Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Clinical Psychology Review 80 (2020) 101890

Contents lists available at ScienceDirect

Clinical Psychology Review

journal homepage: www.elsevier.com/locate/clinpsychrev

Review

A reformulated contextual model of psychotherapy for treating anxiety and depression

Michael E. Hyland[a,b,*]

[a] Plymouth Marjon University, Derriford Road, Plymouth PL6 8BH, United Kingdom
[b] University of Plymouth, Drakes Circus, Plymouth PL4 8AA, United Kingdom

HIGHLIGHTS

- Depression and anxiety are caused by negative implicit beliefs not cognitions.
- Implicit beliefs differ from reality through a process of adaptation.
- Therapy reverses the process of adaptation making negative implicit beliefs positive.
- Contextual and specific mechanisms both change implicit beliefs.

ARTICLE INFO

Keywords:
Common factors
Contextual model
Psychotherapy
Dual process theory
Connectionism
Adaptation
Mental health
Depression
Anxiety
Prevention

ABSTRACT

This paper describes a reformulated contextual model that uses cognitive theory (dual process theory), motivation theory (personality) and behavioral adaptation (self-correcting control systems) to show how anxiety and depression are caused, treated and prevented by an interaction between people and contexts. Depression and anxiety are the result of implicit beliefs (not cognitions) that all experience is unrewarding and threatening, these being components of the implicit belief that life is bad. Implicit beliefs are formed automatically from contextual cues and in healthy individuals are consistent with rational appraisal. They become more negative than reality through a process of adaptation when behaviors, directed by rational thinking, repeatedly create cues that signify lack of reward or threat. Such behaviors occur when social or other obligations lead people to choose behaviors that fail to satisfy their own unique goals in life and approach threatening situations, contrary to their automatic reactions. Therapeutic interventions and lifestyle change reverse these adaptive processes by positive experiences that create positive implicit beliefs, a change effected in different ways by contextual and specific mechanisms both of which correct the same fault of negative implicit beliefs. Effective therapeutic relationships and interventions are achieved by detecting and responding to a patient's unique needs and goals and their associated implicit beliefs. Mental health requires not only that people experience life as good as defined by their own goals and beliefs but also the avoidance of contexts where social and other pressures induce people to behave in ways inconsistent with their automatically generated feelings.

1. Introduction

Psychotherapy is effective. That is uncontroversial. What is controversial is the reason for its effectiveness. Two different paradigms (i.e., metatheoretical assumptions, Kuhn, 1962) are used to explain psychotherapy's effectives: Specific theories (several have been proposed) and the common factors or contextual model. This paper briefly describes the origin and assumptions of these paradigms and then shows how the insights gained from dual process theory, motivational theories of personality, and the adaptation of self-correcting control systems provide a way of integrating specific and contextual mechanisms within a reformulated contextual model.

2. History and rationale for specific theories

Modern western medicine is based on the assumption that symptoms are caused by specific biological faults or pathophysiologies (Porter, 1996). Each disease is defined by its unique pathophysiology and is treated by a treatment or treatments that correct the specific fault that defines the disease. Inspired by the findings of anatomists in the

* Plymouth Marjon University, Derriford Road, Plymouth PL6 8BH, United Kingdom.
E-mail addresses: mhyland@plymouth.ac.uk, MHyland@marjon.ac.uk.

https://doi.org/10.1016/j.cpr.2020.101890
Received 3 February 2020; Received in revised form 1 July 2020; Accepted 2 July 2020
Available online 11 July 2020

16th century, western medicine began to replace Hippocratic medicine during the 17th, 18th centuries becoming the dominant paradigm by the end of the 19th century (Porter, 1996).

By the end of the 19th century the specific pathophysiology of most diseases had been discovered with one exception. Despite considerable effort, no pathophysiology had been discovered for nervous diseases – i.e., diseases assumed to be caused by nerves. Despite his initial belief in the existence of pathophysiology (Freud, 1895), Freud, who was a medical doctor not a psychologist, proposed a new way of explaining nervous disorders (Freud, 1913). Symptoms could be explained by a psychological fault instead of a biological fault, and successful treatment could be achieved by correcting the psychological fault through a psychological route – the talking cure. Nervous diseases were re-interpreted as mental illness with the exception of a limited number of nervous diseases for which pathophysiology was discovered only after Freud's theoretical development (Alzheimer, 2006).

The fault correction model of mental illness was subsequently adopted by psychologists but with other types of fault and fault correction. Behaviorists attributed the fault to erroneous associations (Watson & Rayner, 1920); cognitive psychologists to erroneous cognitions (Beck, 1963, 1964), and existential psychologists to lack of meaning (Frankl, 1967). Each specific psychotherapy assumes a specific fault that is corrected by a specific intervention. More recent approaches, including third wave cognitive behavior interventions, remain part of the cognitive tradition where erroneous cognitions are considered the underlying fault. For example, mindfulness is thought effective because it disrupts rumination and increases self-compassion, both of which reduce the occurrence of negative cognitions (Frostadottir & Dorjee, 2019; Svendsen, Kvernenes, Wiker, & Dundas, 2017).

3. History and rationale for common factors or contextual model

By the middle of the 1930s there was sufficient data for Rosenzweig (1936) to publish a paper with the title “some implicit common factors in diverse methods of psychotherapy.” Rosenzweig argued that all psychotherapies were equally effective because of factors that are common to all psychotherapies. The common factor or non-specific mechanisms were later identified as response expectancy or placebo response (Kirsch, 1985) a cognitive response that is accompanied by the emotion of hope (Kube, Blease, Ballou, & Kaptchuk, 2019) and the therapeutic relationship (Jensen & Kelley, 2016; Rogers, 1951). More recent non-specific mechanisms include the affective consequences of a goal oriented ritual that is accompanied by hope (Geers, Weiland, Kosbab, Landry, & Helfer, 2005; Hyland, 2011; Hyland & Whalley, 2008) and the empowering effects of choice (Geers et al., 2013; Geers, Briñol, & Petty, 2019). All these non-specific mechanisms affect outcome through some form of meaning embedded in the therapeutic situation (Frank, 1986; Moerman & Jonas, 2002) or context and hence the contextual model of psychotherapy (Wampold, 2013).

The contextual model is a fault correction model. According to Frank (1961) anxiety and depression are caused by demoralisation which is the consequence of negative events. Demoralisation is corrected by remoralisation (Frank, 1974, 1986; Vissers, Hutschemaekers, Keijsers, Van der Veld, & Hendriks, 2010) which is achieved through the morale enhancing effect of psychotherapy, an effect that can be explained by the various nonspecific mechanisms. The placebo and expectancy signal hope, the relationship provides social support, and meaningful therapeutic rituals provide a sense of accomplishment consistent with mechanisms of motivational concordance and therapy choice.

More recently, Wampold and Budge (Budge & Wampold, 2015; Wampold & Budge, 2012) provide an evolutionary perspective suggesting that the common factors satisfy a need of relatedness that evolved due to the interdependence of archaic human groups, an evolutionary perspective consistent with the hypothesis that functional faults were created in non-contributing Paleolithic individuals (Hyland & Scutt, 1991). In sum, both contextual and specific models provide an account of a fault that is corrected through therapy, but different types of fault and correction are proposed.

4. Three interlinked issues that form the basis of this paper

This paper addresses three linked issues. The first is that specific models are dominant in training and practice but there is long standing evidence that the benefit of psychotherapy is due to contextual factors and little (some argue none) is due to specific factors (Wampold, 2013; Wampold et al., 1997; Wampold & Imel, 2015), though the evidence is not uncontroversial and the underlying assumptions of the controversy may be overly simplistic (de Felice et al., 2019).

The second issue concerns the relationship between psychotherapy and medicine. Medical treatments correct a specific fault but can vary in level of generality, namely disease, sub-disease and multi-disease level. Many treatments are disease specific, for example, different drugs target the different inflammatory mediators of different inflammatory diseases. Some treatments such as oral corticosteroids can be used for several different diseases because they have a beneficial effect on several different inflammatory mediators. There is also a yet more general level of treatment. Patients who have different surgical and medical conditions receive the same treatment of bed rest, and bed rest is the only recommended treatment (with symptom relief) for influenza. There is also a sub-disease level called personalised medicine (Walker, Bourke, & Hutchison, 2019) which is defined as

> “treatments targeted to the needs of individual patients on the basis of genetic, biomarker, phenotypic, or psychosocial characteristics that distinguish a given patient from other patients with similar clinical presentations”. (Agusti et al., 2016, p 410.)

The different levels of treatment for any given disease are tied together theoretically because they all correct the same fault but in different ways: treatments are complementary not competitive.

Different psychotherapies have been presented as competitive both historically (Eysenck, 1961) and in the present day (Barlow, 2016; Hayes, 2016) because there is no consensus about the underlying fault that needs correcting. The competitive relationship between psychotherapeutic interventions has been questioned. Fifty years ago Cronbach argued that the existence of individual differences precludes a best type of psychotherapy (Cronbach, 1957, 1975). If different psychotherapeutic mechanisms are complementary rather than competitive, then a type of fault needs to be identified that can be corrected by both contextual and specific mechanisms.

The third issue is that of explanatory completeness. A complete account of illness provides an account of (a) the nature of the fault (b) what causes the fault and why it occurs in some people and not others (c) what can be done to correct the fault and (d) how to prevent the fault occurring in the future. In the case of the recent Covid-19 pandemic, the fault is a virus, the virus is spread through droplets transmitted from one person to another, it can be treated by anti-viral medicines and supportive care, and is prevented either by a vaccine or by social distancing.

Explanatory completeness is lacking in more recent theories of psychotherapy. Negative cognitions would arise from adverse circumstances, but the cognitive approach fails to explain how incorrect cognitions arise and how to prevent them in the absence of adverse conditions. The contextual model has adverse circumstances as a cause of demoralisation (Frank, 1961), and adverse circumstances are associated with health risk (Chida & Hamer, 2008). However, some data cannot be explained only by adverse circumstances. The burden of anxiety and depression is not higher in low and medium income countries in comparison with high income countries (World Health Organization, 2017) and collectivism versus individualism moderates the impact of negative social and other events on mental health (Moreira et al., 2020; Tafarodi

& Smith, 2001).

The above three issues demonstrate that, despite the success and insights gained from practice and research in psychotherapy, existing psychotherapeutic theories are incomplete. This conclusion is not new. Commentators point out that there is a lack of theory and lack of transparency in exactly what is happening in the process of psychotherapy (Gaab, Blease, Locher, & Gerger, 2016; Jørgensen, 2019). Historians of science show that research programs develop best when theory precedes data (progressive problem shift) rather than data giving rise to theory (degenerating problem shift) (Lakatos, 1971). The aim of this paper is provide an overarching theory that (a) integrates specific and contextual mechanisms within a single theoretical framework, (b) provides an account of the nature of the fault, how it is formed, how it can be treated and how prevented, and (c) provides a basis for understanding individual differences in response to different treatments.

5. Implicit beliefs

In the original formulation of cognitive behavior therapy (CBT) depression and anxiety are the result of erroneous cognitions (explicit beliefs), and cognitions are the faults that need correcting (Beck, 1963, 1964, 1967). By contrast, in the reformulated contextual model implicit beliefs cause depression and anxiety, and implicit beliefs are the fault that needs correcting.

The term implicit belief originates in early studies of decision making (e.g., Morgan, 1944) but is most widely associated with dual process theory. Dual process theory explains how people make decisions when those decisions do not follow logical rules (Tversky & Kahneman, 1974), a theory for which Kahneman received the Nobel Prize for economics in 2002 (Tversky died in 1996). Decisions can be made in two ways. System 1 produces fast, automatic and emotional responses and is a process that is unavailable to consciousness. System 2 produces slower, deliberate responses that are based on conscious reasoning (Evans, 2008; Kahneman, 2011). Dual process theory has a number of applications. For example, people can have the conscious cognition that they have positive beliefs and attitudes towards a minority group, but tests show that they have negative implicit beliefs and attitudes (Dasgupta, 2013; Kurdi, Mann, Charlesworth, & Banaji, 2019). Implicit beliefs drive affective reactions and behaviors that can be inconsistent with rational and considered appraisal of the situation.

Working separately from psychologists, philosophers make a distinction between aliefs and beliefs, a distinction motivated by the observation that behavior can be inconsistent with what people say they are going to do (Albahari, 2014). A common illustration of the difference between aliefs and beliefs is that of a person standing on the edge of a precipice. The person believes that they are safe, but they *feel* they are unsafe because there is an alief that the visual cue of a cliff edge is dangerous (Gendler, 2019; Haug, 2011). People stand back from the edge of the cliff even though, when asked, they say they are not in danger. Haug (2011) suggests that the placebo effect is due to aliefs, not beliefs.

The idea that judgement or behavior occurs without conscious mediation has been rediscovered several times. Psychodynamic theory is predicated on the assumption of unconscious motives and unconscious beliefs. Working independently from psychoanalysts the early experimental psychologists showed that voluntary action (Ach, 1910) and judgement (Marbe, 1901) could occur without conscious mediation, findings that contributed to the abandonment of the introspective method and the rise of behaviorism (Hyland, 2019).

6. Implicit beliefs in the reformulated contextual model

Dual process theory was proposed in 1974 (Tversky & Kahneman, 1974), but it was not till much later that the idea of implicit beliefs was incorporated within the framework of CBT. In earlier publications implicit beliefs were presented as a factor causing or influencing explicit beliefs (Beevers, 2005; Haeffel et al., 2007). In later publications a dynamic two-way process between implicit and explicit beliefs was proposed (Teachman, Clerkin, Cunningham, Dreyer-Oren, & Werntz, 2019). In both cases the causal relationship between implicit and explicit beliefs means that they become congruent with each other.

The use of implicit beliefs in the reformulated contextual model differs from that in the CBT model in two ways. First, clinical anxiety and depression are the consequence only of implicit beliefs, not explicit beliefs or cognitions. Second, implicit and explicit beliefs can be incongruent, i.e., implicit beliefs can be inconsistent with rational judgement or reality. According to the reformulated contextual model anxiety arises when all situations create an implicit belief of danger, an implicit belief that creates the affect and behaviors associated with danger. Depression occurs when all situations create the implicit belief of goal failure, an implicit belief that creates the sad affect and behaviors associated with goal failure.

Explicit and implicit beliefs are organised hierarchically because the goals to which they relate are hierarchically organised (Hyland, 1988). The implicit beliefs of reward versus lack of reward and of safety versus threat are components of a super-ordinate belief of ‘good life’ versus ‘bad life’ reflecting a super-ordinate goal of well-being. Symptoms of anxiety and depression are correlated because threat and reward are components of this super-ordinate belief. The state of demoralisation, which is described by Frank (1961) as the cause of mental illness, is due to implicit beliefs that all experience will be threatening and lacking in reward, i.e., that all life is bad. Demoralisation is a state caused by a super-ordinate negative implicit belief, but implicit beliefs vary in specificity. Examples of more specific negative implicit beliefs include ‘going outside is dangerous’ (causing agoraphobia) or ‘spiders are dangerous’ (causing arachnophobia).

7. Why implicit beliefs become inconsistent with reality

Negative implicit beliefs form in two ways, either because they reflect the reality of adverse conditions or because they do not. The contribution of adverse conditions as well as moderating factors (e.g., genetics, early life experiences) are discussed as part of the CBT model (Beck & Bredemeier, 2016), and adverse factors and their moderators should also be considered contributory to negative implicit beliefs within the reformulated contextual model. The additional contribution of the reformulated contextual model is that it explains how implicit beliefs become negative in the absence of objectively defined adverse conditions.

Implicit beliefs become inconsistent with reality because of adaptation of a self-correcting control system. The body functions through control systems. Mental states form part of a control system that alters behavior and therefore the environment. The adaptive function of mental content was noted by William James (1899/1922) over a hundred years ago.

> “Our sensations are here to attract us or deter us, our memories to warn or encourage us, our feelings to impel, and our thoughts to restrain our behavior, so that on the whole we may prosper and our days be long in the land.” (James, 1899/1922, p 24.)

Cognitions, implicit beliefs and associated affective states alter behavior. The behavior then alters the situation to form a feedback loop (see Fig. 1). When the situation is dangerous, the person experiences anxiety, and anxiety leads to behavioral avoidance, and so removal of danger. When the situation is one of goal failure, the person experiences sadness, and sadness leads to disengagement from that particular goal, providing the opportunity for more successful goal oriented behavior elsewhere. Under most circumstances system 1 (automatic) and system 2 (rational) provide the same correct interpretation of the situation, and behavior is adaptive to that correct interpretation.

It sometimes happens that the behavior generated by rational considered appraisal (system 2) is inconsistent with the automatically

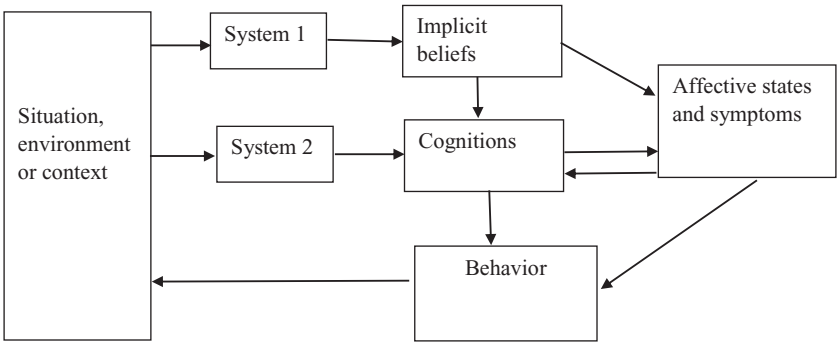

Fig. 1. An adaptive feedback system from implicit beliefs and cognitions. Depression and anxiety are caused by implicit beliefs, the impact of cognitions being indirect and mediated through behavior and the situation.

generated implicit beliefs (system 2). Imagine a person who hates their job because every day they come home feeling a failure because the way they are treated. The rational system 2 generated belief is that the job needs to be done to make money, but the automatic system 1 belief is that the job creates sadness and so should be avoided. As a second example, imagine a child who takes examinations on a regular basis. The rational system 2 belief is that the exam needs to be taken for future advantage, but the automatic system 1 belief that the child is in danger and so exams should be avoided. In both these examples behavior is consistent with rational system 2 beliefs but inconsistent with automatic system 1 beliefs.

Connectionist psychology shows how an underlying network structure can create a system that not only self-regulates but can also learn from experience to improve that self-regulation, i.e., the system self-corrects (Ellis & Humphreys, 1999; Houghton, 2004). If, behavioral control is part of a self-correcting control system (Fig. 1), then any failure for an automatic system 1 belief to alter behavior will lead to a potentiation of that belief. This type of adaptive change can be illustrated with an analogy: If someone does not listen to what you say a common response is to talk louder, i.e., provide a stronger signal. Repeated approach to situations that create sadness should increases the intensity of sadness created by the situation. Repeated approach to situations that create threat should increase the perception of threat of that situation. If the self-regulatory failure persists over a period of time, then the implicit belief of goal failure danger or should increase to such an extent that goal failure and threat is interpreted when neither goal failure nor threat is present. If a person persists in approaching situations that create sadness, then all situations will be interpreted as one of goal failure creating the anhedonia of depression. If a person persists in approaching situations that create anxiety, then all situations will be interpreted as threatening. If anxiety is repeatedly provoked by examinations then, as evidence shows, exam anxiety increases as a function of the number of exams taken (McDonald, 2001).

The adaptation of implicit beliefs proposed here can be contrasted with another adaptive process, the extinction of emotional responses. If a child is anxious about exams, enters the examination room and finds that it a pleasant experience, then the implicit belief of danger would abate, in the same way that systematic desensitisation leads to a reduction of fear in spiders. The problem is that the child does not feel safe during the examination and continues to be anxious afterwards while waiting for results. Fear of spiders would not reduce if the spider kept biting during the process of desensitisation. When standing on the edge of a cliff, a person feels unsafe even when told that there is nothing to worry about. Exposure therapy predicts that after a while people should feel less unsafe, because they do not actually fall. However, if they did experience falling on a regular basis then fear of standing on a cliff edge would increase. Extinction does not occur when behavior is linked to a negative emotion that fails to abate.

In summary, when rational, conscious system 2 processes generate behaviors that are inconsistent with the adaptive function of the automatic system 1 implicit beliefs, then, gradually over time, the system 1 implicit beliefs change so that they no longer provide a more negative interpretation of the situation. Implicit beliefs may influence cognitions as suggested by CBT theorists (Beevers, 2005; Haeffel et al., 2007)) but, because system 1 beliefs are formed through an automatic process from situational inputs, cognitions influence implicit beliefs only when mediated by behavior (see Fig. 1).

The reformulated contextual model proposes that people ignore their automatically generated feelings because of cognitive factors that prioritise other types of behavior. People ignore their automatically generated feelings for a variety of reasons: (a), social obligations including helping others and social expectations, (b) because the person is in a difficult situation and sees no option but to continue, (c) because the behavior produces rewards that are seen as more important than the negative automatically generated feelings. Adaptation occurs when automatically generated feelings fail to alter behavior. Anxiety and depression are the consequence of an adaptive process that has gone wrong rather than a broken part.

8. Other motivational theories and behavioral involvement in the formation of anxiety and depression

Evidence-based motivational theories of depression have similarities with the reformulated contextual model. The control theory of depression (Hyland, 1987) shows how a number of different motivational theories predict that a persistent mismatch between a reference criterion (goal) and perceptual input (the situation) is responsible for depression. Many motivation theories propose that goal dissatisfaction occurs with or without behavioral involvement, and are therefore consistent with the principle that adverse circumstances lead to mental illness. However, in learned helplessness theory, affective, cognitive and behavioral deficits occur only when a person attempts to control an uncontrollable situation (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976). These deficits do not occur in uncontrollable situations where there is no attempt by the person to control the situation, providing evidence consistent with the reformulated contextual model that behavior is an important factor in the formation of pathology.

If depression and anxiety can result from a conflict between automatic system 1 and rational system 2 appraisal, then personality traits that predispose to that conflict should predict anxiety and depression. High need for control and perfectionism are associated with failure to disengage from unattainable goals resulting in the suppression of automatically generated sadness and anxiety. Need for control (Burger, 1984) and perfectionism (Smith, Saklofske, Yan, & Sherry, 2017) and in particular self-critical perfectionism (Moroz & Dunkley, 2019) are associated with poorer mental health. Suppression of automatically generated feelings can also result from a desire to help others. The personality scale *silencing the self* measures the extent to which a person's goals are suppressed in favor of the needs of others and is associated

with poor mental health (Maji & Dixit, 2019) in particular when associated with adverse circumstances (Vaillancourt-Morel, Bergeron, Blais, & Hébert, 2019). Altruism can lead to people placing others' goals above their own and is positively associated with poorer mental health in people in caring professions (Dill, Erickson, & Diefendorff, 2016) as well as entrepreneurs (Kibler, Wincent, Kautonen, Cacciotti, & Obschonka, 2019).

In summary, the reformulated contextual model adds to existing motivational theories and evidence that adverse circumstances are pathogenic by showing how behavioral suppression of automatically generated feelings leads to a process of adaptation, and how this adaptation can occur with or without objective adverse circumstances.

9. Spontaneous remission and therapy

Adaptation is a reversible process. Repeated experience that the world is safe and rewarding will lead to a gradual change in implicit beliefs away from those of danger and lack of reward, particularly if those repeated experiences arise from behavioral choice. Such change can occur spontaneously. Naturally occurring changes in behavior or circumstances could lead to increased experiences of that life is good, with consequent reductions in anxiety and depression depending on the extent that good life is safe or rewarding respectively. However, anxiety and depression often lead to behaviors that suppress the experience of happiness (depression creates anhedonia, anxiety to avoidance) and in which case therapy is needed for recovery.

The mechanisms described in the contextual model provide positive information in a variety of ways. The placebo effect promises a reduction in symptoms and improvement in life brought about by symptom reduction. The therapeutic relationship satisfies a fundamental human need for a meaningful relationship with other humans. Motivationally concordant rituals provide rewarding experiences in each of the activities that the person engages. Rituals all have the function of helping the client experience a world that is safe and rewarding. A repetition of these various experiences over time will lead to a gradual change in negative implicit beliefs to positive implicit beliefs, reflecting an overall implicit belief that life is good.

Specific psychotherapeutic techniques also generate experiences of safety and positive affect. Cognitive change techniques help clients experience the world in a more positive way and helps them engage in behaviors that are more rewarding. Relaxation and meditation techniques such as mindfulness prevents rumination about danger and creates a time and place of safety. Relaxation is possible only if a person feels safe. Interventions such as commitment and acceptance therapy and gratitude therapy provide specific experiences that generate positive affect. Existential psychotherapy helps people reflect on what is important and achieve a more meaningful life (Yalom, 1980). All the different psychological interventions correct the same underlying fault of negative implicit beliefs, but they do it in different ways.

Psychotherapy is one of several non-pharmacological treatments that are effective for treating depression and anxiety. Massage therapy (Rapaport et al., 2018), yoga (Uebelacker & Broughton, 2018) and tai chi (Kong et al., 2019) all have significant benefits for depression and anxiety. Evidence suggests that various forms of complementary and alternative medicine are effective due to the same contextual mechanisms as psychotherapy (Hyland, 2005). They do so by inducing feelings of positive affect and relaxation through the therapeutic bond, expectancy and a ritual that creates positive affect, i.e., factors common with all psychotherapies (Frank, 1961).

Therapeutic interventions are not necessary to improve the context in which a person lives. The extra-therapeutic context also affects outcome (Cuijpers et al., 2012). Travel and tourism are associated with better well-being (Kwon & Lee, 2020), in particular when tourism involves a 'happy' destination (Chen & Li, 2018) or a meaningful experience such as swimming with dolphins (Antonioli & Reveley, 2005; Webb & Drummond, 2001), or walking in natural contexts of high value (Barton, Hine, & Pretty, 2009; White et al., 2010). Achieving those more enjoyable and more meaningful experiences may be difficult for some people. The recovery movement (Davidson, 2016) provides lifestyle coaching where clients are encouraged to remember what created happiness in the past and how those past, happiness creating activities can be recovered, and the hope model (Cheavens, Heiy, Feldman, Benitez, & Rand, 2019; Snyder, 2002) encourages people to find ways of achieving their own goals. The concept of personal health budgets or social prescribing is based on the premise that patients may need financial help in making the lifestyle changes that promote recovery (Alderwick, Gottlieb, Fichtenberg, & Adler, 2018; O'Shea & Bindman, 2016). Finally, religiosity and spirituality provide a more positive interpretation of many contexts and are associated with improved well-being and reduced mental illness (Park et al., 2017), showing that socially mediated philosophies can also affect the context in which people live.

In summary, it is the context that both causes mental illness and is responsible for its remission. Any experience that satisfies goals signifying a good life can create a positive change in negative implicit beliefs. The experience that life is good can occur during the process of psychotherapy and other forms of therapy and through changes that are implemented in extra-therapeutic contexts.

10. Four features of the reformulated contextual model

There are four of the reformulated contextual model that distinguishes it from earlier models, the first being how draws on evolution theory. Wampold and Budge (Budge & Wampold, 2015; Wampold & Budge, 2012) cite the evolutionary significance of the relationship. Steinkopf (2015) cites the signalling effect of symptoms on the behavior of others in early society. Both are relevant but an additional focus is provided by this reformulation of the model.

The extraordinary survival of anatomically modern humans when all other co-existing hominids became extinct (Roberts, 2018) is due to successful group selection – selection for survival of the group rather than survival of the individual (Wilson, 1975). Group selection facilitates not only prosocial behavior of group members (altruism, relationship building etc.) but also role specialisation (Ainsworth, Baumeister, & Vohs, 2016; Gowdy & Krall, 2016). Honey bees evolved through group selection. Worker bees have several different roles: nursery bees, foragers, guards, or thermoregulators, with age dependent change in functions (Seeley, 2014; Stabentheiner, Kovac, & Brodschneider, 2010). In modern society, a mix of skills rather than uniformity of skills enhances group performance (Katzenbach & Smith, 2015).

Human survival was due to an ability to achieve a range of very different outcomes in highly varied environments by cooperative individuals whose innate or acquired differences created a skill mix. This evolutionary past is consistent with the observation that modern people differ in their goals and values (Maslow, 1943; Schwartz & Bilsky, 1987). In addition, age related changes in goals and behavior have an evolutionary basis. The extended life expectancy and unique post-reproductive period of anatomically modern humans is not found in other hominids (e.g., Neanderthals) and evolved as a cultural not a biological adaptation (Caspari & Lee, 2006). Non-reproductive individuals have no biological selective advantage. When drones (male honey bees) lose their reproductive function in the autumn they are expelled from the hive and die. Paleolithic grandparents, despite their weaker physique, provided selective advantage as information providers and educators carers of grandchildren (Aimé, André, & Raymond, 2017; Thouzeau & Raymond, 2017), a grandparenting function that differs from those of animals where there are reproductive grandparents (Péron et al., 2019). The evolutionary history of humans shows that, although relationships are important, survival depended on much more, for example, exploration and discovery, planning, nurturing, hunting and aggression, technological skills, education, remembering,

problem solving etc., which are summarised to some extent by the primary motives of self-determination theory, connection, autonomy and competence (Deci & Ryan, 2012). In brief, people evolved to do things that are perceived by them as meaningful but meaningful in different ways for different people and where meaning changes over the lifespan. Meaning in life is a strong predictor of health (Hooker, Masters, & Park, 2018), but what is rewarding or important for one person may not be for another. The reformulated contextual model presented here is predicated on individual differences in needs and goals that change over the lifespan.

A second feature of the reformulated contextual model is that the term *context* is being used in a different sense from earlier models where the context refers only to the psychotherapeutic context. In this model, the context refers to any context including the extra-therapeutic context. The extra-therapeutic context consists of events that have happened before the patient attends for treatment as well as the events that happen while or after the experience of treatment. Pre-therapy experiences are important. If a person experiences trauma, then implicit beliefs will incline towards danger. If a person is living a life that for them is unrewarding, then implicit beliefs will form that tend to interpret situations as unrewarding.

A third feature of the reformulated contextual model is that it is an interactional model, an idea that is implicit but not developed in earlier models. The optimum contextual change (which may be psychotherapy) is one that is concordant with the patient's goals or needs, a prediction consistent with studies of therapeutic relationship (Hill & Castonguay, 2017; Wampold, Baldwin, Holtforth, & Imel, 2017) and motivational concordance theory (Hyland, 2011; Hyland & Whalley, 2008; Hyland, Whalley, & Geraghty, 2007). In one study people were offered an inert complementary treatment (flower essences) that were presented as either a spiritual or non-spiritual therapy. Spiritually oriented people did better on the treatment presented as a spiritual treatment but not on the non-spiritual treatment therapy (Hyland & Whalley, 2008). Additionally, the perceived effectiveness of different interventions depends on concordance between the values associated with the intervention and the values of the person (Whalley & Hyland, 2009). The optimum therapy is one that matches the patient to the intervention. The optimum therapy changes the particular negative implicit beliefs that are causing symptoms for that particular patient.

A fourth feature of the model is that contextual and specific mechanisms are complementary rather than competitive. The mechanisms proposed by the contextual and specific models can contribute in different ways to correcting the same negative implicit belief. If the symptom is generalised anxiety, then implicit beliefs about generalised threat require changing and interventions that target beliefs at this level of generality will be most effective, for example, a supportive relationship, expectation of improvement, specific relaxation techniques, cognitive reframing and stress avoidance in everyday life. If the symptom is fear of spiders, then interventions that target that particular belief will be most effective, for example, desensitisation, flooding and the expectation that spiders will no longer be frightening. The nature of the fault determines the kind of interventions that are most effective, and both contextual and specific mechanisms can contribute to changing the same implicit belief.

There is a parallel between the reformulated contextual model and management of medical conditions. Expectancy has features in common with bed rest. If is helpful in many conditions, sometimes it is sufficient, but often it is best combined with other interventions that have a greater effect on the fault. The skilled psychotherapist has features in common with personalised medicine in providing an intervention that is specific to individual patient need. For both medicine and psychology, a particular fault can be corrected by many different mechanisms and interventions, but the success of treatment depends on correctly identifying the fault.

11. New predictions from the reformulated contextual model

A new theory is useful to the extent that it makes novel, testable predictions. Can the reformulated contextual model make novel predictions that lead to more effective treatment of depression and anxiety?

Prediction 1

Although adverse circumstances promote negative implicit beliefs, it is the behaviors that make those adverse circumstances persist that are most damaging in the formation of implicit beliefs. One would therefore predict that choosing and engaging in behaviors that create safety and reward is more therapeutic than simply experiencing safety and reward without behavioral commitment. Existing data shows that behavioral commitment is a key component of therapeutic change. The more effort invested by a client in a therapeutic regimen, the better the outcome of that regimen, irrespective of the type of regimen (Gaitan-Sierra & Hyland, 2011, 2015). Choice also improves outcome (Geers et al., 2013; Geers et al., 2019) and the act of choosing involves behavioral commitment. Diametrically opposite behaviors improve outcome compared to a no behavior control demonstrating the beneficial behavioral effects of the ritual (Kim, Wollburg, & Roth, 2012).

One prediction, therefore is that therapies that require and encourage behavioral commitment should lead to better outcome. For example, the act of deciding to visit a psychotherapist should lead to better outcome compared to a visit being organised by a relative or friend.

Prediction 2

The involvement of significant others is a common reason why people persist in activitis that are contrary to their automatically generated feelings. A person may persist in a hated job to maintain a family. A person may suppress their own needs in order to care for children or elderly relatives. A person may persist in a threatening situation to satisfy others' expectations. Where significant others are involved in the formation of anxiety or depression, then therapeutic change may need the understanding or adjustment of those significant others, consistent with reported benefits of family therapy (Diamond & Josephson, 2005; Fiese, Celano, Deater-Deckard, Jouriles, & Whisman, 2019; Stratton, 2016). When significant others create a barrier for a person living a good life, then therapy involving significant others and change in those significant others would be most productive in producing the contextual change that is needed.

Prediction 3

A third prediction is based on a corollary of the reformulated contextual model that each person has a unique route into anxiety or depression illness and each person a unique route out. The development of anxiety and depression is the consequence of a particular type of behavior-context interaction. Interventions may be most effective where a client identifies the historical antecedents of their illness and develops a plan that counteracts the effects of those antecedents. The patient's narrative of how illness developed should help guide the narrative of how to recover. Recovery needs change; an understanding of history helps prevent the mistakes of history being repeated. The patient's narrative into illness should help the patient find a route out and remain healthy.

12. The narrative

The 19th century narrative of mental illness is one of inherited mental weakness, a narrative that may have contributed to the long-standing stigma associated with mental illness. More recently, the

narrative of CBT is one of incorrect cognitions, the implication being that the person is irrational or has made some kind of mistake. Both these narratives provide an internal attribution of cause – the fault is due to an error in the person. The client's own narrative of their illness affects their response to treatment (Roberts, 2000).

One criticism of CBT is that it is a middle class treatment for middle class people whose lives are objectively good (Moloney & Kelly, 2004). Life is not always kind to people. The reformulated contextual model provides a narrative with an external attribution of blame and with an emphasis on changing the external context that has contributed to the person's problems. Rather than changing the client, the narrative is focuses on what the client (and others) can do to change the client's context. The personality characteristics that predict illness are positive personality characteristics (e.g., altruism, perfectionism) providing a positive, self-affirming narrative. People become ill not because they are mentally weak but because they are nice people trying do their best in difficult circumstances. The reformulated contextual model provides people with a narrative to understand why they are feeling the way they do and what they need to do to stop feeling that way.

There is no research on the narrative of the reformulated contextual model with people with mental health problems, but a very similar narrative has been used for patients with fibromyalgia (Hyland et al., 2016). Patients are told that their (medically unexplained) pain is a caused by their persisting in behaviors that cause pain, often because they have put others first and neglected their own needs (Hyland, 2017). Qualitative research shows that patients find this narrative consistent with prior experience, and the realisation that they can do something to help themselves is found to be empowering (Hyland et al., 2016), in contrast to other psychological explanations that often create strong negative reactions (Stone et al., 2002). The narrative of the reformulated contextual model may be one of its most useful features in clinical practice.

13. Effective therapy and the therapeutic relationship

The reformulated contextual model is supported by evidence that different types of psychotherapy are equally effective. There are two possible reasons for the data. One is that all psychotherapies are effective through the same common factors and same mechanisms. A second, which is consistent with the present model, is that equivalence between psychotherapies is an equivalence of mean outcome, not an equivalence for individual clients, some of whom do better with one and some do better than another type of intervention. In the study comparing different instructions for flower essences, the authors (Hyland & Whalley, 2008) found that although spiritually oriented people did better on the spiritually oriented therapy, there was no mean difference in effectiveness of the different types of instruction. Non-spiritual people did worse in the spiritual condition. The finding that on average different psychotherapies are equivalent may be due to some doing better and some worse on all forms of psychotherapy, consistent with Cronbach's claim that, because of individual differences, there is no best form of psychotherapy (Cronbach, 1957, 1975).

If, as the evidence shows, there is no a priori reason for selecting a particular type of psychotherapy but, as evidence also shows, psychotherapists differ themselves in terms of effectiveness, then a sensible recommendation for any patient is to find a therapist with a history of effective outcomes (Wampold, 2013). The recommendation from the reformulated contextual model is slightly different. The patient should find the right therapeutic context and this may or may not involve psychotherapy and a particular psychotherapist. In some cases the patient will recognise when the right therapeutic context 'feels right' but in other cases the patient may be in such a state of demoralisation that help is needed by the therapist in identifying what therapeutic context is needed. A skilled therapist working within the reformulated contextual model will be able to distinguish whether further psychotherapy sessions are needed or whether instead the patient is best served by reconnection to a previously held faith or community or a holiday in a meaningful place.

The therapeutic relationship is an important predictor of outcome (Hill & Castonguay, 2017; Wampold et al., 2017). The judgement of relationship is a system 1 judgement in that the process is not available to introspection. It is automatic and made in the first few minutes of the encounter between therapist and patient. The patient decides whether the therapy on offer 'feels right.' The judgement is based on cues spontaneously detected by the patient and which, according to the model here, informs the patient whether that interaction is likely to lead to the changes in relevant implicit beliefs.

A central feature of the reformulated contextual model is the recognition that people differ in their needs and values. The reason some therapists produce more effective relationships and better outcomes than others is that they are more perceptive in adapting their behavior to the particular needs of the patient (Hill & Castonguay, 2017; Wampold et al., 2017). The hypothesis that good therapists respond to individual patient need is consistent with placebo research showing better outcome occurs when the therapeutic intervention matches the needs and values of the patient (Hyland & Whalley, 2008).

The therapeutic relationship arises from two automatic system 1 processes: one that guides the perception of the patient or client and other that guides the behavior of the therapist. It is an intuitive interaction between two people. System 1 thinking cannot be taught except through experience (Kahneman, 2011), and the ability to create a therapeutic relationship may also reflect innate or life experiences that predispose people to feel what others feel. People who cry easily in films may make good psychotherapists. The difficulty in training this intuitive, automatic skill of relationship building explains why Carl Rogers wrote that he did not try to develop a skill in the therapists he trained but rather to develop an attitude towards clients (Rogers, 1951). The difference between automatic and rational thinking in psychotherapy is reflected in the conflict Rogers felt between the need for psychology to be a science in contrast to the intuition he experienced in the process of psychotherapy (Rogers, 1955).

> "I have felt an increasing discomfort at the distance between the rigorous objectivity of myself as scientist and the almost mystical subjectivity of myself as a therapist." (Rogers, 1955, p. 267).

Rogers may have been unaware that intuitive judgement is part of scientific discovery (Beveridge, 2017; Lin & Lien, 2013) and that experienced medical practitioners use system 1 thinking often to make better diagnostic decision making compared to rule following decisions (Hall, Weaver, Perino, Elder, & Verghese, 2018; Monteiro, Sherbino, Sibbald, & Norman, 2020; Norman et al., 2014).

Finally, it should be noted that psychotherapy is only one way of changing a person's context. There are many other ways of reducing negative implicit beliefs, for example, visiting a complementary therapist, going for walks in the countryside, taking part in religious activities, changing jobs or relationships, or finding a new hobby. The most effective route to recovery will vary with the patient's needs and circumstances.

Although this paper has focused on treatment, it is generally acknowledged that prevention is better than cure. Current prevention of mental illness focusses on the avoidance of adverse circumstances (Arango et al., 2018; McDaid, Park, & Wahlbeck, 2019). The reformulated contextual model predicts that, in addition, prevention requires a person (a) makes choices that satisfy the person's own particular needs, so that the person feels they have a rewarding and meaningful life (Hooker et al., 2018) and (b) avoids contexts that prevent people listening to what their bodies and minds are trying to tell them. Neither are easy in modern society.

Funding

This research received no specific grant.

Declaration of Competing Interest

None.

Acknowledgements

This paper owes much to the generous help and suggestions given by two anonymous reviewers both of whom provided insights and helped me correct weaknesses in an earlier draft.

References

Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*(1), 49–74. https://doi.org/10.1037/0021-843X.87.1.49.

Ach, N. (1910). *Über den Willen. [On volition].* Leipzig: Verlag von Quelle & Meyer.

Agusti, A., Bel, E., Thomas, M., Vogelmeier, C., Brusselle, G., Holgate, S., ... Beasley, R. (2016). Treatable traits: Toward precision medicine of chronic airway diseases. *European Respiratory Journal, 47*(2), 410–419. https://doi.org/10.1183/13993003.01359-2015.

Aimé, C., André, J. B., & Raymond, M. (2017). Grandmothering and cognitive resources are required for the emergence of menopause and extensive post-reproductive lifespan. *PLoS Computational Biology, 13*(7), https://doi.org/10.1371/journal.pcbi.1005631.

Ainsworth, S. E., Baumeister, R. F., & Vohs, K. D. (2016). Differentiation of individual selves facilitates group-level benefits of ultrasociality. *Behavioral and Brain Sciences, 39*, 16. https://doi.org/10.1017/s0140525x15001004.

Albahari, M. (2014). Alief or belief? A contextual approach to belief ascription. *Philosophical Studies, 167*(3), 701–720. https://doi.org/10.1007/s11098-013-0122-x.

Alderwick, H. A., Gottlieb, L. M., Fichtenberg, C. M., & Adler, N. E. (2018). Social prescribing in the US and England: Emerging interventions to address patients' social needs. *American Journal of Preventive Medicine, 54*(5), 715–718. https://doi.org/10.1016/j.amepre.2018.01.039.

Alzheimer, A. (2006). In M. Jucker, K. Beyreuther, C. Haass, R. M. Nitsch, & Y. Christen (Eds.). *Alzheimer: 100 years and beyond. Research and perspectives in Alzheimer's disease* (pp. 3–11). Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-540-37652-1_1 Concerning a unique disease of the cerebral cortex.

Antonioli, C., & Reveley, M. A. (2005). Randomised controlled trial of animal facilitated therapy with dolphins in the treatment of depression. *British Medical Journal, 331*(7527), 1231. https://doi.org/10.1136/bmj.331.7527.1231.

Arango, C., Díaz-Caneja, C. M., McGorry, P. D., Rapoport, J., Sommer, I. E., Vorstman, J. A., ... Carpenter, W. (2018). Preventive strategies for mental health. *The Lancet Psychiatry, 5*(7), 591–604. https://doi.org/10.1016/S2215-0366(18)30057-9.

Barlow, D. H. (2016). Paradigm clashes and progress: A personal reflection on a 50-year association with ABCT. *Cognitive and Behavioral Practice, 23*(4), 415–419. https://doi.org/10.1016/j.cbpra.2016.05.006.

Barton, J., Hine, R., & Pretty, J. (2009). The health benefits of walking in greenspaces of high natural and heritage value. *Journal of Integrative Environmental Sciences, 6*(4), 261–278. https://doi.org/10.1080/19438150903378425.

Beck, A. T. (1963). Thinking and depression: I. idiosyncratic content and cognitive distortions. *Archives of General Psychiatry, 9*(4), 324–333. https://doi.org/10.1001/archpsyc.1963.01720160014002.

Beck, A. T. (1964). Thinking and depression: II. Theory and therapy. *Archives of General Psychiatry, 10*(6), 561–571. https://doi.org/10.1001/archpsyc.1964.01720240015003.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects.* Pennsylvania, PA: University of Pennsylvania Press.

Beck, A. T., & Bredemeier, K. (2016). A unified model of depression: Integrating clinical, cognitive, biological, and evolutionary perspectives. *Clinical Psychological Science, 4*(4), 596–619. https://doi.org/10.1177/2167702616628523.

Beevers, C. G. (2005). Cognitive vulnerability to depression: A dual process model. *Clinical Psychology Review, 25*(7), 975–1002. https://doi.org/10.1016/j.cpr.2005.03.003.

Beveridge, W. I. B. (2017). *The art of scientific investigation.* Edizioni Savine.

Budge, S. L., & Wampold, B. E. (2015). The relationship: How it works. In O. C. G. Gelo, A. Pritz, & B. Rieken (Eds.). *Psychotherapy research: Foundations, process, and outcome* (pp. 213–228). Springer-Verlag Publishing. https://doi.org/10.1007/978-3-7091-1382-0_11.

Burger, J. M. (1984). Desire for control, locus of control, and proneness to depression. *Journal of Personality, 52*(1), 71–89. https://doi.org/10.1111/j.1467-6494.1984.tb00551.x.

Caspari, R., & Lee, S. H. (2006). Is human longevity a consequence of cultural change or modern biology? *American Journal of Physical Anthropology: The Official Publication of the American Association of Physical Anthropologists, 129*(4), 512–517. https://doi.org/10.1002/ajpa.20360.

Cheavens, J. S., Heiy, J. E., Feldman, D. B., Benitez, C., & Rand, K. L. (2019). Hope, goals, and pathways: Further validating the hope scale with observer ratings. *The Journal of Positive Psychology, 14*(4), 452–462. https://doi.org/10.1080/17439760.2018.1484937.

Chen, Y., & Li, X. R. (2018). Does a happy destination bring you happiness? Evidence from Swiss inbound tourism. *Tourism Management, 65*, 256–266. https://doi.org/10.1016/j.tourman.2017.10.009.

Chida, Y., & Hamer, M. (2008). Chronic psychosocial factors and acute physiological responses to laboratory-induced stress in healthy populations: A quantitative review of 30 years of investigations. *Psychological Bulletin, 134*(6), 829–885. https://doi.org/10.1037/a0013342.

Cronbach, L. J. (1957). The two disciplines of scientific psychology. *American Psychologist, 12*(11), 671–684. https://doi.org/10.1037/h0043943.

Cronbach, L. J. (1975). Beyond the two disciplines of scientific psychology. *American Psychologist, 30*(2), 116–127. https://doi.org/10.1037/h0076829.

Cuijpers, P., Driessen, E., Hollon, S. D., van Oppen, P., Barth, J., & Andersson, G. (2012). The efficacy of non-directive supportive therapy for adult depression: A meta-analysis. *Clinical Psychology Review, 32*(4), 280–291. https://doi.org/10.1016/j.cpr.2012.01.003.

Dasgupta, N. (2013). Implicit attitudes and beliefs adapt to situations: A decade of research on the malleability of implicit prejudice, stereotypes, and the self-concept. *Advances in experimental social psychology. Vol. 47. Advances in experimental social psychology* (pp. 233–279). Academic Press. https://doi.org/10.1016/b978-0-12-407236-7.00005-x.

Davidson, L. (2016). The recovery movement: Implications for mental health care and enabling people to participate fully in life. *Health Affairs, 35*(6), 1091–1097. https://doi.org/10.1377/hlthaff.2016.0153.

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.). *Handbook of theories of social psychology* (pp. 416–436). Sage Publications Ltd. https://doi.org/10.4135/9781446249215.n21.

Diamond, G., & Josephson, A. (2005). Family-based treatment research: A 10-year update. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(9), 872–887. https://doi.org/10.1097/01.chi.0000169010.96783.4e.

Dill, J., Erickson, R. J., & Diefendorff, J. M. (2016). Motivation in caring labor: Implications for the well-being and employment outcomes of nurses. *Social Science & Medicine, 167*, 99–106. https://doi.org/10.1016/j.socscimed.2016.07.028.

Ellis, R., & Humphreys, G. W. (1999). *Connectionist psychology: A text with readings.* Hove, England: Psychology Press.

Evans, J. S. B. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*, 255–278. https://doi.org/10.1146/annurev.psych.59.103006.093629.

Eysenck, H. J. (1961). Psychoanalysis-myth or science? *Inquiry, 4*(1–4), 1–15. https://doi.org/10.1080/00201746108601323.

de Felice, G., Giuliani, A., Halfon, S., Andreassi, S., Paoloni, G., & Orsucci, F. F. (2019). The misleading Dodo Bird verdict. How much of the outcome variance is explained by common and specific factors? *New Ideas in Psychology, 54*, 50–55. https://doi.org/10.1016/j.newideapsych.2019.01.006.

APA handbooks in psychology®. In B. H. Fiese, M. Celano, K. Deater-Deckard, E. N. Jouriles, & M. A. Whisman (Eds.). *APA handbook of contemporary family psychology: Family therapy and training*American Psychological Associationhttps://doi.org/10.1037/0000101-000.

Frank, J. D. (1961). *Persuasion and healing.* Baltimore, MD: John Hopkins University Press.

Frank, J. D. (1974). Psychotherapy: The restoration of morale. *American Journal of Psychiatry, 131*, 271–274. https://doi.org/10.1176/ajp.131.3.271.

Frank, J. D. (1986). Psychotherapy—The transformation of meanings: Discussion paper. *Journal of the Royal Society of Medicine, 79*(6), 341–346. https://doi.org/10.1177/014107688607900611.

Frankl, V. E. (1967). *Psychotherapy and existentialism.* New York, NY: Washington Square Press.

Freud, S. (1895). Project for a scientific psychology. *The standard edition of the complete works of Sigmund Freud*London: Hogarth Press Vol 1.

Freud, S. (1913). In A. A. Brill (Ed.). *The interpretation of dreams*New York: McMillan Trans.. (Original work published 1900).

Frostadottir, A. D., & Dorjee, D. (2019). Effects of mindfulness based cognitive therapy (MBCT) and compassion focused therapy (CFT) on symptom change, mindfulness, self-compassion and rumination in clients with depression, anxiety and stress. *Frontiers in Psychology, 10*, 1099. https://doi.org/10.3389/fpsyg.2019.01099.

Gaab, J., Blease, C., Locher, C., & Gerger, H. (2016). Go open: A plea for transparency in psychotherapy. *Psychology of Consciousness: Theory, Research, and Practice, 3*(2), 175–198. https://doi.org/10.1037/cns0000063.

Gaitan-Sierra, C., & Hyland, M. E. (2011). Nonspecific mechanisms that enhance well-being in health-promoting behaviors. *Health Psychology, 30*(6), 793–796. https://doi.org/10.1037/a0025582.

Gaitan-Sierra, C., & Hyland, M. E. (2015). Common factor mechanisms in clinical practice and their relationship with outcome. *Clinical Psychology & Psychotherapy, 22*(3), 258–266. https://doi.org/10.1002/cpp.1894.

Geers, A. L., Briñol, P., & Petty, R. E. (2019). An analysis of the basic processes of formation and change of placebo expectations. *Review of General Psychology, 23*(2), 211–229. https://doi.org/10.1037/gpr0000171.

Geers, A. L., Rose, J. P., Fowler, S. L., Rasinski, H. M., Brown, J. A., & Helfer, S. G. (2013). Why does choice enhance treatment effectiveness? Using placebo treatments to demonstrate the role of personal control. *Journal of Personality and Social Psychology, 105*(4), 549–566. https://doi.org/10.1037/a0034005.

Geers, A. L., Weiland, P. E., Kosbab, K., Landry, S. J., & Helfer, S. G. (2005). Goal activation, expectations, and the placebo effect. *Journal of Personality and Social Psychology, 89*(2), 143–159. https://doi.org/10.1037/0022-3514.89.2.143.

Gendler, T. (2019). Alief and belief. In J. Fantl, M. McGrath, & E. Sosa (Eds.). *Contemporary epistemology: An anthology* (pp. 91–109). Wiley Blackwell.

Gowdy, J., & Krall, L. (2016). The economic origins of ultrasociality. *Behavioral and Brain Sciences, 39*. https://doi.org/10.1017/s0140525x1500059x.

Haeffel, G. J., Abramson, L. Y., Brazy, P. C., Shah, J. Y., Teachman, B. A., & Nosek, B. A. (2007). Explicit and implicit cognition: A preliminary test of a dual-process theory of cognitive vulnerability to depression. *Behavior Research and Therapy, 45*(6),

1155–1167. https://doi.org/10.1016/j.brat.2006.09.003.
Hall, E. T., Weaver, K. W., Perino, A. C., Elder, A., & Verghese, A. (2018). "A man walks into a bar": Riddles in the teaching of medicine. *The American Journal of Medicine, 131*(9), 1000–1002. https://doi.org/10.1016/j.amjmed.2018.03.033.
Haug, M. (2011). Explaining the placebo effect: Aliefs, beliefs, and conditioning. *Philosophical Psychology, 24*(5), 679–698. https://doi.org/10.1080/09515089.2011.559624.
Hayes, S. C. (2016). The situation has clearly changed: So what are we going to do about it? *Cognitive and Behavioral Practice, 23*(4), 446–450. https://doi.org/10.1016/j.cbpra.2015.09.001.
Hill, C. E., & Castonguay (2017). Therapist effects: integration and conclusion. In L. G. Castonguay, & C. E. Hill (Eds.). *How and why are some therapists better than others?: Understanding therapist effects* (pp. 325–341). American Psychological Association. https://doi.org/10.1037/0000034-018.
Hooker, S. A., Masters, K. S., & Park, C. L. (2018). A meaningful life is a healthy life: A conceptual model linking meaning and meaning salience to health. *Review of General Psychology, 22*(1), 11–24. https://doi.org/10.1037/gpr0000115.
Houghton, G. (Ed.). (2004). *Connectionist models in cognitive psychology*. Psychology Press.
Hyland, M., & Scutt, W. (1991). Accounting for the evolution of psychosomatic phenomena: Did uncooperative upper Palaeolithic people become ill and die? In H. Bush, & M. Zvelebil (Eds.). *Oxford, Tempus Reparatum, British Archaeological Reports, International Series 567*. (pp. 23–29). . https://doi.org/10.1017/S0025727300036711.
Hyland, M. E. (1987). Control theory interpretation of psychological mechanisms of depression: Comparison and integration of several theories. *Psychological Bulletin, 102*(1), 109–121. https://doi.org/10.1037/0033-2909.102.1.109.
Hyland, M. E. (1988). Motivational control theory: An integrative framework. *Journal of Personality and Social Psychology, 55*(4), 642. https://doi.org/10.1037/0022-3514.55.4.642.
Hyland, M. E. (2005). A tale of two therapies: Psychotherapy and complementary and alternative medicine (CAM) and the human effect. *Clinical Medicine, 5*(4), 361–367. https://doi.org/10.7861/clinmedicine.5-4-361.
Hyland, M. E. (2011). Motivation and placebos: Do different mechanisms occur in different contexts? *Philosophical Transactions of the Royal Society B: Biological Sciences, 366*(1572), 1828–1837. https://doi.org/10.1098/rstb.2010.0391.
Hyland, M. E. (2017). A new paradigm to explain functional disorders and the adaptive network theory of chronic fatigue syndrome and fibromyalgia syndrome. In G. B. Sullivan, J. Cresswell, B. Ellis, M. Morgan, & E. Schraube (Eds.). *Resistance and renewal in theoretical psychology* (pp. 21–31). Captus University Publications.
Hyland, M. E. (2019). *A history of psychology in ten questions.* Routledge.
Hyland, M. E., Hinton, C., Hill, C., Whalley, B., Jones, R. C., & Davies, A. F. (2016). Explaining unexplained pain to fibromyalgia patients: Finding a narrative that is acceptable to patients and provides a rationale for evidence based interventions. *British Journal of Pain, 10*(3), 156–161. https://doi.org/10.1177/2049463716642601.
Hyland, M. E., & Whalley, B. (2008). Motivational concordance: An important mechanism in self-help therapeutic rituals involving inert (placebo) substances. *Journal of Psychosomatic Research, 65*(5), 405–413. https://doi.org/10.1016/j.jpsychores.2008.02.006.
Hyland, M. E., Whalley, B., & Geraghty, A. W. (2007). Dispositional predictors of placebo responding: A motivational interpretation of flower essence and gratitude therapy. *Journal of Psychosomatic Research, 62*(3), 331–340. https://doi.org/10.1016/j.jpsychores.2006.10.006.
Jensen, K., & Kelley, J. M. (2016). The therapeutic relationship in psychological and physical treatments, and their placebo controls. *Psychology of Consciousness: Theory, Research, and Practice, 3*(2), 132–145. https://doi.org/10.1037/cns0000057.
Jørgensen, C. (2019). Psychotherapy as sociocultural practice. In C. Jørgensen (Ed.). *The psychotherapeutic stance* (pp. 25–28). Cham: Springer.
Kahneman, D. (2011). *Thinking, fast and slow.* London, UK: Palgrave MacMillan.
Katzenbach, J. R., & Smith, D. K. (2015). *The wisdom of teams: Creating the high-performance organization.* Harvard Business Review Press.
Kibler, E., Wincent, J., Kautonen, T., Cacciotti, G., & Obschonka, M. (2019). Can prosocial motivation harm entrepreneurs' subjective well-being? *Journal of Business Venturing, 34*(4), 608–624. https://doi.org/10.1016/j.jbusvent.2018.10.003.
Kim, S., Wollburg, E., & Roth, W. T. (2012). Opposing breathing therapies for panic disorder: Randomized controlled trial of lowering vs raising end-tidal Pco. *The Journal of Clinical Psychiatry, 73*(7), 931–939. https://doi.org/10.4088/JCP.11m07068.
Kirsch, I. (1985). Response expectancy as a determinant of experience and behavior. *American Psychologist, 40*(11), 1189–1202. https://doi.org/10.1037//0003-066x.40.11.1189.
Kong, J., Wilson, G., Park, J., Pereira, K., Walpole, C., & Yeung, A. (2019). Treating depression with Tai Chi: State of the art and future perspectives. *Frontiers in Psychiatry, 10*. https://doi.org/10.3389/fpsyt.2019.00237.
Kube, T., Blease, C., Ballou, S. K., & Kaptchuk, T. J. (2019). Hope in medicine: Applying multidisciplinary insights. *Perspectives in Biology and Medicine, 62*(4), 591–616. https://doi.org/10.1353/pbm.2019.0035.
Kuhn, T. S. (1962). *The structure of scientific revolutions.* University of Chicago Press.
Kurdi, B., Mann, T. C., Charlesworth, T. E., & Banaji, M. R. (2019). The relationship between implicit intergroup attitudes and beliefs. *Proceedings of the National Academy of Sciences, 116*(13), 5862–5871. https://doi.org/10.1073/pnas.1820240116.
Kwon, J., & Lee, H. (2020). Why travel prolongs happiness: Longitudinal analysis using a latent growth model. *Tourism Management, 76*, Article 103944. https://doi.org/10.1016/j.tourman.2019.06.019.
Lakatos, I. (1971). History of science and its rational reconstructions. In R. C. Buck, & R. S. Cohen (Vol. Eds.), *PSA 1970. Boston studies in the philosophy of science. Vol. 8.* Dordrecht: Springer.
Lin, W. L., & Lien, Y. W. (2013). The different role of working memory in open-ended versus closed-ended creative problem solving: A dual-process theory account. *Creativity Research Journal, 25*(1), 85–96. https://doi.org/10.1080/10400419.2013.752249.
Maier, S. F., & Seligman, M. E. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General, 105*(1), 3–46. https://doi.org/10.1037//0096-3445.105.1.3.
Maji, S., & Dixit, S. (2019). Self-silencing and women's health: A review. *International Journal of Social Psychiatry, 65*(1), 3–13. https://doi.org/10.1177/0020764018814271.
Marbe, K. (1901). *Experimentell-psychologische Untersuchungen über das Urteil. Eine Einleitung in die Logik. [Experimental-psychological Investigations of the Judgement. An Introduction into Logic].* Leipzig: Engelmann.
Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396. https://doi.org/10.1037/h0054346.
McDaid, D., Park, A. L., & Wahlbeck, K. (2019). The economic case for the prevention of mental illness. *Annual Review of Public Health, 40*, 373–389. https://doi.org/10.1146/annurev-publhealth-040617-013629.
McDonald, A. S. (2001). The prevalence and effects of test anxiety in school children. *Educational Psychology, 21*(1), 89–101. https://doi.org/10.1080/01443410020019867.
Moerman, D. E., & Jonas, W. B. (2002). Deconstructing the placebo effect and finding the meaning response. *Annals of Internal Medicine, 136*(6), 471–476. https://doi.org/10.7326/0003-4819-136-6-200203190-00011.
Moloney, P., & Kelly, P. (2004). Beck never lived in Birmingham: Why CBT may be a less useful treatment for psychological distress than is often supposed. *Clinical Psychology, 34*, 4–10.
Monteiro, S., Sherbino, J., Sibbald, M., & Norman, G. (2020). Critical thinking, biases and dual processing: The enduring myth of generalisable skills. *Medical Education, 54*(1), 66–73. https://doi.org/10.1111/medu.13872.
Moreira, P., Vaz, J. M., Stevanovic, D., Atilola, O., Dodig-Ćurković, K., Franic, T., ... Campos, M. L. A. (2020). Locus of control, negative live events and psychopathological symptoms in collectivist adolescents. *Personality and Individual Differences, 154*, Article 109601. https://doi.org/10.1016/j.paid.2019.109601.
Morgan, J. J. B. (1944). Effect of non-rational factors on inductive reasoning. *Journal of Experimental Psychology, 34*(2), 159–168. https://doi.org/10.1037/h0062935.
Moroz, M., & Dunkley, D. M. (2019). Self-critical perfectionism, experiential avoidance, and depressive and anxious symptoms over two years: A three-wave longitudinal study. *Behavior Research and Therapy, 112*, 18–27. https://doi.org/10.1016/j.brat.2018.11.006.
Norman, G., Sherbino, J., Dore, K., Wood, T., Young, M., Gaissmaier, W., ... Monteiro, S. (2014). The etiology of diagnostic errors: A controlled trial of system 1 versus system 2 reasoning. *Academic Medicine, 89*(2), 277–284. https://doi.org/10.1097/acm.0000000000000105.
O'Shea, L., & Bindman, A. B. (2016). Personal health budgets for patients with complex needs. *New England Journal of Medicine, 375*(19), 1815–1817. https://doi.org/10.1056/nejmp1606040.
Park, C. L., Masters, K. S., Salsman, J. M., Wachholtz, A., Clements, A. D., Salmoirago-Blotcher, E., ... Wischenka, D. M. (2017). Advancing our understanding of religion and spirituality in the context of behavioral medicine. *Journal of Behavioral Medicine, 40*(1), 39–51. https://doi.org/10.1007/s10865-016-9755-5.
Péron, G., Bonenfant, C., Lemaitre, J. F., Ronget, V., Tidiere, M., & Gaillard, J. M. (2019). Does grandparental care select for a longer lifespan in non-human mammals? *Biological Journal of the Linnean Society, 128*(2), 360–372. https://doi.org/10.1093/biolinnean/blz078.
Porter, R. (1996). *The Cambridge illustrated history of medicine.* Cambridge: Cambridge University Press.
Rapaport, M. H., Schettler, P. J., Larson, E. R., Carroll, D., Sharenko, M., Nettles, J., & Kinkead, B. (2018). Massage therapy for psychiatric disorders. *Focus, 16*(1), 24–31. https://doi.org/10.1176/appi.focus.20170043.
Roberts, A. (2018). *Evolution: the human story.* Dorling Kindersley ltd.
Roberts, G. A. (2000). Narrative and severe mental illness: What place do stories have in an evidence-based world? *Advances in Psychiatric Treatment, 6*(6), 432–441. https://doi.org/10.1192/apt.6.6.432.
Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications, and theory.* Boston: Houghton Mifflin.
Rogers, C. R. (1955). Persons or science? A philosophical question. *American Psychologist, 10*(7), 267–278. https://doi.org/10.1037/h0040999.
Rosenzweig, S. (1936). Some implicit common factors in diverse methods of psychotherapy. *American Journal of Orthopsychiatry, 6*(3), 412–415. https://doi.org/10.1111/j.1939-0025.1936.tb05248.x.
Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology, 53*(3), 550–562. https://doi.org/10.1037/0022-3514.53.3.550.
Seeley, T. D. (2014). *Honeybee ecology: A study of adaptation in social life.* Princeton University Press.
Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2017). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism? *Journal of Individual Differences. 38*(2), 63–70. https://doi.org/10.1027/1614-0001/a000223.
Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 13*(4), 249–275. https://doi.org/10.1207/s15327965pli1304_01.
Stabentheiner, A., Kovac, H., & Brodschneider, R. (2010). Honeybee colony thermoregulation–regulatory mechanisms and contribution of individuals in dependence on age, location and thermal stress. *PLoS One, 5*(1), https://doi.org/10.1371/journal.

pone.0008967.
Steinkopf, L. (2015). The signaling theory of symptoms: An evolutionary explanation of the placebo effect. *Evolutionary Psychology, 13*(3), https://doi.org/10.1177/1474704915600559 1474704915600559.
Stone, J., Wojcik, W., Durrance, D., Carson, A., Lewis, S., MacKenzie, L., ... Sharpe, M. (2002). What should we say to patients with symptoms unexplained by disease? The "number needed to offend". *British Medical Journal, 325*(7378), 1449–1450. https://doi.org/10.1136/bmj.325.7378.1449.
Stratton, P. (2016). The evidence base of family therapy and systemic practice. *Association for Family Therapy and Systemic Practice UK*.
Svendsen, J. L., Kvernenes, K. V., Wiker, A. S., & Dundas, I. (2017). Mechanisms of mindfulness: Rumination and self-compassion. *Nordic Psychology, 69*(2), 71–82. https://doi.org/10.1080/19012276.2016.1171730.
Tafarodi, R. W., & Smith, A. J. (2001). Individualism–collectivism and depressive sensitivity to life events:: The case of Malaysian sojourners. *International Journal of Intercultural Relations, 25*(1), 73–88. https://doi.org/10.1016/s0147-1767(00)00043-2.
Teachman, B. A., Clerkin, E. M., Cunningham, W. A., Dreyer-Oren, S., & Werntz, A. (2019). Implicit cognition and psychopathology: Looking back and looking forward. *Annual Review of Clinical Psychology, 15*, 123–148. https://doi.org/10.1146/annurev-clinpsy-050718-095718.
Thouzeau, V., & Raymond, M. (2017). Emergence and maintenance of menopause in humans: A game theory model. *Journal of Theoretical Biology, 430*, 229–236. https://doi.org/10.1016/j.jtbi.2017.07.019.
Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*(4157), 1124–1131. https://doi.org/10.1126/science.185.4157.1124.
Uebelacker, L. A., & Broughton, M. K. (2018). Yoga for depression and anxiety: A review of published research and implications for healthcare providers. *Focus, 16*(1), 95–97. https://doi.org/10.1176/appi.focus.16104.
Vaillancourt-Morel, M. P., Bergeron, S., Blais, M., & Hébert, M. (2019). Longitudinal associations between childhood sexual abuse, silencing the self, and sexual self-efficacy in adolescents. *Archives of Sexual Behavior, 48*(7), 2125–2135. https://doi.org/10.1007/s10508-019-01494-z.
Vissers, W., Hutschemaekers, G., Keijsers, G., Van der Veld, W., & Hendriks, G. J. (2010). Utility of measuring remoralization in addition to symptoms in efficacy research: A preliminary study. *Psychotherapy Research, 20*(5), 611–618. https://doi.org/10.1080/10503307.2010.496469.
Walker, M. J., Bourke, J., & Hutchison, K. (2019). Evidence for personalised medicine: Mechanisms, correlation, and new kinds of black box. *Theoretical Medicine and Bioethics, 40*(2), 103–121. https://doi.org/10.1007/s11017-019-09482-z.
Wampold, B. E. (2013). *The great psychotherapy debate: Models, methods, and findings.* Routledge.
Wampold, B. E., Baldwin, S. A., Holtforth, M.g., & Imel, Z. E. (2017). What characterizes effective therapists? In L. G. Castonguay, & C. E. Hill (Eds.). *How and why are some therapists better than others?: Understanding therapist effects* (pp. 37–53). American Psychological Association. https://doi.org/10.1037/0000034-003.
Wampold, B. E., & Budge, S. L. (2012). The 2011 Leona Tyler Award Address: The relationship—And its relationship to the common and specific factors of psychotherapy. *The Counseling Psychologist, 40*(4), 601–623. https://doi.org/10.1177/0011000011432709.
Wampold, B. E., & Imel, Z. E. (2015). *The great psychotherapy debate: The evidence for what makes psychotherapy work.* Routledge.
Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H.-n. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empiricially, "all must have prizes". *Psychological Bulletin, 122*(3), 203–215. https://doi.org/10.1037/0033-2909.122.3.203.
Watson, J. B., & Rayner, R. (1920). Conditioned emotional reactions. *Journal of Experimental Psychology, 3*(1), 1–14. https://psycnet.apa.org/record/2006-01667-001.
Webb, N. L., & Drummond, P. D. (2001). The effect of swimming with dolphins on human well-being and anxiety. *Anthrozoös, 14*(2), 81–85. https://doi.org/10.2752/089279301786999526.
Whalley, B., & Hyland, M. E. (2009). One size does not fit all: Motivational predictors of contextual benefits of therapy. *Psychology and Psychotherapy: Theory, Research and Practice, 82*(3), 291–303. https://doi.org/10.1348/147608309x413275.
White, M. P., Smith, A., Humphries, K., Pahl, S., Snelling, D., & Depledge, M. (2010). Blue space: The importance of water for preference, affect and restorativeness ratings of natural and built scenes. *Journal of Environmental Psychology, 30*, 482–493. https://doi.org/10.1016/j.jenvp.2010.04.004.
Wilson, D. S. (1975). A theory of group selection. *Proceedings of the National Academy of Sciences, 72*(1), 143–146. https://doi.org/10.1073/pnas.72.1.143.
World Health Organization (2017). *Depression and other common mental disorders: Global health estimates (No. WHO/MSD/MER/2017.2).* World Health Organization.
Yalom, I. D. (1980). *Existential psychotherapy.* New York: Basic Books.

Michael E. Hyland is a fellow of the British Psychological Society, a Distinguished International Affiliate of Division 38 of the American Psychological Association, is a chartered health psychologist. He obtained a BSc at Bristol University in 1971 and a PhD at the University of Wales in 1977. He was appointed Professor of Health Psychology at the University of Plymouth in 1996 and retired in 2018. He is currently an Honorary Professor at the University of Plymouth, and part time Professor of Health Psychology at Plymouth Marjon University.

His early career was as a theoretical psychologist, working on the nature of theoretical entities particularly in relation to mind-body problems as well as using control theory as a way of integrating theories of depression and motivation.

From the late 1980s he worked as a health psychologist focusing on respiratory disease. He has constructed several outcome and management scales for use in respiratory disease, including the lung information needs questionnaire (LINQ), the DOSE index and most recently the severe asthma questionnaire (SAQ). His research in respiratory medicine includes studies on adherence to medication and its relation to outcome, and the management and outcome of severe asthma in relation to new treatments and the extrapulmonary symptoms of severe asthma.

In the early 1990s he started a program of research on placebos, developing a new theory, motivational concordance, which provided evidence of the importance of motivational and affective factors in placebo effects. By 2000 his research had expanded to examine how contextual factors were relevant to the cause and treatment of medically unexplained symptoms leading to a new theory based on complexity theory. This theory formed the basis for a treatment narrative for fibromyalgia called body reprogramming (www.bodyreprogramming.org) currently being used in the UK.

In addition to his research, Michael Hyland has contributed to psychology education, his six book including two textbooks for nurses, a book for the general public on stress and most recently a history of psychology for psychology students.