – but on fibro Dx (i.e. controls may have unexplained pain) -based on an analysis of self-ideal discrepancies/dilemmas – the impact of other perspectives may be more relevant to clinical outcomes (e.g. Kindermans et al, 2010 research) +use of matched control sample to isolate key clinical characteristics
Benasaya g, Feixas, Mearin, Saul & Laso, 2004 (Reported in Feixas & Saul, 2004)	Multicentre dilemma project, IBS 63 non-clinical control vs smaller group 13 of IBS, 7 of which met criteria for anxiety disorder, 5 somatization disorders	Dyadic elicitation (did they provide a symptom construct?) RGT, PVAFF (cognitive complexity)	IBS greater number of constructs esp those with somatization; IBS/somatization showed lower levels of differentiation (higher PVAFF) & high levels of polarisation (extremity of ratings)	Role of IDs/conflict in broader chronic health conditions	-control group not symptomatic -were IDs related to symptom construct? -no content analysis for IBS constructs. -not statistically analysed.
Drysdale 1989	Chronic low back 15 acute 18 chronic, hospital departments	RGT 12 constructs provided from previous experience in low back pain group; 10 frequently used constructs.	no sig diffs in construing pain & emotion, except acute anger constructs had higher ratings used; no sig diffs in use of constructs relating to pain	Tendency to associate pain with being sensitive towards others – symptom associated with quality of morality (Cornejo et al.); low levels of anger	-provided constructs rather than elicited them, less meaningful than elicited -anger may not be less perceived but less relevant/convenient to participants (because it was not

			& depression; highly sig pain/no pain correlation with 'sensitive/insensitive to others'	awareness; with time perceive less depression & seen in less undesirable terms	elicited from participants themselves but provided).
Morley, Davies, Barton, 2005	84 participants from pain clinics; 33 male/56 female	word fluency (FAS) control variable for possible selves; chronic pain acceptance q (CPAQ); BDI-II depression scale; -possible selves interview: name up to 10 descriptions actual/hoped/feared-for, future selves required further elicitation methods; each characteristic rated in terms of – efficacy (how capable) & expectancy (how likely) if still in pain (hoped for); vs. (feared-for) how likely without pain	Proportion of hoped for self that could not be achieved w/o pain predicted BDI score ($p < .001$) and lesser degree of pain acceptance ($< .002$). exploratory analyses actual-hoped-for discrepancies did not add any explanatory power; nor did feared-for self enmeshment or actual-feared discrepancy;	Enmeshment closer relationships to acceptance than self-discrepancies; conditional-hoped-for self explained BDI and acceptance of pain	+quantified enmeshment/entrapment found in qual research. -absence of effect of feared-for not picked up because of using measures of depression rather than anxiety? BDI has number of somatic items – possibly making rel stronger than perhaps appears.
Sutherland & Morley, 2008	82 chronic pain, 51f, criteria as above 2005 pain clinic,	Enmeshment including HADS subscale of anxiety as well as depression; included PSI-ii motivational preferences (sociotropy/autonomy) see if moderate rel with distress. Asked for lists for self-hoped-for and other-hoped for & judgements of whether words represented 'wanted'/ideal vs 'ought' characteristics (a)number of characteristics	Hoped-for-other self did not have sig more 'ought' characteristics; discrepancy with self associated more with depression (vs self-ideal) than anxiety; enmeshment associated with higher levels of anxiety regardless of motivational preferences; feared for self not associated with anxiety measure;	With highly valued characteristics, greater enmeshment with pain is associated with anxiety -Did not find particular influence of 'ought' characteristics	Physical selves entrapped, comparison to former selves before symptom indicate any pre-enmeshment to body? -no analysis of content of enmeshed characteristics.

		<p>each self; (b)proportion of enmeshed future possible selves; (c) proportions for ideal vs ought (d)magnitude of discrepancy poss selves Multiple regression analyses</p>			
<p>Vagronev eld; Morley, Peters et al., 2010</p>	<p>Whiplash injury pain, possible neck injury, recruited within 1 month of RTA; Exc. Fractures or spinal dislocations 34 at follow up 24female</p>	<p>Questionnaires assessing self discrepancies and enmeshment with pain; diaries 21 days recording mood, activity and concordance with ideal vs actual levels of activity; re-administration of questionnaires after 21 days. Measures of disability, pain, pain-catastrophising (Sullivan, 1995), depression (Centre for Epidemiological Studies Depression Scale CESD, Radloff, 1977)</p>	<p>Resolution of pain associated with a reduction of enmeshment, but not to a change in self-discrepancy (acceptance of new self-aims? E.g. not feeling that RTA/pain have 'taken everything away')</p>	<p>Reduction in enmeshment an important aspects of distress relief.</p>	<p>Why does enmeshment resolve for some not others? Premorbid characteristics/family constructs of individuals mirror a rigidity of aspects of self?</p>
<p>Stuerz et al., 2009</p>	<p>Tinnitus sample Groups divided into mild/mod & severe based on severity scores</p>	<p>Mail questionnaires, 65 >6 months tinnitus support groups. Tinnitus questionnaire distress & degree of severity; body image questionnaire; BDI-II</p>	<p>Attractiveness/self confidence, emphasis on appearance, and vitality and body dynamics sig lower than controls; severe group reported greater insecurity about their bodies'; sig +ve correlation between severity and 'concern' and BDI-II</p>	<p>Tinnitus population may have negative body-image due to symptom causing distress not specifically from symptom experience.</p>	<p>Not clinically significant levels of psych distress on measures used (anxiety scale more appropriate for group with body concerns?) -which areas of body – qualitative/exploratory approach would have yielded spec info for this patient group.</p>

Waters, Keefe, Strauman, 2004	93 patients chronic low back pain (56% female); outpatient clinic	Self discrepancy theory (Higgins, 1987); Selves Questionnaire (Strauman, 1990) interview – lists of up to 10 traits actual, ideal, ought, ideal-other and ought-other. Score associations between attributes. Discrepancy score from subtracting matches – mismatches (inter-rater reliability 'excellent' range r=0.95-1.00) Measures of depression (BDI-II) and psych distress (GSI & SCL-R-90)	Stepwise regression analyses (controlling for variables e.g. pain severity): ought-other (20.9%) of psych distress scores; actual-ideal discrepancies 14% of variance in BDI-II scores (mod effect size) -ought-other explained most variance in pain severity (7.1%, small effect size). -length of time in pain not sig correlated with discrepancies	Ought-other: impact of perceived expectations/demands of other on psych distress and pain severity (which way around is the effect?) (boom-bust?) -emphasis on how much of a role others play in self-conceptualisation (Stryker & Stratham, 1985)	'ought' discrepancies not given anxiety score analyses, though clearly emphasised as important aspect to understand further. -are discrepancies pain-contingent or part of a wider discrepancy/depression? Authors suggest pain may provide self-esteem protecting means of attributing to personal failures/shortcomings (Pyszczynski & Greenberg, 1987) -unlike enmeshment research not clarify extent to which discrepancies are attributed to presence of pain.
11. Harris, Morley & Barton, 2003	90 participants, 34 male, dx chronic benign painful condition, hospital pain clinic,	Self-concept differentiation (SCID) – generate 4 roles, 2 attributes per role, across 4 soc domains (friendship, occupation, leisure & family) for pre-pain and presently. Compute number of roles attributes and unique attributes – unique attributes/total attributes computed as measure of self-complexity (more of them, more would remain in theory even with pain)	-sig. losses in all attributes least in family domain which was relatively preserved. Role loss predictive of BDI-II score -attribute loss explained more BDI/HADS variance than role losses multiple regression analyses. -no diffs in self-differentiation over time -neither pre-pain nor current SCID had sig explanatory value to either BDI-II or HADS scores.	Evidence of role loss/attributes quantified. Attributes seem to have stronger affect on measures used. Self-discrepancy models construct self as attributes rather than social roles.	Conceptualisation of 'identity' based on lists of roles/attributes – reductionist & not necessarily construct-valid. -BDI-II used. -did not report on whether SCID same/different to other populations (is it standardized?)
Kinderman,	Chronic low back pain	Self-discrepancies & pain-	Hierarchical multiple	Emotional distress strongly	-level of measurement of

<p>Huijnen, Goossens, Roelofs, Verbunt, Vlaeyen, 2010</p>	<p>with non-spec injury, >3 months, 18-65, not primary diagnosis psychiatric -83 included in analyses. 58 referred by clinicians, 25 responding to advertisements; latter group slightly older but no other sig. diffs. 22-65, 53% employed, mean symptom duration 9.81 years (5 months – 39 years).</p>	<p>behaviour. Hadrin's Selves Questionnaire 5 of ought/ideal/feared from self/other perspective. 30 total attributes. Each rate 1-5 'currently describes me'. Ideal/ought- low score = greater discrepancy; feared – low score = lower congruencies -Patterns of Activity Measure Pain (POAM-P, Kone et al., 2007) measuring 'avoidance', 'overdoing' & 'pacing' 10 items for each. 3 factor structure – construct valid. -Health related QoL (RAND-36); VAS pain intensity;</p>	<p>regression: ideal-own-self discrepancies did not predict depression or anxiety, nor did ought-other. Controlling for sociodemographic variables feared-for-own and feared-for-other congruencies predicted depression and anxiety. Multiple regressions of activity patterns – no significant effects of self-discs on persistence -quadratic ideal-other U shaped relationship predicted persistence (<.001). -both feared-for-self and feared-for-other significantly predicted avoidance behaviour</p>	<p>related to proximity to feared-for-self; in contrast to Waters et al. (2004), self-ideal not shown to be related. -feared-for-self more salient factor in behaviour -persistence behaviour motivated by others' expectations and not by own 'oughts'.</p>	<p>self-discrepancies might be limited in relationship to activity patterns – Self-discrepancies are higher order reflective constructs. -attempts to connect discrepancies to behaviour and symptom-management. -could the feared for self be equivalent to the implicit poles of a bipolar construct?</p>
<p>Kindermans, Goossens, Roelofs, Huijnen, Verbunt, Morley, Vlaeyen, 2009</p>	<p>80 chronic low back pain (39 women), OP hospital clinics, 22-65, duration 5 months-44 years, 50% employed</p>	<p>Hardin's selves questionnaire (HSQ) 10 of each attributes ideal/feared/ought selves, 5/5 from self/other perspective. VAS (intensity), BDI-II depression, Roland Disability Q (RDQ, Roland & Morris, 1983). Content analysis of HSQ attributes, up clustering into 8 categories (Kappa= .62). Frequencies of each cat (No.</p>	<p>Ranks: interpersonal (e.g. honest, friendly, helpful) – wellbeing (not in pain, healthy, active, energetic) – personal attributes (e.g. independent, hard-working, lazy) -same pattern across ideal/feared/ought regardless of perspective.</p>	<p>-importance of societal role to patients with CP – the person they want/feel compelled to be and fear to be in social environment. -ideal selves place health second priority - lack of correlation between content and depression present because discrepancy is lower for certain attributes?</p>	<p>-PCP – implicit poles may give meaning to ambiguous physical constructs e.g. 'strong', 'lazy' (which may be classified as interpersonal if contrast poles are seen) – reliability of content categories not validated external to study, nor any comparison to a normal population on these grounds.</p>

		attributes) calculated	Ought & feared sig more characterised by interpersonal attributes Ideal self sig more characterised by wellbeing attributes Disability related exclusively to ought/wellbein g attributes -no sig rel. between content and depression	-challenges to interpersonal self may be as important as the health condition	
Large & Strong, 1997	19 (12 women) chronic low back pain sufferers 6 public advertiseme nts.	Repertory grid interviews, including elements 'like a coper', 'like a hypochondriac' and 'like an ill person', in addition to 'self' and ideal self. Supplied 2 constructs: pain- free vs in pain, and 'coping with pain' vs 'not coping with pain'. Analysis included standardized distances (Slater, 1985) between various elements, and constructs of coping.	Self rated as being close to 'coping' element, and more so for the 'how others see me' element, far from 'hypochondriac' who does not cope with illness. Content of coping constructs included authenticity, accepting limitations, mastery/control of symptoms, stoicism, emotional coping and socially not being 'a burden' to others.	-back pain patients' construing of 'coping' and of being 'a coper' may be self- esteem preserving. Contrasts of coping looked upon derogatorily.	-supplied constructs rather than elicited them -did not provide analysis of content of constructs, which would have been useful for categorising contents of 'coping' constructs in a reliable way – however, systems for analyzing constructs had not been designed at the time of the study

Appendix Bi: Example RG Recording Sheet

Participant Code: **EC19**
 Researcher:
 Date:

ROLE TITLE LIST	Construct (1)		Contrast (2)																		
	7	6	5	4	3	2	1	Me	How I'd like to be	Me when symptom at worst	Me without symptom	My symptom if it were a person	Someone I know	Someone I know and dislike	Significant person I don't know	Significant person I know	Significant person I don't know	Significant person I know	Me as seen by others	How I would like others to see me	
1	STRENGTH	WEAKNESS	4	7	1	6	7	7	7	7	7	7	7	2	5	6	2	4	6	7	1
2	ENTHUSIASM	PESSIMISTIC	6	7	2	7	7	7	7	7	7	7	7	2	6	2	2	4	5	7	2
3	INTELLIGENT	STUPID	4	6	1	7	7	7	7	7	7	7	7	7	7	2	3	4	6	7	3
4	OBSTACLES/MAJOR	SMOOTH/HEALTHY	3	6	2	7	7	7	7	7	7	7	7	3	5	5	3	4	6	7	4
5	Fit	Unhealthy	5	7	2	4	7	7	7	7	7	7	7	1	6	5	4	5	6	7	5
6	POSITIVE	NEGATIVE	5	7	2	7	7	7	7	7	7	7	7	2	3	2	3	3	5	7	7
7	Smoothly/long	Jumpy/contrast	4	7	5	7	7	7	7	7	7	7	7	7	2	3	3	3	5	7	7
8	CONTROL/IN	RECOVERING	2	1	5	7	7	7	7	7	7	7	7	7	2	3	3	3	5	7	7
9	LAZY	GO GETTER	2	1	7	7	7	7	7	7	7	7	7	5	4	1	5	4	6	7	4
10	FRAIL	STRONG	3	1	6	7	7	7	7	7	7	7	7	2	2	6	6	7	6	7	1
11	ANXIOUS	CAREFREE	5	1	7	7	7	7	7	7	7	7	2	7	4	7	7	7	6	7	3
12	PARANOID	HAPPY	4	1	6	7	7	7	7	7	7	7	7	6	3	7	7	7	6	7	3
13	STAY CALM	HEALTHY	4	1	6	7	7	7	7	7	7	7	7	3	2	6	7	7	6	7	1

Appendix Bii: MYMOP-2

MYMOP2

Participant Code:

Date:

Demographic info (for research purposes):

Sex (M/F):

Employment Status:

Ethnicity:

Age:

Choose one or two symptoms (physical or mental) which bother you the most. Write them on the lines. Now consider how bad each symptom is, over the last week, and score it by circling your chosen number.

SYMPTOM 1: As good as it could be 0 1 2 3 4 5 6 As bad as it could be

.....

SYMPTOM 2: As good as it could be 0 1 2 3 4 5 6 As bad as it could be

.....

Now choose one activity (physical, social or mental) that is important to you, and that your problem makes difficult or prevents you doing. Score how bad it has been in the last week.

ACTIVITY: As bad as it could be 0 1 2 3 4 5 6 As bad as it could be

.....

Lastly how would you rate your general feeling of wellbeing during the last week?

As bad as it could be 0 1 2 3 4 5 6 As good as it could be

How long have you had Symptom 1, either all the time or on and off? Please circle:

0 - 4 weeks 4 - 12 weeks 3 months - 1 year 1 - 5 years over 5 years

Are you taking any medication FOR THIS PROBLEM ? Please circle: YES/NO

WHAT IS YOUR MAIN FORM OF CURRENT SUPPORT?

GAD-7

Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
1 Feeling nervous, anxious or on edge	0	1	2	3
2 Not being able to stop or control worrying	0	1	2	3
3 Worrying too much about different things	0	1	2	3
4 Trouble relaxing	0	1	2	3
5 Being so restless that it is hard to sit still	0	1	2	3
6 Becoming easily annoyed or irritable	0	1	2	3
7 Feeling afraid as if something awful might happen	0	1	2	3

A12 – GAD7 total score

PHQ- 9

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Not at all

- | | | |
|---|--|---|
| 1 | Little interest or pleasure in doing things | 0 |
| 2 | Feeling down, depressed, or hopeless | 0 |
| 3 | Trouble falling or staying asleep, or sleeping too much | 0 |
| 4 | Feeling tired or having little energy | 0 |
| 5 | Poor appetite or overeating | 0 |
| 6 | Feeling bad about yourself — or that you are a failure or have let yourself or your family down | 0 |
| 7 | Trouble concentrating on things, such as reading the newspaper or watching television | 0 |
| 8 | Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual | 0 |
| 9 | Thoughts that you would be better off dead or of hurting yourself in some way | 0 |

TOTAL SCORE:

Appendix C: participant information sheet

'A study with people experiencing persistent bodily symptoms for which tests, investigations and scans come back negative' (Study title)

Participant Information Sheet

Part 1: Introduction to the study

Why is this study being done?

The study is interested in understanding how the body contributes to a person's view of themselves and others, and how this relates to wellbeing. It will explore this for people who have a persisting physical symptom for which tests and scans come back negative and effective treatment has been problematic.

Why am I being asked to take part in this study?

You have been invited to this study because you have been experiencing a long-term symptom which has one or more of the following characteristics:

- has not been given a medical explanation
- affects your everyday life
- nothing that you have tried has provided relief
- has no medical diagnosis but results in increased stress or you feeling low.

Do I have to take part?

It is completely up to you whether or not you decide to take part in this study. Your consent will be sought at each step of the process. Agreeing to join the study does not mean that you have to complete it. You are free to withdraw at any stage without giving a reason. Your data will be removed from the study.

You are advised to let your GP know that you are taking part in this study. However, this is not essential and is your decision.

PLEASE NOTE: this study cannot reimburse any expenses relating to travel or time spent taking part in the study. The researcher will be flexible with regards to the location and timing of interviews to make taking part as convenient and cost-free as possible for you.

Part 2: The research procedure

What will I be asked to do?

Once you have read the information and if you are interested in taking part, you can contact the researcher directly by post, email or phone to opt-in. The researcher will then arrange with you a convenient time and location for the face to face interview.

At the face to face interview, the researcher will first ask you to complete a written consent form to say that you agree to take part in the study and that you are aware of your rights as a research participant. You will be asked to provide some information about yourself (e.g. age, sex, ethnicity) to help the research team know who is taking part in the study. You will then complete three brief, structured questionnaires with the guidance of the researcher. One of the questionnaires will ask you to identify a physical symptom that you have sought help for, and ask you to rate the severity and physical, social and emotional impact of this

symptom over the past week. The other two questionnaires (9-items and 7-items-long) will ask you to report on any symptoms of anxiety and depression that you may have experienced over the past couple of weeks.

Finally, the researcher will ask you to list some significant people in your life and will write these down on cards. They will hand you three cards at a time representing different people (such as myself, how I'd like to be, someone I dislike) and ask you to state what you think are important physical and personality differences between them. When you give us the name of a word that describes a difference, we will ask you what the opposite of that word is to you. We will continue to do this using three different cards at a time and then finally ask you to rate each person numerically according to some of the words you came up with. *You will not be required to write anything down in this part of the study. The Main Researcher will write down all your responses. There will not be any audio or video recording of interviews.*

This interview can involve multiple breaks as needed, and can be done across more than one meeting if doing it all at once would be too physically demanding.

When the interview is complete, you will be asked if you would like to be contacted for a possible follow-up study to the current study (e.g. after you have completed a course at Pathways2Wellbeing). This is not part of the current project and is entirely your choice.

What are potential advantages and disadvantages of taking part?

Taking part can be an interesting and stimulating experience, encouraging reflection on personal links between mind and body at a stage where you may not have had the opportunity to do this.

The face to face interview is expected to last between an hour and an hour and a half, which may present physical demands such as discomfort or tiredness. The researcher will try to make taking part as comfortable as possible, such as arranging the interview at a location where you will be comfortable, having breaks, and dividing up the interview across several meetings.

The content of the interviews may be of a personal nature, and there is a possibility that you may find some things upsetting to talk about. The researcher will support you during the interviews if you become upset and will offer further support through providing information about resources in your community if you wish. You may of course withdraw from the study at any point without any consequences and without giving a reason.

Part 3: Confidentiality and your rights

Who will know about my taking part in the study?

Only the research team at the University of Hertfordshire will be aware of your participation. You are encouraged to notify your GP if you are taking part. However, this is your choice.

What will happen to my data?

All data collected during the interview will be in written form (no audio or video recordings will be made of interviews). Your data will be kept securely in a locked storage space on the premises of the University of Hertfordshire, where only the research team has access, for up to five years. Any personal responses collected during interviews will be identified with participant-codes which we use to ensure that it is linked anonymous – meaning that your interview responses cannot be linked to any information that identifies who you are. Your contact details and linked-anonymous study data will be stored on password-protected documents, on encrypted storage devices located at the University of Hertfordshire or with the researcher. Your data will be stored securely for up to 5 years after which time it will be destroyed. If, at any point, the research team had concerns that the participant or another person were at risk to themselves or others, they may share your details with the relevant services, letting you know that they are doing this if appropriate.

What if I'm concerned or unhappy about some aspect of the study?

If you have any concerns about any aspect of this study, you should ask to speak to the Main Researcher, who will do their best to respond to any questions or questions.

Who has reviewed the study?

This research has been reviewed by The University of Hertfordshire, Health and Human Sciences Ethics Committee with Delegated Authority (protocol number: LMS/PGR/UH/02724)

WHAT YOU NEED TO DO NOW**If you would like to participate:**

Please let the researcher know that you would like to take part by doing one of the following:

emailing the researcher directly at t.sanders@herts.ac.uk

contacting the researcher by telephone on 07544790897

completing and returning the opt-in slip below to the return address.

If you are interested or unsure but would like to know more

You can fill in the response form below indicating that you would like to be contacted, or alternatively you can make direct contact with the researcher via email or phone (above) with any queries.

If you do not wish to take part in the study at the current time you do not need to do anything. You will not be contacted further.

OPT-IN FORM FOR PARTICIPATION IN THE RESEARCH

'A personal-construct study with persons experiencing persistent bodily symptoms for which tests, investigations and scans come back negative (MUS)' (Study title)

Please complete and return this form in the enclosed stamped and addressed envelope indicating with a tick whether you would like to a) take part in the study or alternatively b) if you would like to be contacted to find out more information. Thank you for your co-operation.

I confirm that I am interested in participating in the research study

I am unsure as to whether I would like to take part in the research at

this stage but would like someone to contact me to provide further information.

Name:

Best daytime contact telephone no:.....

I am/am not happy for a message to be left on this number (please delete as appropriate).

Please return completed forms to: Tom Sanders, Trainee Clinical Psychologist, 1F414 Health Research Building, College Lane Campus, University of Hertfordshire, Hatfield, AL10 9AB

Appendix D: Consent form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

'A study with people experiencing persistent bodily symptoms for which tests, investigations and scans come back negative' (Study title)

Main Researcher: Tom Sanders, Trainee Clinical Psychologist

Please tick or initial boxes

I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason

I agree to take part in the above study

I agree that my data gathered in this study may be stored (after it has been anonymised) in a confidential location within University of Hertfordshire for up to 5 years before it is destroyed.

I agree to my linked-anonymised data being used for future research

I understand that my data collected in the study may be looked at by the Main Researcher and Research tutor at University of Hertfordshire, from regulatory authorities where it is relevant to my taking part in this research.

Name of participant:

Date:

Signature:

Name of researcher:

Date:

Signature:

Protocol number: LMS/PGR/UH/02724

This study has been reviewed and approved by the University of Hertfordshire, Health and Human Science EDCA

Appendix E: letter of ethical approval

HEALTH AND HUMAN SCIENCES ECDA

ETHICS APPROVAL NOTIFICATION

TO Tom Sanders

CC Professor David Winter

FROM Dr Kim Goode, Health and Human Sciences, ECDA Vice Chairman

DATE 02/03/17

Protocol number: LMS/PGR/UH/02724

Title of study: Exploring identity self-constructs with people who experience physical symptoms which are medically unexplained

Your application for ethics approval has been accepted and approved by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

This approval is valid:

From: 02/03/17

To: 30/09/17

Additional workers: no additional workers named

Please note:

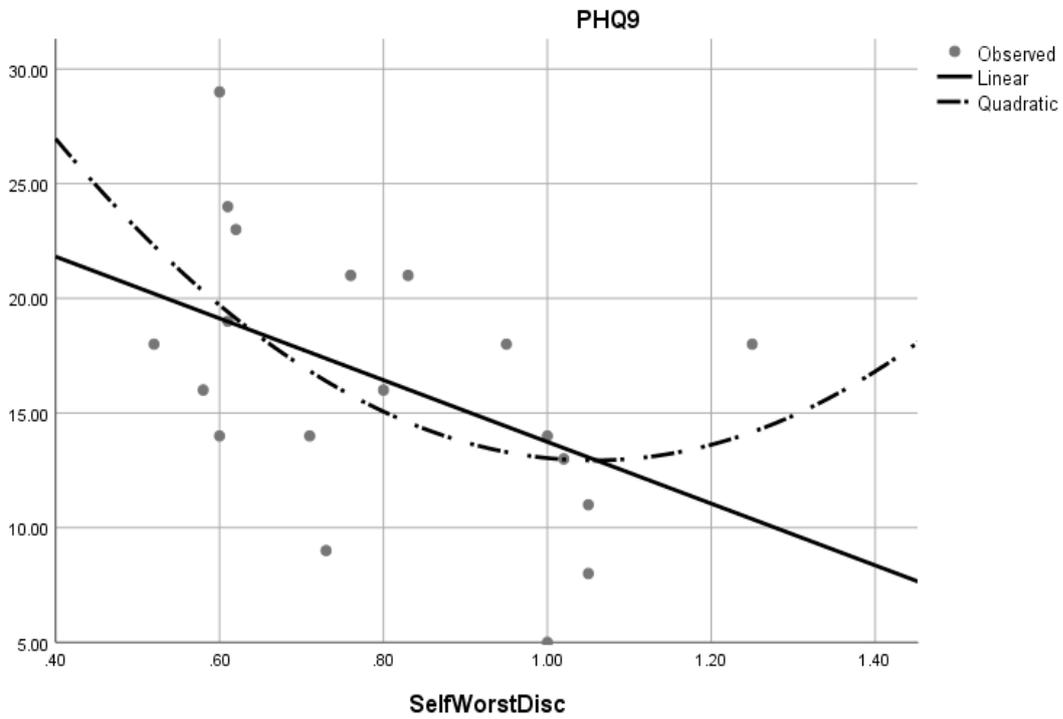
If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and your completed consent paperwork to this ECDA once your study is complete.

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1. Should you amend any aspect of your research, or wish to apply for an extension to your study, you will need your supervisor's approval and must complete and submit form EC2. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1 may need to be completed prior to the study being undertaken. Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately. Failure to report adverse circumstance/s would be considered misconduct.

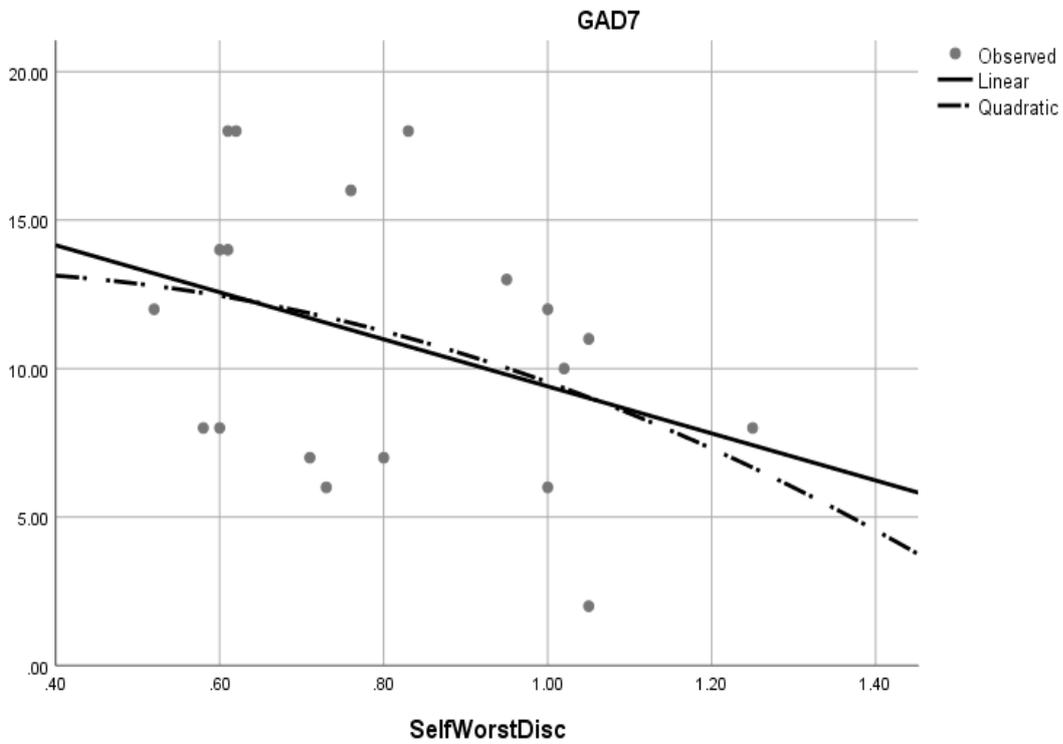
Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study. Students must include this Approval Notification with their submission.

Appendix F

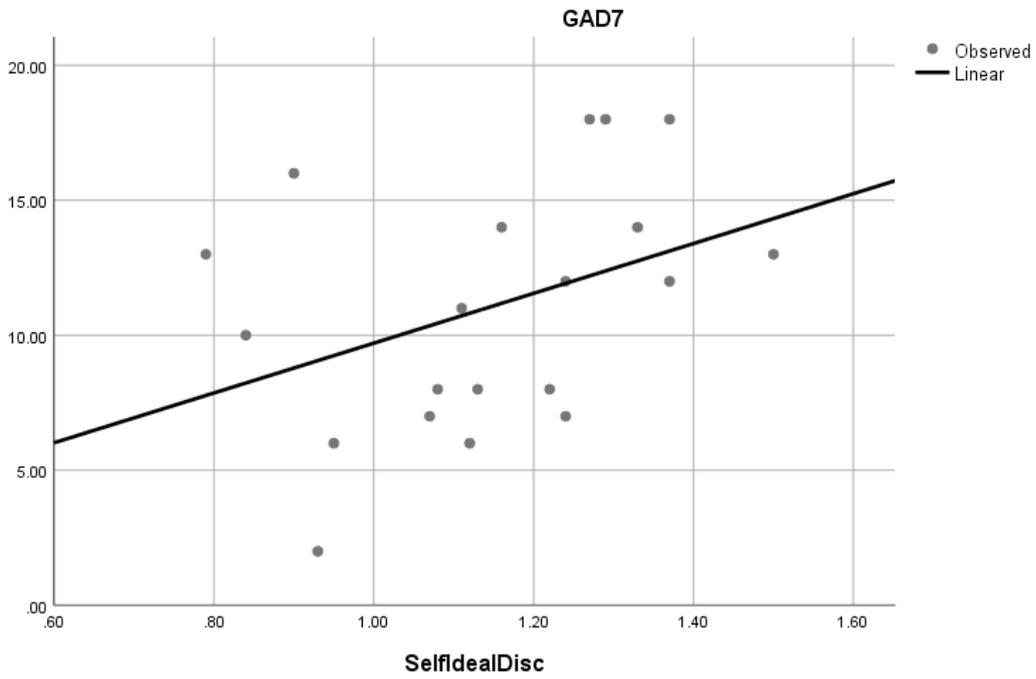
(i) scatter plot of relationship between distance between current self and self when symptoms are worst, and PHQ-9 scores



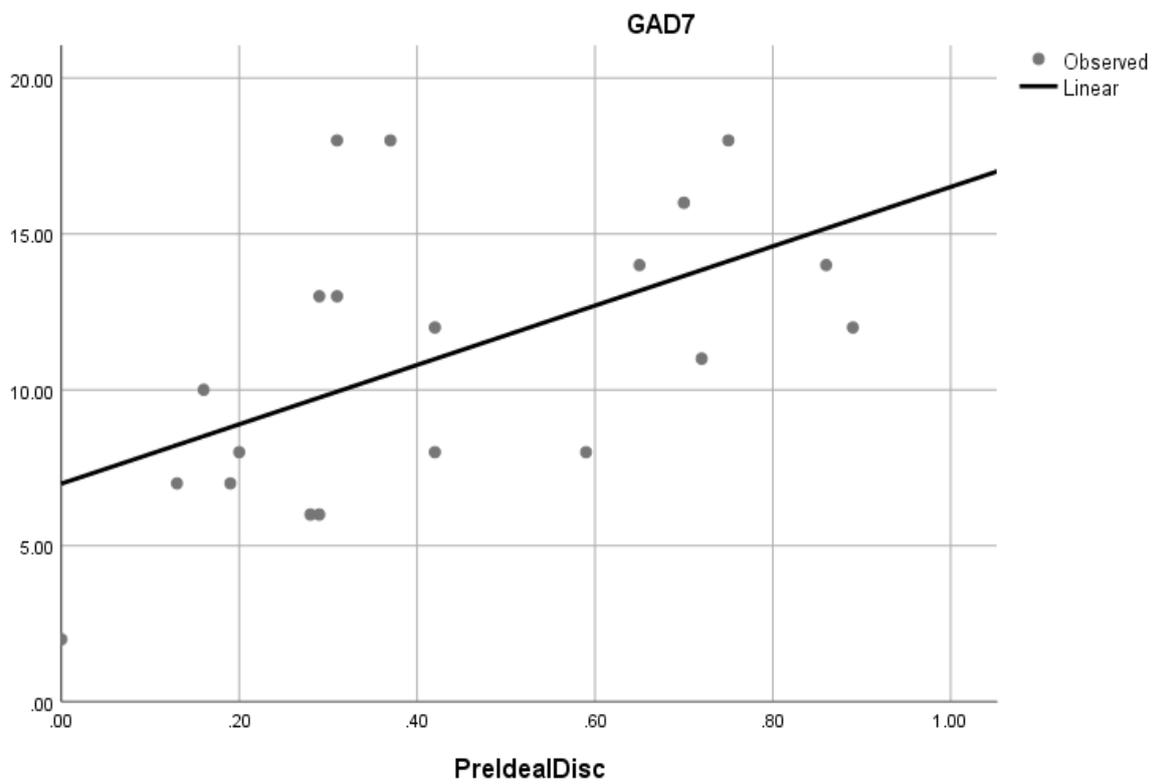
(ii) scatter plot showing relationship between distance between current self and self when symptoms are worst, and GAD-7 score



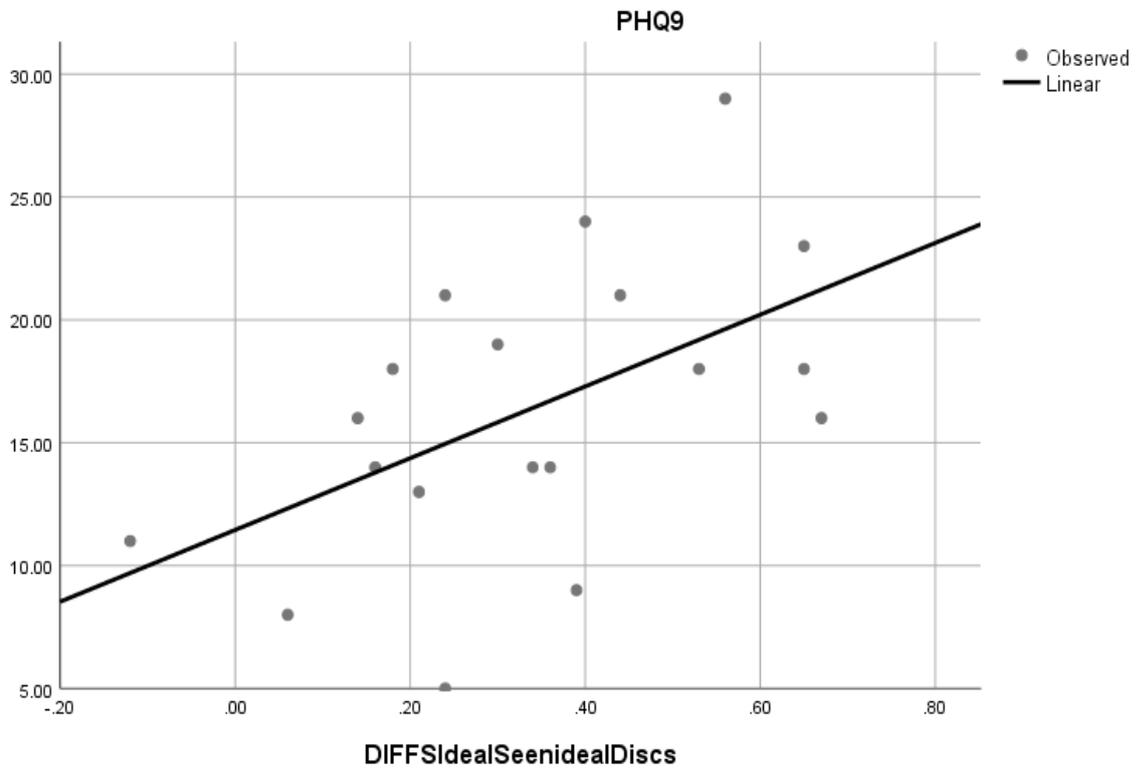
Appendix G: Scatter plot showing relationship between distance between current self and ideal self, and GAD-7



Appendix H: Scatter plot showing the relationship between the self before symptoms and the ideal self, and scores on the GAD-7



Appendix I: Scatter plot showing the relationship between the distance between the ideal self and the self as ideally seen by others, and scores on the PHQ-9.



Appendix J: Sentence form implicative dilemmas

Participant 1 (seen-as dilemmas)

I want to be seen as *strong, healthy, fit, and slim*, but if I am seen as being these things, then I will be seen as being *carefree* and not in pain. I would prefer people to see me as being *burdened* and *in pain*.

(possible emergent metaphors: this person characterised themselves and themselves as seen by others as being 'overweight'. The weight and health difficulties may be a way of construing being 'burdened' as opposed to 'carefree' people, who are 'happy' but also 'selfish')

Participant 2 (seen as dilemmas)

I want to be seen as *strong* and *outgoing*, but if I am seen this way by other people, then I will also be seen as *confident*. I prefer to be seen as *shy*.

Participant 3 (seen-as dilemmas)

I want to be seen as *energetic, sociable and reliable*, but if I am seen to be these things, then I will also be seen as *flexible (P), active and fake*. I would prefer to be seen as being *stiff and in pain, inactive and having integrity*.

(possible metaphor: there are contrasts between the body's flexibility and stiffness, and the person's desire to be reliably available for other (desired activity – socialising), an activity which this person might view as requiring some level of 'faking it' when symptoms are bad.)

Participant 5 (ideal self and seen-as dilemmas)

I want to be *free, young and energetic*, but that would mean being an *innocent* person, and I want to be (and be seen as being) *experienced*.

Participant 6 (ideal-self and seen-as dilemmas)

I want to be *exercising and healthy*, but that would mean being more *male*, and I would prefer to be (and be seen as) *female*.

[this person's dominant characterisation of themselves as seen by others was *female*.]

Participant 8 (ideal-self and seen-as dilemmas)

I want to be *energetic and alert*, but if that would mean being more *emotionally independent* and *irresponsible*, and I prefer to be (and be seen as) *steady/responsible and family oriented*.

(this person's desired activity was hillwalking and the construct *wanderlust-homely* was the least integrated with their construct system. A liked person was construed as being closer to the *wanderlust* but also *irresponsible*. The person may feel conflicted about feeling responsible versus a more self-centred desire of wanting to 'wander from home'.

Participant 13 (ideal-self and seen-as dilemmas)

I want to be more *muscular and overpowering (less passive)*, but this would mean being (and being seen as) *insensitive*, and I prefer to be (and be seen as) *caring*.

(Emerging metaphors: this person construed themselves as being *downtrodden* in relation to their symptom of 'all over pain/sensitivity'. The symptom was characterised as being *overpowering* as a person, as was this person's ex-partner. Being caring/sensitive may leave this person feeling vulnerable to being dominated by others in interactions.)

Participant 14 (seen as dilemmas)

I want to be seen as more *immobile, weak and poorly* by others, but that would mean being seen as more

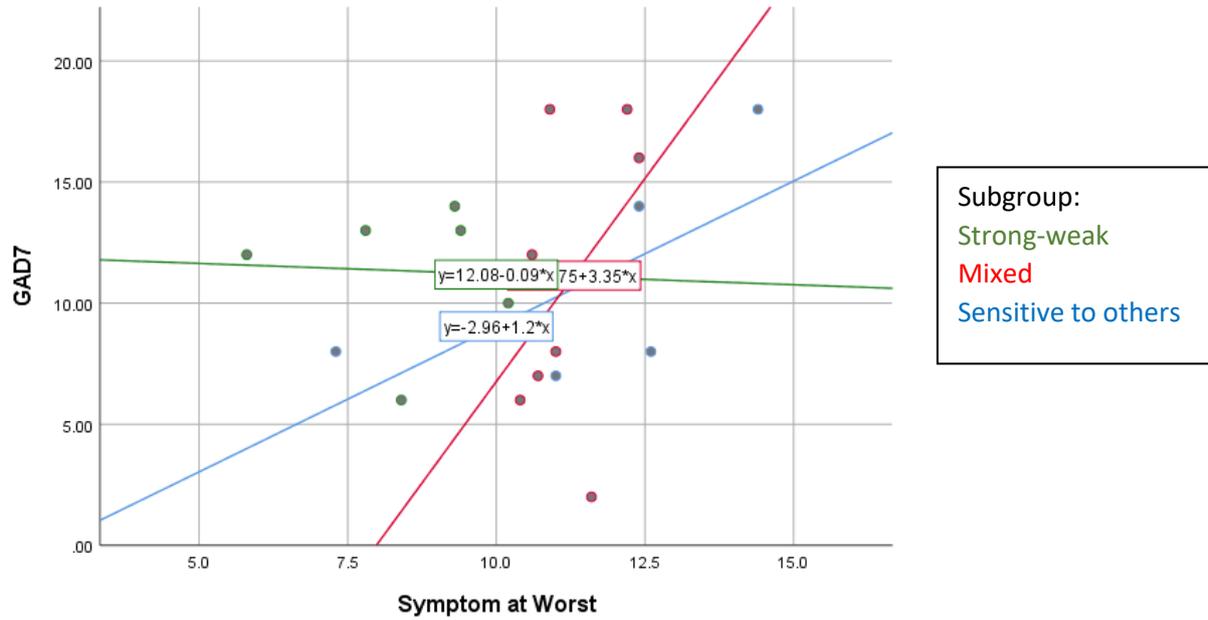
attention-seeking, selfish and unpleasant – and I prefer to be seen as being *self-satisfied, generous and pleasant*.

[being *selfish, unpleasant* and *arrogant* were qualities that correlated highly with the construct pole *male* of the physical construct *male-female*]

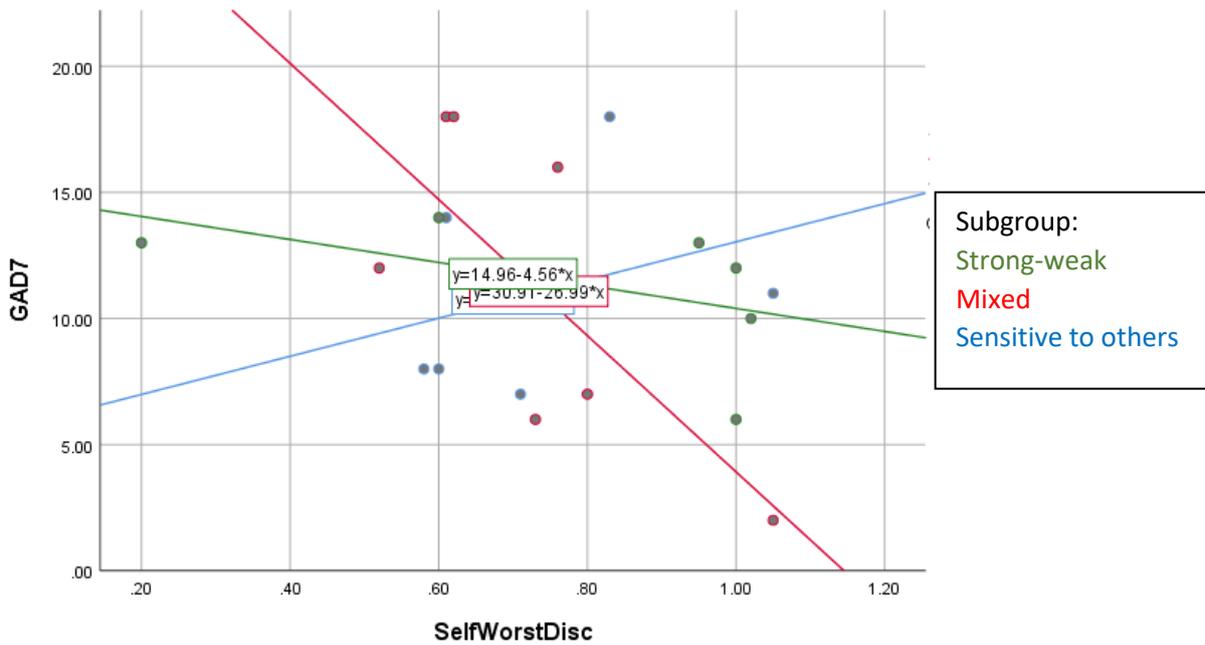
Appendix K: Most characterising construct for self-related elements, by subgroup

Subgroup	Self	Ideal-self	Symptoms	Pre-symptom	Symptom as person	Seen	Ideally seen	
Strong-Weak	Insecure	Strong	Worst weak	empowered	mean	debilitated	active	
	Tense	Optimistic	depressed	determined	desensitised	determined	optimistic	
	Disabled	Optimistic	incapacitated	athletic	pessimistic	fat	active	
	Crumbling	Resilient	weak	free	strong	Crumbling/weak	positive	
	Unfit	Well-kept	givesupeasily	Well-kept	givesupeasily	weak	Well-kept	
	Sloth	Positive	weak	carefree	controlling	encouraging	positive	
	Sensitive	Overweight	Content	frustrated	carefree	Scruffy/frustrated	heavy	slim
		Stiff, unhealthy	Flexible (S)	reclusive	reliable	Isolated	exhausted	humorous
		In pain (S)	Satisfied, healthy	lazy	satisfied	Lazy/miserable	Female	satisfied
		Wiped out (S)	alert	Slow/lazy	responsible	Bright, slow	Loungeing	alert
Fatigued (S)		organized	depressed	Switched on	Dumb	Slow	Switched on	
Poorly		Fit/able	poorly	Fit/able	Insensitive	Unhappy	Fit/able	
Mixed		Scared	Sexy	Lonely/sad	happy	Deceitful	Fat, crippled	caring
		Frustrated	Flexible/strong	weak	Strong	Strong	Young	Young/painfree
		Exhausted	Lively/creative	frustrated	Lively	Old, reserved	Static	lively
		Heavy	Up	isolated	Sociable	Heavy, strong	Heavy	up
	In pain	No pain	Not-speaking	Happy	Existing	Bedbound	loveslife	
	Tired (S)	Lively (S)	miserable	Energetic	Unsociable	Slim	healthy	
	Small	mature	No confidence	Weak	Arrogant, male	Inactive	mature	
	Easy-going	Not-nauseated	Pessimistic	Multitasker	Uncaring	sensitive	Not-nauseated	

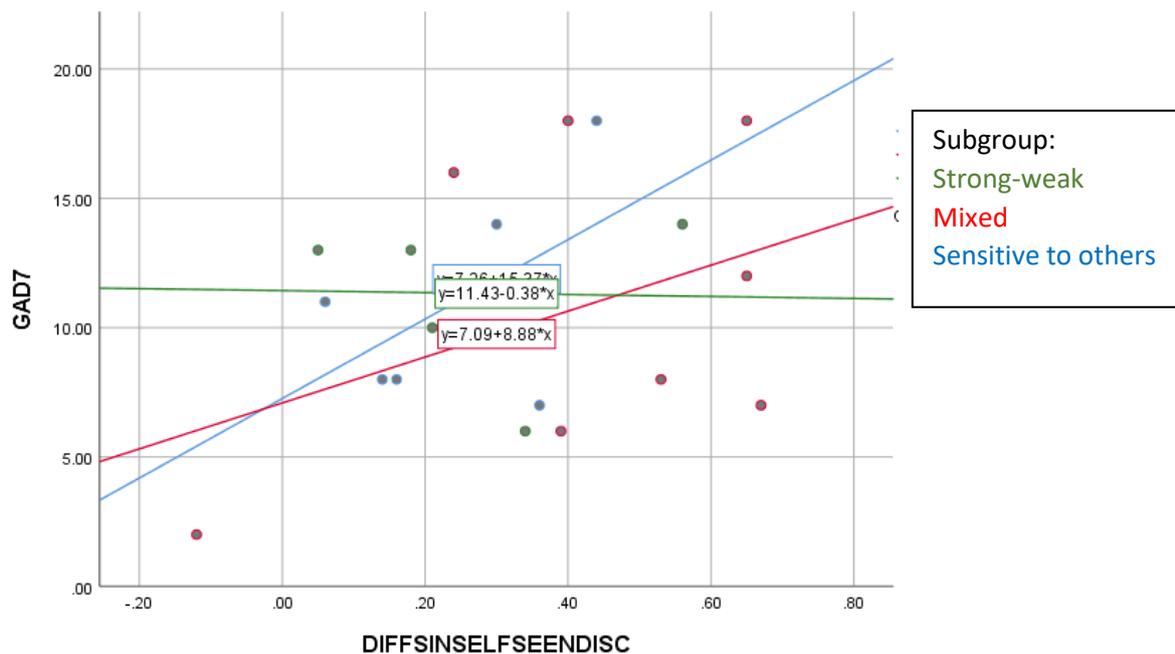
Appendix L: Scatter plot showing relationship between GAD-7 scores and the percentage conflict attributed to the self when symptoms are worst, for different subgroups



Appendix M: scatter plot showing relationship between distance between current self and self when symptoms are worst, and GAD-7 score, for different subgroups.

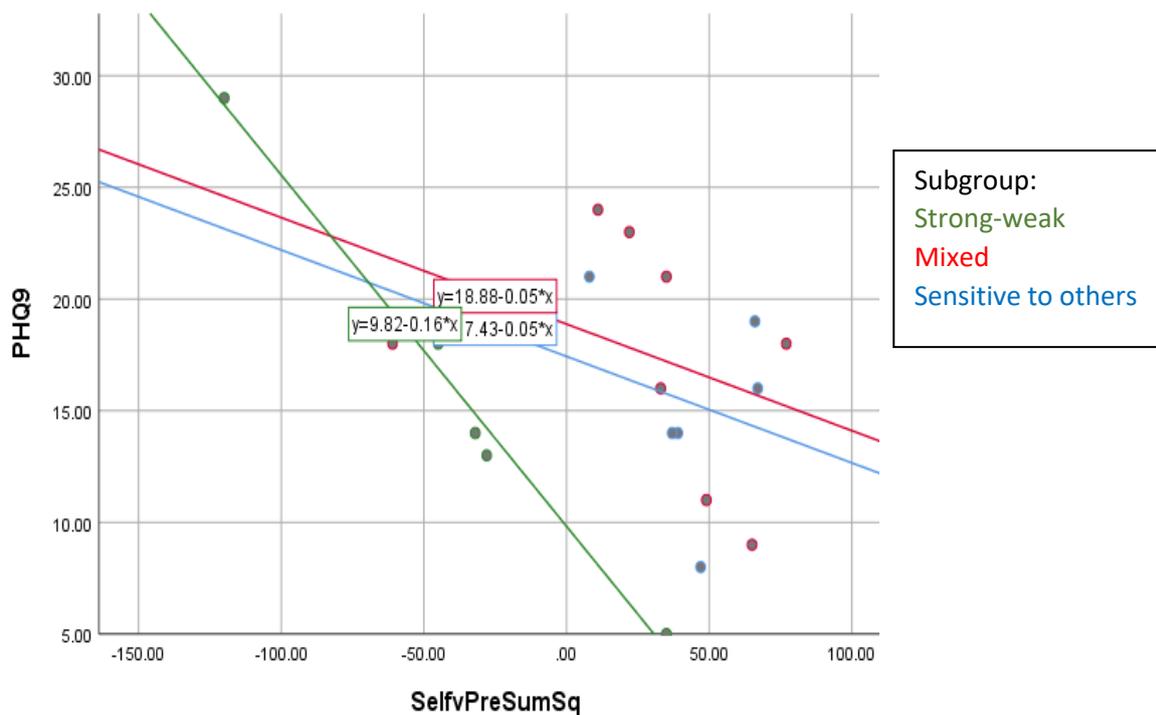


Appendix N: Scatter plot showing relationship between GAD-7 scores and difference between the distance between the current self and the ideal self, and the self as currently seen by others and the self as ideally seen by others, for different subgroups.

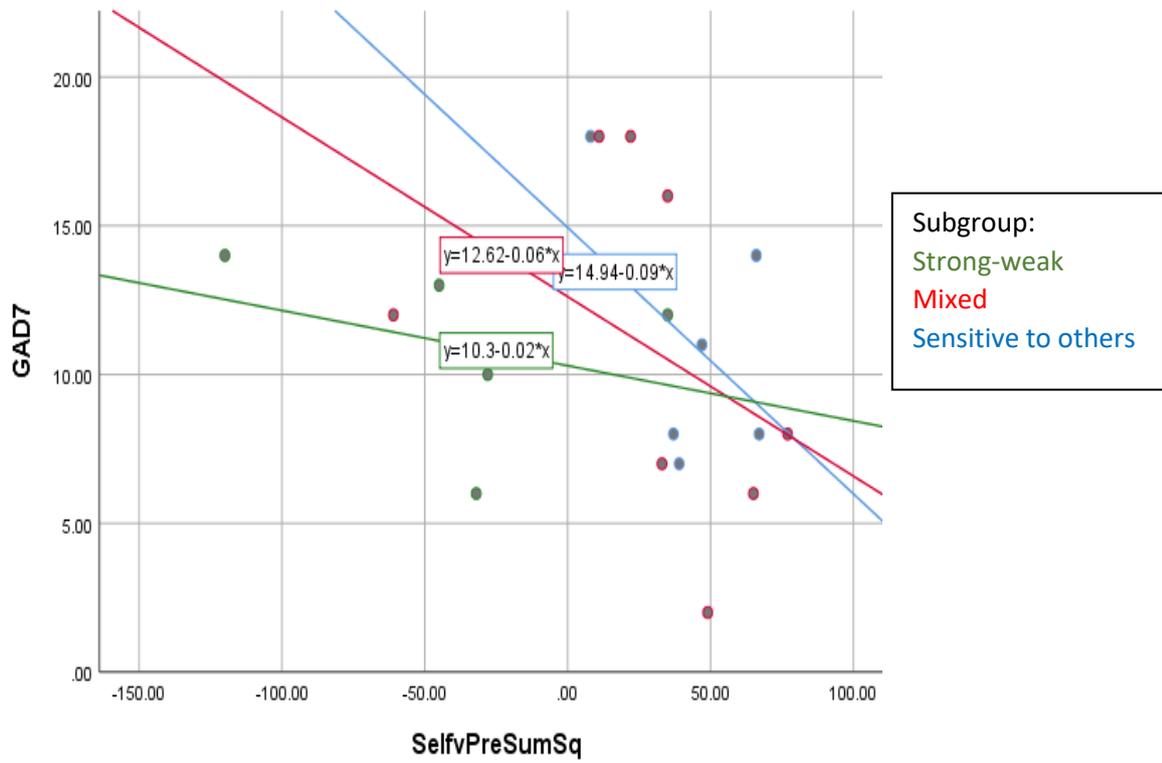


Appendix O

(i) scatter plot showing relationship between change percent sum squares difference from self before symptoms to current self, and PHQ-9, for different subgroups



(ii) scatter plot showing relationship between change in percent sum squares from the self before symptoms to the current self, and GAD-7 scores, for different subgroups



Glossary of key terms

Construing: the active process of exploring and finding meaning the world, as a mind-body unity

Constructs: usually given as word=pairs, a person's 'constructs' are the bipolar labels that reflect choices or alternatives in how they explore and make sense of the world. They are both the idiosyncratic ways of acting, and the channels which structure how incoming information is received.

Construct-system: the hierarchical arrangement of interrelating constructs, which may be split into components or subsystems of constructs that relate highly with one another. Individual constructs may be more or less integral to the construct system that the person has for their identity in relation to other persons.

Core self-constructs are constructs which are highly correlated to a number of other constructs relating to the self. Changes in core construing of self (e.g. *selfish --- kind*) have more implications for how the person construes themselves and how they feel they will be construed by others. Peripheral construing of self and others (e.g. *prefers marmalade to raspberry jam --- prefers raspberry jam to marmalade*) may change without as many implications. Core constructs which reflect the core values of the person are described as being '**superordinate**' in the construct system (e.g. *altruistic --- selfish*). These may hierarchically relate to 'subordinate' constructs, which are the more concrete forms of construing stemming from superordinate constructs (e.g. '*helps out at charity events---uses their time to pursue own interests*').

Threat: Threat involves the anticipation of imminent changes to one's construing.

Anxiety: anxiety is experienced when one's construct system is no longer adequate at making sense of events.

Guilt: the feeling that accompanies construing oneself as being discrepant from one's core 'roles' or constructions. A person who construed themselves as 'timid' might feel guilt when they construe their behaviour as deviating from this, e.g. shouting at a friend who arrives late to the cinema, causing them both miss the start of the film.

Hostility: Hostility is a means of protecting threatened constructs by seeking out experiences which confirm or validate construing. An example might be faking an illness to avoid taking an exam that one had not revised for, in order to protect the view of oneself as *academically successful* as opposed to a *failure*. The construction of self is validated by not being tested

Constriction is a means of protecting the construct system and alleviating anxiety by withdrawal to a more restricted world where one's constructs have meaning. A person who was conflicted and unsure about their identity in romantic relationships may opt for celibacy as a means of having a more solid sense of self.

Aggression is a means of elaborating identity and seeking validation. A man who is unsure of whether they were a 'masculine' person might spend a lot of time developing their physique at the gym to establish themselves as masculine. This example might also involve constriction if the person's 'masculinity' had been invalidated on a construct related to masculinity that is orthogonal to physical strength (e.g. romantic success).

Conflict is conceptualised in different ways throughout psychological literature. In PCP, conflict has been conceptualised using the 'implicative dilemmas' where desired changes in self-construing simultaneously imply undesired changes in another areas of self-construing (Feixas & Saul, 2000),

and as inconsistencies in how constructs are used ('triangular inequalities') (Bell, 2004). Conflict may be considered to internally threaten the construct system. However, this may be a positive thing: for example, implicative dilemmas protect a person from 'nuclear' changes (Feixas & Villegas, 1993) (rather like turning the dial on a kaleidoscope shifts the entire pattern of relationships between the lines). Inconsistency could also be a sign of complexity, flexibility and inclusiveness in one's construing, if they can be tolerated.

Habitus: this term refers to reflexive embodied habits that Bourdieu (1980) believed were expressions of a social identity and status hierarchies (e.g. class, education, moral beliefs). An example might be 'sitting upright at the table' rather than 'slouching' – a body posture which is encouraged in certain social circles more than others. Albert Scheflen (1973) writes about how very subtle inflections and body movements are used constantly throughout social interactions, meta-communicating about the relationship between the participants.

Enmeshment: the extent to which the various constructs for the self are contingent upon the status of the symptom. Enmeshment of self with symptoms has been hypothesised with those who experience chronic pain (Pincus & Morley, 2001).

Dissociation: 'dissociation' has been used to denote a psychological process where the person is not processing information in the usual way (e.g. Brown, 2013). This has been associated with traumatic experiences. The term is used in this study to suggest that one set of constructs, which may be verbal in nature, are not helpful for the person in elaborating other aspects of self and others. For example, the symptom construct and the body may embody certain preverbal constructs about the self. However, the (primarily verbal) construct system that the person has for making sense of themselves and others may be 'dissociated' in the sense of being disconnected from, or 'not well integrated' with, these preverbal and embodied constructs (Lin & Payne, 2014; Metcalfe, 1997). Rather like with traumas, where the person struggles to make sense of the events from within their existing construct system, the person struggles to integrate different aspects of their identity.