

Science and Practice of Transdiagnostic CBT: A Perceptual Control Theory (PCT) Approach

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The scientific and practical justifications for transdiagnostic CBT are well known and yet there is no consensus on the theoretical approach that should inform it. In this article, we explain the scientific and practical benefits of using Perceptual Control Theory (PCT) by introducing the theory, discussing how it explains the maintenance of psychological distress, the different ways that distress is manifested across disorders, and reviewing evidence for the theory and its applications. We explain how PCT can inform existing active ingredients of CBT such as exposure, behavioral activation, decentering, formulation, and the therapeutic alliance. We also introduce Method of Levels therapy as a transdiagnostic CBT informed by PCT, and describe the implications for service organization and modes of delivery, understanding help-seeking, and recovery. We conclude by considering limitations and directions for future developments.

We are writing this article as a tribute to William T. Powers who developed the theory we describe here. He passed away on Friday May 24, 2013 in Lafayette, Colorado at the age of 86. We hope that this article does justice to the depth and breadth of his theory, and to the scientific, judicious, and philanthropic spirit

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within which he developed his ideas. Bill Powers did not practice as a therapist, but gave us ongoing encouragement in our work. In this article, we describe our use of Perceptual Control Theory (PCT; Powers, 1973, 2005, 2008; Powers, Clark, & McFarland, 1960) to guide therapeutic principles within CBT. We propose that it can explain the active ingredients of change in psychotherapy, and generate effective and efficient interventions across presenting problems, service contexts, modes of delivery, and levels of severity. While the basic science of PCT is well-founded (Marken & Mansell, 2013; McClelland, 2004), research on its implications for psychological distress and its treatment is still emerging. Therefore, in the current article we report on this evidence and focus on the theoretical foundations and practice implications. In particular, PCT has informed the development of a transdiagnostic cognitive therapy, known as Method of Levels (Carey, 2006), that we describe in detail.

It is commonly agreed that Cognitive Behavioral Therapy (CBT) began in the 1970s as a direct fusion of cognitive and behavioral therapies (for a review, see Rachman, 1997). This occurred despite there being no consensus regarding the way in which this fusion of cognitive and behavioral theories should be conceptualized (Mansell, 2005; Teasdale, 1997). Maybe for this reason, leading up to the 21st century, CBT has emerged as a family of related cognitive and behavioral interventions, many of which explicitly draw upon a wider theoretical basis (Mansell, 2008; Mansell & Taylor, 2012). This eclectic mixture provides clear challenges for theoretical coherence, clarity in explaining CBT to others, and cohesion between different groups within CBT (Mansell, 2008). One response to this contemporary dilemma is to return to basic science to identify a theory that explains how effective psychological interventions work (Kazdin, 2007; Salkovskis, 2002). There is a compelling case that future developments in psychological interventions need to identify shared empirically-supported principles (ESPs), in contrast to the proliferation of different empirically supported therapies (Rosen & Davison, 2003). ESPs that are derived from a coherent theory may have the capacity to lead to more effective and efficient therapies.

CBT has traditionally been developed within a disorder-specific approach. This is based on the premise that it is important to distinguish between different disorders in order to implement a therapy that is effective. The evidence for the efficacy of the disorder-specific approach is considerable (e.g., Hofmann & Smits, 2008; James, Soler, & Weatherall, 2009). Nevertheless, there are recognized challenges of applying this approach to practice. Clients often experience psychological problems that do not accurately fit into one diagnostic category because of comorbidity (e.g., Kessler, Chiu, Demler, Merikangas, & Walters, 2005). Furthermore, the efficiency of requiring a diagnostic assessment in routine practice and training therapists in multiple different disorder-based models has been questioned (Mansell, Harvey, Watkins, & Shafran, 2009). Therefore, several authors have pointed to the merits of targeting cognitive and behavioral processes that are shared across disorders (Craske, 2012; Harvey, Watkins, Mansell, & Shafran, 2004; Mansell et al., 2009; McHugh, Murray, & Barlow, 2009; McManus, Shafran, & Cooper, 2010). Harvey et al. (2004) reviewed research across adult Axis I

disorders and found at least 12 transdiagnostic processes, including safety-seeking behaviors, thought suppression, rumination, self-focused attention, and metacognitive beliefs (see also Ingram, 1990; Purdon, 1999).

The next step within the transdiagnostic approach is to identify a theoretical framework to address these processes. Yet, the choice is wide and there is no clear consensus (for a full review, see Mansell et al., 2009). Nevertheless, taking a purely empirical stance, it is clear that the transdiagnostic processes overlap considerably and may represent a very small number of underlying components (e.g., Aldao & Nolen-Hoeksema, 2010; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Field & Cartwright-Hatton, 2008; Patel, Mansell, & Veale, *in press*). For example, in a prospective nonclinical study and a study of patients with chronic physical illness, a single factor combining worry, thought suppression, and experiential avoidance was found to account for as much variance in anxiety and depression as a separate process model (Bird, Mansell, Dickens, & Tai, 2013). In the current review, we introduce one theoretical approach to account for the shared features of transdiagnostic processes, their utilization within existing CBT, and the development of a novel form of cognitive therapy known as Method of Levels.

PERCEPTUAL CONTROL THEORY

Perceptual Control Theory (PCT; Powers et al., 1960; Powers, 1973, 2005, 2008) describes the process of control in living organisms. The key terms and components of the theory are explained in Table 1, and described in more detail below. Central to PCT is the concept of control. PCT states that people attempt to control their perceived environment so they can make their experiences match their internal goal states or reference values. Examples are diverse and include the temperature we like our food, the distance we prefer to stand from someone, and the amount of praise we desire. Current perception is constantly compared against a goal or standard and actions occur dynamically and concurrently to minimize discrepancies in an ongoing, continuous process (see Figure 1; Carey, 2008b). For example, to keep a comfortable distance from someone we are talking to, we would need to move further away if the other person comes closer than our preferred distance, but we would need to move closer if they exceed our preferred distance. In this way an equilibrium distance is maintained. This is called a negative feedback loop because the discrepancies are fed back to the environment through action to act against the elements of the environment that lead experience to deviate from the desired value. The loop is analogous to the homeostatic control systems in the body that maintain physiological variables (e.g., body temperature, blood glucose) within an ideal range. The PCT model contrasts starkly with the traditional approach put forward in traditional cognitive and behavioral models whereby a stimulus is processed to trigger an observable behavior, and no feedback system to regulate internal goals states is explicitly implicated.

PCT has been supported by over 50 studies, largely within the field of human performance, but also including animal studies and computer models (for

TABLE 1. Definitions of Key Terms in Perceptual Control Theory

Name	Definition	Example
Control	Keeping a perception as close as possible to a desired value	Driving in a straight line; Keeping feelings of anxiety at zero; Being a worthwhile person
Reference value or goal (state)	The desired, or wanted, amount of an experience	A line being straight; Anxiety being zero; Self-worth level at worthwhile
Error or discrepancy	The compared difference between the wanted and the experienced value	Driving in wonky line; Anxiety more than one can tolerate; Feeling 'not worthwhile'
(Environmental) disturbance	A feature of the environment that creates error	Uneven road surface; A threatening person or object; Losing one's job
Behavior or action	What we do to reduce error and maintain control	Move steering wheel left or right; Avoiding eye contact, drinking, suppressing thoughts, etc., to feel less anxious; Engage in acts of mastery to feel worthwhile
Negative feedback loop/control system	The circular pathway between perception, comparison, action, and the environment that maintains control	In a dynamic way, as one perceives a deviation from a straight line while driving, this drives the intensity and direction of action so as to counteract a disturbance and bring the car back in line
Gain (error sensitivity)	Error multiplied by gain determines the degree of output going into a behavior. It is one example of a 'property' of a negative feedback loop	An expert driver would have a high gain for driving in a straight line; The effort put into keeping anxiety low; The 'motivation' to engage in activities to enhance self-worth
(Control/goal) hierarchy	The branched layering of negative feedback loops so that complex control can occur	In order to uphold the principle of being worthwhile one may try to carry out a range of activities, including driving to see a friend, and keeping anxiety low, in turn branch into a range of methods and means
Higher level goals/systems	A layer in the hierarchy that is above the layer that is being described; Answers the Why? question	When keeping anxiety at zero, this may serve the higher level goal of trying to feel safe
Lower level goals/systems (sub-goals)	A layer in the hierarchy that is below the layer that is being described. Answers the How? question	Keeping anxiety as low as zero may be achieved through a range of lower level goals such as to keep upsetting thoughts outside awareness and to keep changing the topic of conversation
(Goal) conflict	The attempt to control an experience with reference to two (or more) opposing reference values	To try to drive straight and go left at the same time; To try not to feel anxious and also to try to face one's fears that bring on feelings of nervousness
Higher level goal conflict	The two (or more) higher level goals that are setting the incompatible reference values for lower level systems	In the anxiety example, the person may be trying to feel safe by trying to keep anxiety at zero but at the same time they know they need to experience some anxiety to face their fears and be normal
Reorganization	The process through which the properties of control systems change in order to restore and enhance control. It occurs at the focus of current awareness	A driver concentrates on the direction of their driving and increases skill over time; A person trying hard to not feel anxious may simply get more sensitive to change in anxiety. However, if they focus awareness on the higher level goals that are in conflict, then they realize other ways to feel safe and be a normal person

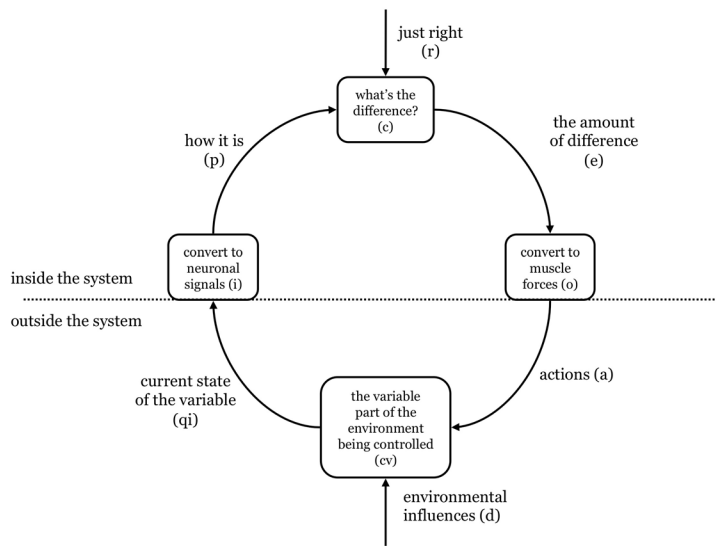


FIGURE 1. The closed loop is the basic unit of control within PCT.
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a review, see Marken & Mansell, 2013; McClelland, 2004; Pellis & Bell, 2011). Classically, many of these studies require a participant to keep some aspect of their environment ‘on target’ and use their actions to dynamically eliminate aspects of their environment that would lead them away from their goal. A classic example—the tracking task—entails using a computer mouse or joystick to keep a cursor vertically aligned with a moving bar on a computer screen. However, this approach has also been applied to other variables, such as maintaining a specific sequence of shapes on the screen (Marken, Mansell, & Khatib, 2013), or keeping a preferred distance from another person during a conversation (Mansell, Rogers, Wood, & Marken, 2013). Consistently, and across a wide variety of tasks, participants manage to do this to the extent that the perception (a stimulus in traditional terms) they are controlling (e.g., to keep a cursor aligned) has no direct effect on their behavior, indicated by low correlations between the stimulus and the behavior. Thus, a PCT model is favored in contrast to the standard model proposed by existing theories that would predict a close correlation between stimulus and behavior. A separate strand of research provides emerging support for some of the components of PCT at a neurodevelopmental level (for reviews, see Cools, 1985; Grawe, 2007; Mansell, 2010; Pellis & Bell, 2011; Plooi, 1984). Indeed, the process of negative feedback is understood as a crucial process of maintaining control at the synaptic level (for a review, see Turrigiano, 2007). Thus, negative feedback can be considered as a fundamental principle of a biopsychosocial approach (Carey, Mansell, & Tai, 2014).

PCT states that there are multiple control systems that are hierarchically organized and these explain how complex skills are managed, and personal goals are achieved. Higher-level systems (e.g., constant social support) set reference values of lower-level systems (e.g., lots of good friends), which in turn cascade to lower

levels becoming increasingly more concrete and specific (e.g., phone a friend after work, look up their number at lunch time). Altogether, Powers (1998) has specified eleven levels. For the purposes of this review, it is important to note that some of these levels may approximate to terms in other theories, such as needs, desires, wants, values, rules, standards, beliefs, principles, and ideal selves. Yet, PCT is unique in its attempt to explain what is perceived at each level and how these levels function together through negative feedback.

PCT assumes conflict as it can occur in a social context, given that individuals can have different desired states with regard to a perceived feature of the social situation that is important to them. For example, people who like to feel and express strong emotions can be encouraged to suppress these emotions by people with lower levels of emotional expression as their goal. In these instances, conflict can cause instabilities that are noticeable at a social level (Mansell, 2003; McClelland, 2004). Yet conflict is just as important within the individual. According to PCT, loss of control is often caused by the pursuit of two or more goals that conflict with each other (Carey, 2006, 2008a; Mansell, 2005; Powers, 1973, 2005). Examples of conflicting systems would be a system that specified a large amount of autonomy or independence operating alongside a system that specified a large amount of social affiliation and interaction; or a system that sets a reference to constantly praise one's self and a system that is set to constantly criticize oneself. When systems are in conflict, fluctuation between the goals results, since achieving one goal necessarily means not achieving the other. The more fundamental the goals that are inhibited in this way (e.g., goals related to feeling worthwhile, getting a certain amount of sleep, or being sane), the greater the psychological distress (Mansell, 2012).

PCT proposes that recovery from conflict and distress occurs through reorganization. This is intrinsic learning process that involves trial-and-error learning, and that seeks to re-establish control (Marken & Powers, 1989). This might be experienced as changing one's priorities, having an insight or shifting perspectives on a problem. According to PCT, full long-term recovery requires that reorganization occurs at the source of the conflict(s), or recovery may be short-lived, and this requires current awareness. In our application of PCT to therapy, we assume that effective interventions target this reorganization process. Psychological distress is maintained, in contrast, that factors that limit awareness and attentional processing, causing persisting goal conflict that escalates loss of control (Mansell, Carey, & Tai, 2012).. Transdiagnostic processes such as thought suppression, worry, and safety seeking may be detrimental for this very reason, and a PCT account explains why regaining control appears to be a transdiagnostic factor associated with recovery (Gallagher, Naragon-Gainey, & Brown, 2014).

AN INTEGRATIVE THEORETICAL FRAMEWORK

Table 2 shows ways that PCT can contribute to the science and practice of transdiagnostic CBT.

TABLE 2. Contributions from PCT to the Transdiagnostic Elements in CBT

Domain	Topic	Contributions	Example References
Unified theoretical framework	Theory	A core tenet that behavior is the control of perception and a biopsychosocial architecture for modelling behavior	Powers et al. (1960); Powers, (1973, 2008); Carey, Mansell, & Tai (2014)
	Evidence	A range of reviews of key empirical papers that support the theory	Marken & Mansell (2013); McClelland (2004); Pellis & Bell (2011)
	Core mechanism	Proposes that higher level goal conflict that remains outside awareness maintains psychological distress	Carey (2006); Mansell (2005); Powers (1973)
	Disorder-specific presentations	Propose an explanation of how different disorders present differently and yet share a core mechanism	Hyland (1987); Johnson (2009); Mansell (2005, 2010); Mansell & Carey (2013); Carey, Mansell, Tai, & Turkington (2014)
Transdiagnostic explanation of psychological distress	Quantitative Research	Emerging evidence that conflict between personally important goals is associated with distress and symptoms	Kelly et al. (2011, 2012, 2013); Reid (2009)
	Qualitative Research	Qualitative analysis across different mental health problems revealing themes of processes behind distress and recovery that are consistent with a PCT account	Carey et al. (2007); Gianakis & Carey (2011); Higginson & Mansell (2008); Stevenson-Taylor & Mansell (2012)
	Integrative framework	Provides an explanation of the active ingredient in therapy	Carey (2006); Mansell (2011)
Implications for components of CBT	Dismantling	Challenges ethos of dismantling studies	Carey & Mansell (2009)
	Goal hierarchy	Provides a parallel of goal hierarchies across different theories	Higginson et al. (2011); Watkins (2011)
	Formulation	Allows mapping of goal hierarchies and goal conflict across different problems. Interventions targeted at different levels of the hierarchy	Bird et al. (2009); Spratt & Carey (2009); Mansell (2012)
	Therapeutic relationship	Explains the components of effective relationships that allow a client to talk freely about their problems in order to address them	Carey (2006); Carey et al. (2012); Mansell (2012); McEvoy, Baker et al. (2012)
Implications for help-seeking and service delivery	Exposure	Considers client-directed exposure to previously avoided experiences as a shared process across psychological therapies	Brady & Raines (2009); Carey (2011)
	Behavioral activation	Emphasizes client's own control and elicitation of their higher level goals	McEvoy et al. (2013)
	Novel Transdiagnostic Intervention	Method of Levels Therapy uses questioning to shift and sustain awareness to higher level goals that drive conflict	Carey (2006, 2008b); Mansell, Carey, & Tai (2012)
	Therapy delivery	Explains the benefits of giving clients control over the duration, number and frequency of therapy sessions	Carey (2005, 2006); Carey & Mullan (2007, 2008); Carey & Spratt (2009)
Implications for help-seeking and service delivery	Ambivalence over help-seeking	Fear of loss of control over valued goals conflicts with goals to seek help	Murphy et al. (2012, in press); Schauman & Mansell (2012)
	Interventions across modalities and settings	Computerized interventions, group-intervention, low intensity primary care services, dementia, crisis service, inpatient psychiatric wards	Gaffney et al. (in press); Lazare (2012); McEvoy, Law et al. (2013); McEvoy & Plant (2014); Morris et al. (2013)

First, it can explain differences as well as similarities between disorders. It is important that the transdiagnostic approach does not discount the consistent observation that people with different disorders typically present with different experiences and symptoms (Harvey et al., 2004; Mansell et al., 2009). Therefore, an explanation is required for how the same processes might underlie distress across disorders and yet present differently. To answer this, PCT provides one transdiagnostic mechanism: the loss of control resulting from conflict between high level goals that are outside awareness. It then applies this mechanism across a wide variety of presentations, such as phobias (Mansell, 2005), obsessive-compulsive disorder (Pitman, 1987), depression (Hyland, 1987), addiction (Webb, Sniechotta, & Michie, 2010), bipolar disorder (Mansell, 2010), psychosis (Carey, Mansell, Tai, & Turkington, 2014; Tai, 2009), and dissociative disorders (Johnson, 2009; Mansell & Carey, 2013). In each presentation, the conflicting goals might be different (e.g., facing versus avoiding feared objects in phobias, incompatible self-states in bipolar disorder), and the effects of loss of control also might appear different (e.g., compulsive behavior in OCD, auditory hallucinations in psychosis, loss of motivation in depression). Yet, as stated above, it is the same core process of goal conflict outside awareness that causes and maintains distress. This indicates that the therapist does not need to apply a different model to each disorder, despite the notable differences in presentation. We shall elaborate on this with examples when describing Method of Levels. A number of authors have elaborated on the capacity for PCT to integrate the key features of other psychological theories (Carver & Scheier, 1981; Goldstein, White, & Powers, 2011; Grawe, 2004; Higginson, Mansell, & Wood, 2011; Mansell, 2005; Watkins, 2011; Webb et al., 2010). Carver and Scheier (1981) are well known for their initial attempt to introduce Powers' work into social and clinical psychology. They described the concept of the negative feedback loop and the control hierarchy but omitted key features of PCT. First, they continue to propose that individuals regulate their behavior and yet the central premise of PCT, and the workings of the negative feedback loop, show that perception is controlled by behavior. Second, they omit the importance of conflict in loss of control and the process of reorganization in restoring control. Third, their approach therefore has not generated a psychological intervention of the kind described here.

Contemporary reviews have examined how the control hierarchy in PCT has parallels with hierarchies in other theories such as the goal hierarchies used in social psychology (Watkins, 2011) and the cognitive hierarchy of core beliefs, dysfunctional attitudes, and negative automatic thoughts of Beck's approach (Higginson et al., 2011). Moreover, PCT questions the notion that therapies can be easily distinguished (e.g., Longmore & Worrell, 2007). According to PCT, all behavior is a means of achieving inner purposes for the individual as part of a continuous loop involving goals, actions, the environment, and perceptions. Because the system functions as a dynamic, integrated unit, behaviors cannot occur in isolation and therefore behavioral techniques cannot be dismantled from their inner mental underpinnings, despite apparent attempts to do so (Carey & Mansell, 2009). Given its integrative viewpoint, and its origins prior to the development of

CBT, a PCT approach acknowledges and values the contributions of first, second, and third wave CBT, but does not align itself with any one specific wave of CBT.

Similarly, PCT provides an original perspective on the so-called Dodo Bird effect that claims no difference in effect sizes between psychotherapies (Luborsky et al., 2002; Wampold et al., 1997). The findings that provide support for the Dodo Bird effect seem to co-occur with indications that certain therapies, such as CBT for certain anxiety disorders, are more effective than other equally credible therapies within certain contexts (e.g., Butler, Chapman, Forman, & Beck, 2006; Hunsley & Di Giulio, 2002; Tolin, 2010). At present, existing accounts are polarized between a stance that all therapies are equally effective and a stance that CBT is superior. A PCT account resolves these contrasting views. It proposes that a common component underlies different mental health problems (goal conflict maintained outside awareness) and that CBT is most effective when it addresses this process. Therefore, the core process of psychological change operates to varying degrees within the wide range of effective psychological interventions that are used. Factors such as therapist adherence, client's readiness for therapy, duration of intervention, and the service context moderate this effect within individual studies, such that CBT can often be more effective (Mansell, 2011). Therefore, the reason for the common, but by no means ubiquitous, superiority of CBT is contextual and needs to be understood further. A PCT approach would predict that any psychological therapy would be more efficient and effective if it facilitates the shift and sustaining of awareness on the goal conflict underlying the presenting problem. This may explain the efficiency of CBT for simple phobias, because the presenting problem is highly specific and stable, and the intervention involves direct manipulation of awareness towards the thoughts and feelings surrounding the phobia (Öst, 1989). We will return to exposure as a process in more detail later in the article.

EMPIRICAL WORK ON A PCT APPROACH TO PSYCHOLOGICAL DISTRESS AND RECOVERY

According to the principles of PCT, conflicted goals will be an essential component of psychological distress, even though the symptoms and goals will vary. In a study of 22 people with a range of different psychological disorders and 24 nonclinical controls, the content of their self-reported intrusive images were found to correspond in 90% of all cases to the themes of at least one of their important personal goals that were elicited in a separate interview (Reid, 2009). In this study, a closer match was found for avoidance goals than approach goals in the clinical sample. Yet, the PCT approach proposes that it is the avoidance of situations that are also desired (e.g., avoidance of social contact) that creates the conflict that causes distress. PCT provides a unique, mechanistic account of how and why goal conflict is a problem (it leads to loss of control over important personal goals) and provides a new hypothesis around what maintains it (lack of awareness) and what can reduce it (redirecting attention to focus on the conflicting goals). Recent research is generating findings that are consistent with this view.

In an analogue sample, Kelly, Mansell, and Wood (2011) assessed both low level goal conflict (between everyday strivings) and an implicit index of high level goal conflict—ambivalence—to test whether high-level conflict is related to distress. It was found that ambivalence, rather than everyday goal conflict, positively correlated with depression and that ambivalence was related to depression, even in the absence of conflict between low-level, everyday goals. One would expect that shifting and sustaining attention on this deep level conflict would be effective in resolving it. Consistent with this view, expressive writing about distressing experiences of goal ambivalence led to a reduction in distress about the goal ambivalence at follow up compared to a control writing group (Kelly, Wood, Shearman, Phillips, & Mansell, 2012). A large cohort study explored whether the capacity for people to pursue goals and yet re-evaluate them regularly would predict well-being, as would be the case when shifting and sustaining attention on goal conflict. This combination of goal pursuit and flexible goal adjustment predicted less depression, hostility, and ill-health symptoms at 10-year follow-up (Kelly, Wood, & Mansell, 2013).

A further realm of evidence for PCT comes from personal accounts of mental health problems and recovery from them. Qualitative methods are appropriate for discovery-oriented research (Pope & Mays, 2006) and were considered suitable by the authors of these studies as there previously had been little knowledge of the mechanism underlying how recovery occurs. The majority of these studies addressed a mixed range of presenting mental health problems, and they assessed the impact of therapy (Carey et al., 2007; Higginson & Mansell, 2008; McEvoy, Schauman, Mansell, & Morris, 2012), natural recovery from problematic eating (Alsawy & Mansell, 2013), and the use of art-making within natural recovery (Stevenson-Taylor & Mansell, 2012).

Consistently, participants experienced that their peak distress (often termed their rock bottom) was related to a loss of control of their own lives, often to the extent that other people (e.g., family members, health professionals) took control of them. Thus, control was integral to their mental health problems.

Consistent with PCT, a number of these studies identified conflict among various important goals that they held for example: a sense of identity, to be socially accepted, and to avoid negative emotions (Alsawy & Mansell, 2013; Stevenson-Taylor & Mansell, 2012). Also consistent with PCT, many participants described that they had less awareness of their goal conflict during their peak distress. Conversely, the recovery process itself involved regaining control that depended on the successful pursuit of life goals and achieving a sense of balance and control between them, often through drawing on sources of outside support (McEvoy, Schauman, Mansell, & Morris, 2012). Across the studies, change involved both sudden moments (such as insights and realizations) and gradual periods of change. This is consistent with the trial-and-error changes described during the process of reorganization in PCT. These eventually result in a configuration that solves the higher level conflict and then eventually is filtered down to be implemented in their concrete, everyday behavior.

APPLICATION TO CBT PROCESSES AND TECHNIQUES

One of the key contributions of a PCT approach comes in its capacity to explain and enhance existing components of CBT, such as exposure, behavioral activation, decentering, formulation, and the role of the therapeutic relationship. A range of published theoretical reviews and clinical reports have described these innovations.

With regard to exposure, PCT has provided both an explanatory framework and a novel intervention. A modification of graded exposure has been designed and tested in a case series. Using this method, the therapist enables the client to select their own target level of arousal and sustain this level of arousal as they try out new environments and behaviors (Brady & Raines, 2009). Thus, the client is in control of the process, and it is their exposure to their own perception—in this case arousal—that is key, rather than targeting specific behaviors or environments on a graded hierarchy from the therapist's perspective. This approach is consistent with the emerging evidence that interoceptive exposure can be applied as a trans-diagnostic intervention (Boswell et al., 2013).

Carey (2011) goes a step further and provides an operational definition of exposure: sustaining awareness on perceptual experiences, that are typically kept outside awareness, in order to reduce goal conflict and regain control. With this definition, he separates the process of exposure from exposure therapy and sees it as an active ingredient in a range of effective psychological interventions such as counselling and expressive writing, in which, for example, previously suppressed emotional material is brought into awareness.

Carey's (2011) approach also allows us to consider exposure therapy as goal conflict. The client may have a goal to get more intense experiences (e.g. feelings of anxiety, past memories), in order to face their fears and recover, conflict with a goal to be further away from them (defensive distance), for example through avoidance or suppression. When a therapist constructs a graded hierarchy, the therapist helps the client to navigate these conflicting goals. This model of goal conflict has recently informed a force-feedback virtual reality paradigm in which participants need to bring a feared animal (spider) closer to them to identify it (Oliver & Mansell, 2013). Spider phobic individuals performed worse at this task, showed greater variation in their distance from the spider, and less control over the image, all of which were indicative of goal conflict.

This integrative view of exposure provides a range of implications for how to combine different therapeutic techniques. For example, it is proposed that 'decentering' in CBT involves helping clients to engage in exposure to their own distressing thoughts and hold them in mind as they spontaneously generate new perspectives on them through reorganization. A similar process is seen to occur during attentional training (Wells, 2000), mindfulness exercises (Gilbert, 2009), and attentional manipulations during behavior experiments (e.g., Wells, White, & Carter, 1997).

Furthermore, Carey (2011) cites behavioral activation (BA) as one example of a technique that promotes exposure. In a separate clinical report, a primary care CBT service has used the insights from PCT to inform the questioning style and

focus of BA (McEvoy, Law, Bates, Hylton, & Mansell, 2013). The therapists in the service paid closer attention to facilitating the amount of control that patients had over activity scheduling. They also used a style of questioning informed by PCT (Method of Levels—see below) to attempt to elicit deeper, higher-level goals for their activities that sustained their sense of mastery and purpose in the long term.

The PCT account of exposure is also highly consistent with emerging evidence on exposure that has challenged existing theoretical accounts. First, exposure has been shown to be successful while safety-seeking behaviors are carried out (Milosevic & Radomsky, 2008; Rachman, Shafran, Radomsky, & Zysk, 2011). The standard cognitive and behavioral models of avoidance and safety-seeking behavior propose that they need to be dropped in order to successfully benefit from exposure or behavioral experiments (Salkovskis, 1991). Yet, PCT proposes that conflict is the problem, not safety-seeking per se. Thus, it tells us that if a patient can remain in perceptual contact with the feared experience that they need to approach, while continuing to engage in a safety-seeking behavior, then productive change will still occur to enhance the person's overall control. Indeed there are interventions that appear to equip patients with safety behaviors that are highly effective, such as training in applied tension for blood-injury-injection phobia (Öst, Sterner, & Fellenius, 1989). According to PCT, the counterproductive effects of safety behaviors on important goals are the problem.

Second, a large series of studies indicate that fears can return in people with phobias when they are in situations, or internal states, which are different from those in which they engaged in exposure, despite successful habituation (see Vervliet, Craske, & Hermans, 2013, for a review). Emerging evidence seems to indicate that it is the 'higher level' processes that remain implicit and are generalized across contexts, such as attitudes towards the phobic object. These remain unchanged by some forms of exposure, and predict return of fear (e.g., Vasey, Harbaugh, Buffington, Jones, & Fazio, 2012). From a PCT perspective, engaging in an exposure technique is not sufficient to ensure that the client is in control of the process, and fully willing to access the higher order, conflicting goals that are not context-specific, and maintain their distress in the long-term. Thus, we would predict return of fear when these goals remain implicit. In Method of Levels therapy (based on PCT), exposure is driven by the patient themselves as they are helped to become aware of the implicit conflicting goals. For example they may articulate important, long-term reasons for facing their fears (e.g., to be connected with other people), at the same time as their deeply held reasons for not facing them (e.g., to prevent being rejected by other people). These apply across many different contexts. PCT would predict that accessing this deeper level of meaning is necessary to facilitate long-term recovery through its generalization across contexts.

A third, related finding is that exposure and training in manipulation of mental imagery provides an active treatment across disorders (Holmes & Mathews, 2010). Within PCT, the hierarchy is able to short-circuit itself such that internal references (e.g. one's representation of a family meal) can be fed back into the system as if that perception is occurring right now (Powers, 1973). So, one can imagine a family meal in one's mind's eye. This process provides the foundation

for the mental simulation of imagery, metaphor, and language that are utilized in therapy to test out planned goals before they are enacted within the world. The details of this process, that relies on distributed memory, are elaborated in further detail elsewhere (Mansell, 2005; Mansell & Carey, 2013; Powers, 1973). Yet, this perspective tells us why effective exposure is in fact perceptual exposure that is independent of the specific situations or behaviors at the time. Moreover, imagery training is designed to help people to gain more control over their perceptions—the core principle of PCT. This is in stark contrast to the sense that images are out of control that people often report when their imagery is intrusive or hard to access. Indeed, the facilitation of control may also explain the benefits of carrying out some kind of simple, concurrent task while engaging in imaginal exposure, such as eye movements (van den Hout et al., 2011) and visuospatial grounding (Stuart, Holmes, & Brewin, 2006). Rather than allowing the client to feel overwhelmed by the imagery within a passive state as may happen in normal circumstances, concurrent tasks may help them actively control a perceptual experience in the real world. Taking together each of the above examples of evidence, it appears that what makes exposure effective is consistent with PCT, and a PCT explanation of these provides its own predictions that can be tested.

The role of the therapeutic relationship has also been addressed in some detail (Carey, Kelly, Mansell, & Tai, 2012; Mansell et al., 2012; McEvoy, Baker et al., 2012). A PCT approach regards the self as the agent of change, with the therapist providing a facilitating role. The therapeutic relationship is often regarded as necessary but not sufficient for psychological change. Yet, a PCT account indicates the opposite—that the relationship is sufficient on its own but not necessary. We know that other factors on their own, such as expressive writing and exposure might be sufficient to prompt psychological change. The authors suggested that elements such as warmth, empathy, curiosity, compassion, and unconditional positive regard operate by enabling the client to examine their problems freely. In turn, this allows them to consider their current thoughts to the extent that they begin to solve their own problems. This approach also limits the degree of mismatch in goals between the therapist and client that would create more conflict (Carey et al., 2012). Thus, an effective collaborative relationship is one in which the therapist and client control different experiences from one another. For example, the client may control his perception of how he is conducting himself whereas the therapist may control her perception how questions are phrased. Any experiences that both parties attempt to control (e.g., topic of conversation, pace of session) are discussed openly and immediately to address any conflict that arises (Mansell, 2012). This process has been modelled in detail within sociology (termed collective control) and so is likely to inform future research on control in relationships (McClelland, 2004).

As might be imagined from the rich hierarchy of goals in a PCT model, the theory can be used to inform the process of case formulation (Bird, Mansell, & Tai, 2009; Spratt & Carey, 2009). A PCT formulation involves identifying the important goals that a client holds, particularly at a higher level—such as their principles, their desired self, and the kind of social world they want to live in. To

translate this from familiar cognitive terms, a core belief such as “I am unlovable” would be regarded as a blocked goal of “I want to have long-term love” within PCT. Formulation then involves identifying the key goal conflicts that can be discussed in detail during therapy.

PCT may also have the potential to explain how the different CBT techniques target different levels of a client’s hierarchy (Mansell, 2012). Interventions that address both higher level goals and lower level perceptual experiences, such as behavioral experiments and imagery rescripting, may have longer-lasting effects than training in skills that target at lower levels in the hierarchy. This is because the skills may remain vulnerable to being destabilized by goal conflict at higher levels. Despite this propensity of PCT for formulation and informing targeted techniques, they are not the focus of Method of Levels therapy.

Finally, PCT can be used to inform the analysis of difficulties in people for whom it is hard to garner self-reports, such as young children and people with intellectual disabilities. The first step would be to use sensitive questioning to attempt to elucidate what they are trying to control. For example, this has been achieved in people diagnosed with autism (Brown & Carey, 2012). If this proves impossible, a systematic method known as the Test for the Controlled Variable (TCV; Powers, 1973) allows the health professional to develop hypotheses about what a person might be trying to control with the behaviors that are observed, and test them by manipulating the environment. Carey (2012) describes various examples within a classroom setting. For example, it might be proposed that a child disrupts other children because she wants to set her own difficulty level for her assignments. This would be confirmed by the child being more disruptive when the difficulty is set by the teacher and less disruptive if she can choose the difficulty level herself.

In sum, many applications of PCT involve understanding existing psychological interventions at a deeper level rather than reinventing new ones, and then refining them by targeting the core processes suggested to be involved in change. This provides the capacity for integration across different approaches and a tighter theoretical foundation for blending different modalities, in contrast to simple pragmatism or eclecticism. Indeed, Method of Levels capitalizes on this propensity of PCT to target what may be the active ingredient across different therapies.

A TRANSDIAGNOSTIC APPROACH TO CBT USING METHOD OF LEVELS

Based on the principles of PCT, Method of Levels (MOL) aims to help clients shift their awareness to higher hierarchical levels to facilitate the process of reorganization in order to resolve goal conflicts (Carey, 2006, 2008b). This is achieved first by encouraging the client to talk about their problem, and second by identifying disruptions in the client’s dialogue. Disruptions may involve a smile, pause, shake of the head, change in intonation, volume and pace of speech, looking away, or a shift in topic. According to PCT, these disruptions indicate a shift in the person’s

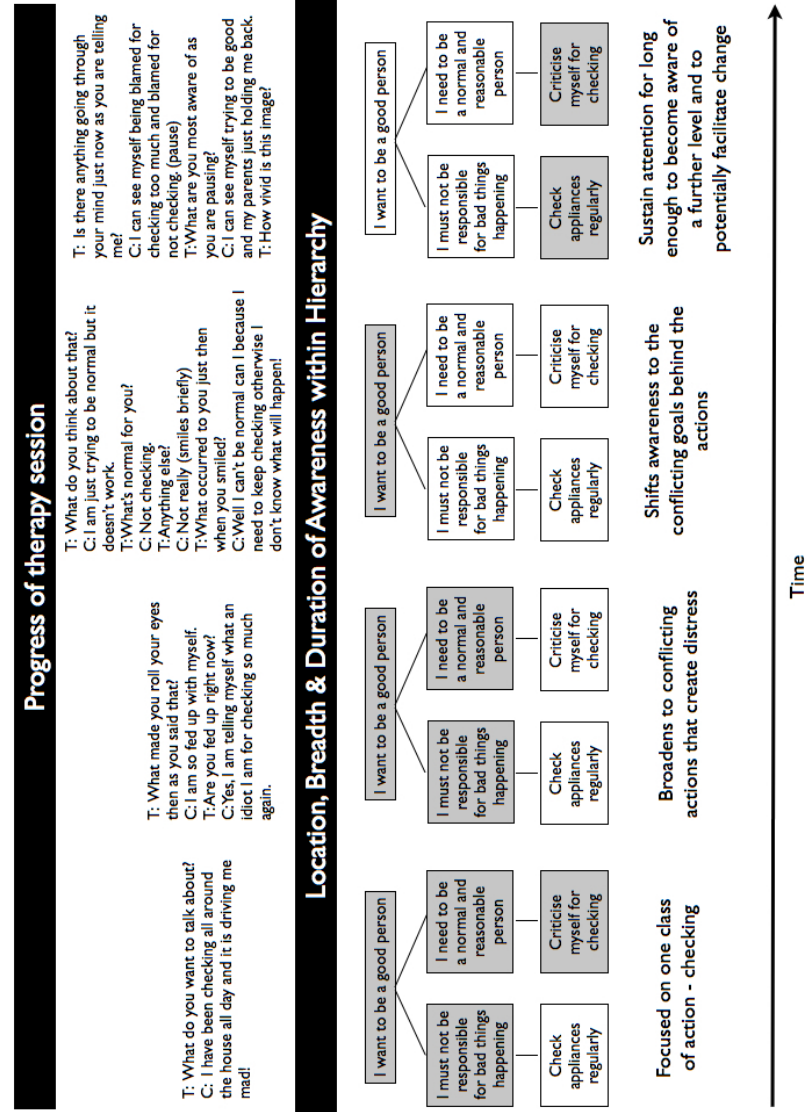


FIGURE 2. Mapping of Shifts in Awareness in a Goal Hierarchy during Method of Levels.
Note. The shaded boxes indicate elements of the hierarchy of an example patient outside awareness and the unshaded boxes indicate elements of the hierarchy within awareness. The content of the hierarchy will be idiosyncratic but across clients the aim is to help raise awareness of goal conflict and higher level (longer term) goals.

awareness to thoughts evaluating the topic discussed that are made from a higher level (Powers, 1998). The clinician's task is then to bring the client's attention to the background thought that occurred within the disrupted moment. Thus, the therapist continually redirects the client's awareness to the present moment experience of the problem. Helping the client to shift their attention to higher perceptual levels and sustain them on it is considered the active element of psychotherapy and therefore this is maximized in MOL (Carey, 2006). The way that questioning is proposed to affect the location and breadth of awareness throughout a goal hierarchy is illustrated in detail in Figure 2. The same intervention is provided regardless of diagnosis and the therapy is designed to be deliberately parsimonious so that the therapist does just enough with regular questioning to help the client direct their own change. Thus, patients with different diagnoses may discuss widely ranging topics, such as substance abuse, obsessions, trauma, mood instability, and relationship difficulties. Yet, the goals of the therapist remain the same—to talk about the problem in the present moment and to notice disruptions.

A number of case studies and pragmatic uncontrolled trials in routine practice have shown moderate to strong effect sizes for reductions in standardized measures of psychological distress after MOL. These clients have experienced a range of problems including depression, substance addictions, suicide attempts, bereavement, panic disorder, generalized anxiety disorder, social phobia, post-traumatic stress disorder, agoraphobia, Asperger's disorder, relationship breakdowns, anger management, and eating disorders (Carey, 1999, 2001, 2005; Carey, Carey, Mullan, Spratt, & Spratt, 2009; Carey & Mullan, 2007; Carey & Mullan, 2008). Recently, a study of 51 patients in secondary care revealed that MOL was particularly efficient in producing beneficial outcomes, compared to an array of comparable psychological interventions (Carey, Tai, & Stiles, 2013). A pilot randomized controlled trial in a primary care psychology service has also revealed promising findings (Bird, Tai, Hamilton, & Mansell, 2013). MOL was delivered to 17 individuals with a wide range of presenting problems for an average of five sessions over a three-month period and led to reductions in anxiety and depression that were not observed within 12 individuals receiving treatment as usual. Future research will be required to investigate MOL in larger scale trials.

HELP-SEEKING, SELF-DIRECTED CHANGE, AND SERVICE DELIVERY

At its heart, PCT regards people as self-directed agents. Other people, including service providers, may facilitate the processes of goal attainment and change, but essentially people become less distressed when they are able to achieve long-lasting control over their own lives. PCT indicates that individual rates of change cannot be determined by the service because they are driven internally by the client. Indeed, we can see people exerting control over their attendance at therapy, often contrary to the expectations of the service. For example, the rates of nonattendance at first appointments for psychological interventions are high, and can

often lead to therapy termination (Hampton-Robb, Qualls, & Compton, 2003). Furthermore, research has indicated that even among those who attend their first session, the majority of clients in general practice attend a small number of therapy sessions; usually between one and five (Carey, 2005). Furthermore, a review of the number of therapy sessions that are generally recommended by clinicians and researchers who develop treatment protocols indicated that there is no evidence for an exact number of required sessions (Carey, 2005). Therefore, it is essential to offer clients an intervention that is accessible, flexible in duration and frequency to individual clients' needs, and can start to help at the first session.

For the above reasons, clients are invited to attend as many MOL sessions as they need, as soon as they want them. Each client is encouraged to take ownership of the appointment scheduling in terms of the frequency and number of sessions they need. A range of research studies indicate that this system works well for both clients and services. In a series of primary care services, clients were given the responsibility for therapy scheduling and were found capable of making their own decisions about treatment schedules (Carey, 2005; Carey & Mullan, 2007; Carey & Mullan, 2008), attending between 1 and 23 therapy sessions. A further study revealed that this system reduced waiting lists in primary care and increased service capacity (Carey & Spratt, 2009).

It is nevertheless notable that people may book a therapy appointment and yet do not turn up on the day—people can be ambivalent about seeking help. Specifically, this could reflect the client holding conflicting goals: one goal to avoid thinking or talking about their problem and the other to express and resolve their problem (Kushner & Sher, 1989, 1991; Paige & Mansell, 2013). For example, in primary care, wanting to understand more about one's own mind may be associated with better attendance at the first therapy appointment (Murphy, Mansell, Craven, Menary, & McEvoy, 2012), whereas fear of disclosure can be associated with nonattendance (Murphy, Mansell, Craven, & McEvoy, *in press*).

Based on the principles of PCT, Schauman and Mansell (2012) presented the loss of valued control model. This draws upon evidence for factors underlying the ambivalence and nonattendance of therapy. It proposes that people attend a therapy session when it does not threaten their sense of control. Clients may have specific fears of loss of control, for example over their emotions, over disclosure of trauma or over their self-esteem and this may become more salient as the date for a scheduled therapy session draws nearer. This implies that giving clients control over help-seeking, therapy scheduling, attendance, and the content of each session (as in MOL) can allow them to exert control and not attend a session and yet remain in touch with the service to access it as and when necessary. A range of research studies have indicated positive outcomes for giving patients control in this way (see Schauman & Mansell, 2012). Therefore, services can improve by making their interventions as easy to access as possible. This would entail a minimal screening process and clear attempts to ensure the client will have control over each stage of the process.

SUMMARY OF KEY RECOMMENDATIONS FOR INDIVIDUAL THERAPY

The implications of a PCT-based approach to psychological therapy described above are summarized here. Many of these are embodied with MOL, but they can equally be applied to existing psychological interventions:

1. *Provide clients with as much control as they would like over their intervention, providing this is feasible and does not create a significant risk.*
 - a. Ask clients whether they would like to select the number, duration, and frequency of sessions. Allow them to do so and challenge service constraints that limit this.
 - b. Ask the client to fully determine the topic of the session even if you had something else planned—“What would you like to talk about today?”
 - c. Question whether elements of current practice are necessary—such as the assessment process, history-taking, and the use of homework.
2. *Facilitate control within prescribed techniques.* This may be more appropriate where a clinician is not ready or willing to let go of a pre-existing technique.
 - a. Allow clients to weigh up their own pros and cons of their safety-behaviors and other dysfunctional processes such as avoidance and rumination.
 - b. Ask clients how they would like to approach ‘dropping’ or continuing these processes, the timescale, and how they would know whether changing them has been helpful or not.
 - c. Help the client to weigh up the benefits of engaging with the technique alongside an alternative focus for the session that the client may think is more important.
 - d. If you have a behavior-based technique that you provide—like eye movements, or grounding—ask the client whether it is helpful or not, and if so, how it is helpful for them. If they don’t find it helpful, do something else.
3. *Focus on the present moment.* PCT proposes that behavior, thinking, memory recall, and imagination each serve to control perception, and this only occurs in the present moment.
 - a. Use simple questioning to bring attention to present moment perception and how it is being controlled. This is similarly important whether the therapist is catching thoughts, exploring a mental image, asking about the use of words, focusing on affect, or noticing a behavior.
 - b. Check in with the present moment regularly during therapy: How is this going right now?; What’s it like talking about this?; What’s going on for you as we are talking about this?
 - c. See a past or present topic through the lens of the present; e.g., “What’s going on for you as you are remembering what happened?” or “How vivid is that image of what you want to happen?”

4. *Use simple methods to bring the client's deeper, personally-important goals to their awareness and sustain on them.* According to PCT, overall control over one's life can only be achieved and sustained by changes at this level.
 - a. Keep on asking—What is the problem about this?, What is most important here?, What bothers you most about what you are telling me? It is easy to assume we are talking about the problem when really a client's awareness is only on temporary or superficial elements of it.
 - b. Catch disruptions as soon as they occur—What's going on for you as you are pausing there?, What's making you smile just then? Fleeting thoughts often relate to higher level goals that may be missed if the therapist does not ask straight away.
5. *Notice and explore conflict.* PCT proposes that we regain control over our lives by noticing our goal conflicts and sustaining our attention on them.
 - a. Help clients to sit with uncertain states and mixed feelings to explore them in more detail.
 - b. Explore conflicts explicitly by giving clients opportunities to talk freely about both sides, and about alternative decisions, goals and self-states.
 - c. Don't try to steer the client to one side or the other, but explore them equally.
6. *Drop what you don't need.* In order to maximize the time that the client uses in the session to shift and sustain awareness on their problem, cut down what you say and do:
 - a. Keep your questions short and simple.
 - b. Use the client's own words and not terminology.
 - c. Don't spend time in the session doing what the client could do at home, such as psychoeducation.
 - d. If a client says a technique doesn't work for them, try something else.
7. *Get feedback.* PCT explains why we need regular feedback to fulfil any goal, and that includes delivering effective therapy.
 - a. Ask for feedback during therapy, not just at the end: How is it going talking about this today?, How are you finding this session so far?
 - b. Don't skew or avoid the feedback with your questioning style—Was everything OK today? is unlikely to elicit a no from the client.
 - c. Look for your own error—Is there anything I have asked today that hasn't worked for you?, What could we change in these sessions that would work best for you?

The above principles are guided by theory, and yet describe many of the finer tuning features of delivering therapy that clinicians are unsure about. While they do not provide a single strategy to manage roadblocks with all clients, they do take an approach that can be continually evaluated and modified from the client's own perspective.

INNOVATION OF INTERVENTIONS ACROSS MODALITIES AND SETTINGS

This article has largely focused on the science and practice of delivering one-to-one therapy sessions. Yet it has known limitations in terms of cost and capacity. One alternative modality in development is a computerized adaptation of MOL called MYLO (Manage Your Life Online). It uses sophisticated searches of words and phrases in clients' typed statements to simulate an MOL conversation style. In a nonclinical sample, MYLO was associated with a decrease in emotional distress, anxiety, depression, and stress (Gaffney, Mansell, Edwards, & Wright, *in press*). Furthermore, compared to a control computer-based program 'ELIZA', MYLO was found to better facilitate problem resolution, psychological change, and distress reduction. This was affected by the perceived helpfulness and positive expectations of computer-based programs (Gaffney et al., *in press*). The aim is to provide interventions of this kind through mobile technologies.

PCT has also informed a six-session successful group intervention for people experiencing anxiety and/or low mood (Morris et al., 2013). Within these sessions, the clients are helped to discuss their anxieties and problems in terms of control, to become aware of higher level goal conflicts, to become aware of the pros and cons of their various control strategies, and to engage in exposure therapy informed by Carey's (2011) approach. Although in its early stages, the outcomes are promising.

PCT has also informed interventions across different settings, including low intensity primary care services (McEvoy, Law et al., 2013), dementia care (McEvoy & Plant, 2013), prison settings (Huddy, personal communication), a hospital crisis service (Lazare, 2012), and inpatient psychiatric wards (Tai, 2009).

LIMITATIONS AND FUTURE DEVELOPMENTS

Although the transdiagnostic approach to CBT holds many benefits, it is well recognized that the existing structure of many services and guidelines are disorder-specific (Mansell et al., 2009). Therefore, there are ongoing limits to the rates at which a transdiagnostic ethos can be adopted. It is often the aim of a new therapy to show it is more efficacious than existing therapies when a fixed number of sessions are provided. Yet, transdiagnostic approaches may not achieve better outcomes when many therapy sessions are provided over long periods. It requires a change in mindset not to see this as a limitation and to appreciate the potential societal and economical benefits of the enhanced accessibility, efficiency, and parsimony that transdiagnostic approaches provide.

In terms of the PCT approach, there are a number of limitations at present. While the evidence for the negative feedback loop account of perceptual control

is strong, evidence for the other features of the theory are less well-established. We have reported emerging findings supporting a PCT account of psychological distress, but further studies with treatment-seeking samples is required. While it is clear that patients with diverse mental health presentations report less distress after MOL, further research will be needed to establish for whom this particular intervention is most beneficial and most efficient. Another challenge presented by PCT is its use of a new terminology and a shift in perspective on the nature of behavior, which existing therapists may find hard to accept (Mansell, 2009). Yet, with this comes a potential link across the social, physical, and life sciences because PCT has been applied more widely than possibly any other psychological theory (Mansell & Carey, 2009; Marken & Mansell, 2013; www.pctweb.org). In practice, this may mean a closer interface between mental health organizations and business, education, and medical systems in the future. To manage this, there needs to be a greater momentum of researchers and practitioners to take up this truly integrative and challenging theory.

CONCLUSION

We have summarized the justification for a transdiagnostic approach to CBT and psychological interventions based on PCT. Perhaps unlike other approaches, PCT can embrace existing techniques and therapies and enhance them through a deeper mechanistic understanding of their core ingredients. It has also led to the innovation of a new therapy, the Method of Levels, which has proved acceptable within services and is associated with positive outcomes. The ongoing program of research is consistent with the PCT account of psychological distress and recovery, and future research will be targeted to test it more rigorously. In the meantime, we have introduced the state-of-play within our evolving field of enquiry and intervention and look forward to feedback and contributions from both scientists and practitioners.

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