

RUNNING HEAD: PSYCHOTHERAPY

Riding the Waves:
A Functional-Cognitive Perspective on the Relations Among Behavior Therapy,
Cognitive Behavior Therapy, and Acceptance and Commitment Therapy

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Abstract

Different types of therapy explain psychopathology and the effects of psychotherapy differently. Different explanations are, however, not necessarily mutually exclusive. Based on the idea that functional and cognitive explanations are situated at different levels, we argue that functional therapies such as traditional Behavior Therapy (BT) and Acceptance and Commitment Therapy (ACT) are not necessarily incompatible with Cognitive Behavior Therapy (CBT). Whether a functional and a cognitive therapy actually align depends on whether they highlight the same type of environmental causes. This functional-cognitive perspective reveals various differences and communalities among BT, CBT, and ACT.

Keywords: psychotherapy, behavior therapy, cognitive behavior therapy, acceptance and commitment therapy

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Within the realm of psychotherapy, different types of therapy can be distinguished. It is, however, not always clear how these relate to one another. For example, attempts to distinguish the different schools of therapy on the basis of therapeutic techniques are problematic because therapeutic practice shows considerable overlap across therapists from all traditions (Garfield, 2006). Clearer differences are evident in how they explain psychopathology and the effectiveness of their techniques. For example, broadly speaking, traditional Behavior Therapy (BT) explains psychopathology and psychotherapy in terms of functional relations between environment and behavior (e.g., stimulus pairings during traumatic events, see Kohlenberg, Hayes, & Tsai, 1993), while Cognitive Behavior Therapy (CBT) focuses on mental causation (e.g., associations in memory, see Jacobson et al., 1986).

When relating different types of therapy via explanations for psychopathology and psychotherapy, it is important to realize that different explanations are not necessarily incompatible. Here, we adopt a functional-cognitive framework in which functional and cognitive explanations are situated at different, complementary levels (De Houwer, 2011). Take the example of an individual with an extreme fear of elevators. According to one functional explanation, the current fear relates to a former event (being trapped in the elevator) in which the individual experienced a panic attack. Hence, fear in the current context is a function of (i.e., influenced by) that environmental event in the history of the individual (hence the term *functional* explanation). In contrast, a cognitive explanation might attribute the fear to an association between the mental representations of elevators and panic. At first sight, these explanations seem incompatible because they point to different causes of

the same behavior (see Figure 1 A and B). However, the causes to which they point are fundamentally different. In the simplest possible terms, the functional explanation points to one *likely environmentally-based source* of fear (i.e., the panic attack in the elevator), while the cognitive explanation points at a *mental mechanism* (i.e., the formation and activation of associations in memory). These explanations are compatible because the mental mechanism is a potential mediator of the impact of the environmental influence on behavior. More specifically, the panic attack might lead to fear because it leads to associations in memory that impact on behavior (see Figure 1C). From this functional-cognitive perspective, the two explanations complement each other, rather than compete. Once again, please note that we are describing each approach in very simplistic terms and thus deliberately avoiding the details of each side, but this is in the service of making an overarching point. That is, adopting a functional-cognitive perspective can help expose and avoid misguided debates between functional and cognitive researchers. It also allows functional and cognitive researchers to interact in constructive ways, for instance, by exchanging empirical findings and theoretical concepts and ideas.

Although explanations at the functional and cognitive level can be compatible, the two levels of explanation should not be collapsed because, unlike cognitive explanations, functional explanations do not make assumptions about mediating mechanisms. Hence, a single functional explanation is in principle compatible with multiple mechanistic explanations. For instance, stimulus pairings during a panic attack might lead to fear because of the formation of stimulus-response [S-R] associations, stimulus-stimulus [S-S] associations, or propositional beliefs (De Houwer, Barnes-Holmes, & Moors, 2013). More abstractly, functional explanations relate to cognitive explanations in a one-to-many fashion. Hence, even when functional and cognitive explanations align (i.e., identify the same

environmental cause), they should not be equated (see De Houwer & Moors, in press). Moreover, because functional and cognitive psychology are directed at fundamentally different aims (i.e., prediction-and-influence versus modeling of mediating mechanisms, respectively), the two approaches will necessarily differ in when an explanation is considered to be satisfactory.

Despite these fundamental differences, the functional-cognitive framework offers a way to relate cognitive and functional explanations, also as they apply to psychotherapy, thus allowing functional and cognitive approaches to interact in a potentially constructive manner. Below, we explore the implications of the functional-cognitive framework for the relationships among BT, CBT, and Acceptance and Commitment Therapy (ACT). Although our analysis can be extended to other types of therapy, we focus on these three because they all have roots within a single (behavioral) tradition of psychotherapy (Hayes, 2004).

Traditional Behavior Therapy

Historically, BT originated within functional psychology. In traditional BT, an understanding of psychopathology was organized around general principles about relations between environment and behavior, particularly classical and operant conditioning. As a general functional principle, classical conditioning, for instance, entails that the pairing of stimuli can influence behavior. It is 'functional' in referring only to the relation between environment and behavior; it is 'general' in that it applies to all kinds of stimuli and behavior. Classical conditioning encompasses subclasses that differ in terms of the stimuli or responses involved. For instance, fear conditioning is a subclass that concerns changes in fear responses (see De Houwer et al., 2013).

Let us return to the person with the disabling fear of elevators. Traditional BT might put forward the hypothesis that this is an instance of conditioned fear that arose from an

environmental event (e.g., panic attack in an elevator) in which elevators were paired with an aversive experience (analogous to fear acquisition in a laboratory context).¹ This hypothesis implies that knowledge about fear conditioning in general might apply to this specific instance of fear conditioning. For example, knowledge about extinction of fear conditioning in the laboratory suggests (at least in traditional BT terms) that exposing the sufferer to elevators in the absence of further aversive events should reduce the fear. It is, therefore, not surprising that traditional BT maintained tight links with academic psychology because both were employing the same general principles and any novel insight regarding these that was generated in the laboratory might help understand and treat atypical examples of behavior in clinical practice.

Despite its functional origins, traditional BT is sometimes considered a clinical application of S-R association formation theories (e.g., see Foa, Steketee, & Olasov-Rothbaum, 1989). This misconception probably relates to the common failure to distinguish between classical and operant conditioning as functional principles, and the formation of S-R associations as a mediating mechanism (e.g., Byrne & Bates, 2006). S-R theories, like cognitive theories, go beyond the identification of functional environment-behavior relations by postulating a potential mechanistic explanation of these relations (i.e., pairings influence behavior via the formation of S-R associations). Because of this fundamental difference, neither conditioning as a general functional principle, nor BT as the application of that principle, should be equated with S-R theories or any other mediating mechanism (De

¹ We realize that this example strongly simplifies the complexity of functional analyses in clinical practice. We also realize that the concept “fear” is problematic from a functional perspective because it is unclear whether it refers to the act of feeling or some other pattern of behavior (also see Barnes-Holmes & Hussey, this issue). Moreover, our example focuses merely on the role of classical conditioning whereas in many strands of traditional BT, behavioral principles as they relate to operant conditioning are much more prominent. We nevertheless decided to use this example because it allowed us to illustrate in the simplest possible terms the relations among BT, CBT, and ACT.

Houwer, 2011; Eelen, 1980).

Cognitive Behavior Therapy

CBT encompasses many different approaches, most of which are explicitly cognitive in nature in explaining psychopathology and psychotherapy as the (maladaptive) operation of mental processes and representations (Jacobson et al., 1986). Because CBT is situated at a different level of explanation than BT, CBT and BT are not necessarily incompatible. Consider approaches within CBT that are built on S-S theories of conditioning (see Craske, Hermans, & Vansteenwegen, 2006). S-S theories postulate that behavior is driven by associations between stimulus representations in memory. These theories are cognitive not only in emphasizing mental (stimulus) representations, but in attributing a key role to mental processes such as attention (e.g., Rescorla, 1988). Notwithstanding their cognitive nature, S-S theories are in principle compatible with traditional BT because they encompass the idea that stimulus pairings are the environmental cause of psychopathology (e.g., that stimulus pairings during a traumatic event lead to the formation of S-S associations in memory which in turn lead to a disabling fear of elevators; see Figure 1C). In this case, BT and CBT align because the explanations converge with regard to the environmental cause that is identified (i.e., the pairing of stimuli).

Often, however, BT and CBT explanations *do not* align. For instance, some approaches in CBT explain psychopathology in terms of complex representational structures, such as schemata that are assumed to depend on more than simple stimulus pairings (e.g., Young, Klosko, & Weishaar, 2003). In these cases, CBT and BT explanations of psychopathology and psychotherapy are likely to be incompatible, not because one type of explanation is cognitive and the other functional, but because they point at different environmental causes (e.g., simple stimulus pairings versus more complex events that lead to

the formation of schemata). It might, however, be difficult to readily determine whether BT and CBT explanations are compatible because CBT theories (like other cognitive theories) often say little about the environmental origins of mental processes and representations.

Finally, even when a CBT explanation does not align with a BT explanation, it may still align with other functional types of therapy. At the risk of oversimplifying, traditional BT focuses on a rather limited set of environmental causes, namely contingencies involving stimuli and behaviors. Functional explanations (including explanations of psychopathology and psychotherapy) are, however, not necessarily limited to these contingencies. Hence, functional types of therapy that consider a broader range of environmental causes might well align with CBT, even when traditional BT does not.

Acceptance and Commitment Therapy

ACT is organized around psychological flexibility as a defining feature of psychological well-being (see Hayes, Strosahl, & Wilson, 1999). In addition to core concepts such as acceptance, defusion, and values, ACT practitioners draw on a range of non-technical concepts to help describe or explain clinical phenomena and change processes (e.g., rule-governance and mindfulness; see Blackledge & Drake, 2013). Although these non-technical concepts are not strictly functional (i.e., they are non-technical in that they defy a precise definition in terms of the relation between environment and behavior), ACT is rooted in functional psychology and considers psychopathology as instances of general functional principles. It shares with traditional BT a firm basis on the metaphor of context and operant principles. In addition, ACT puts verbal behavior at its center. Verbal behavior is conceptualized functionally as the ability to respond relationally (i.e., on the basis of a relation between stimuli rather than the properties of an individual stimulus) in ways that go beyond physical or nonarbitrary properties (see Stewart & McElwee, 2009). For instance, the

fact that people often prefer a dime (10 cents) over a nickel (5 cents) is based on social whim rather than the formal properties of those coins (e.g., the fact that a dime is physical smaller than a nickel). This ability to relationally respond in an arbitrarily applicable manner has been studied at the functional level by identifying the distal learning history that gives rise to this phenomenon (i.e., particular childhood experiences) and the proximal cues that moderate this type of verbal behavior (e.g., behavior is more likely to reflect the monetary value of a dime when paying at a vending machine than when scratching a lottery ticket). Relational Frame Theory (RFT) provides a detailed functional account of this type of behavior, known as arbitrarily applicable relational responding (AARR) and makes explicit how many facets of human behavior, especially complex verbal behavior, can be conceptualized as instances of AARR (e.g., Hayes, Barnes-Holmes, & Roche, 2001).

Just as traditional BT can be seen as the clinical application of the general principles of classical and operant conditioning, one might conceptualize ACT as the clinical application of the general principle of AARR or, more broadly, of RFT. Such a conceptualization does not, however, correspond to the actual state of affairs. While RFT has amassed strong empirical support, the theory has not been readily translated into therapeutic techniques. Hence, it does not form the basis of ACT, nor indeed any other therapy (see Barnes-Holmes, Hussey, McEnteggart, Barnes-Holmes & Foody, in press). Although both RFT and ACT hail from the same roots in functional contextualism, one as a theory and the other as a therapeutic program, they have different aims and objectives that are not always compatible. Indeed, it is now a strong focus for certain groups of functional researchers to articulate how these two agendas might be more directly aligned (e.g., Villatte, Villatte, & Hayes, in press).

So how can we conceive of the relation between ACT and BT? On the one hand, the

use of terms that are not strictly functional allows ACT (and other third wave behavior therapies; Hayes, 2004) to provide a more sophisticated approach to psychopathology and its treatment than traditional BT, while retaining some of the traditional BT hallmarks, such as an emphasis on context, operant responding, and skills building and shaping. On the other hand, ACT is difficult to fully reconcile with BT because some of its concepts are not strictly functional. In principle, this tension between ACT and BT could be resolved by aligning ACT more fully with RFT. This would encourage ACT practitioners to use functional-analytic concepts and to conceptualize both psychopathology and psychotherapy as AARR. As such, ACT would rejoin BT at the functional level of explanation. In doing so, ACT would dramatically enrich functional explanations of psychopathology and psychotherapy because it focuses on functional principles such as AARR that were not part of traditional BT.

What about the relation between ACT and CBT? Indeed, while clinicians frequently categorize ACT as a form of CBT, the relationship between the two approaches has been a matter of considerable debate (see Flaxman, Blackledge, & Bond, 2011). As it stands, neither ACT nor RFT are well aligned with S-S based approaches in CBT. S-S associations do not encode information about how stimuli are related. For instance, the mere association between the representation of an elevator and the representation of panic does not specify whether the individual believes that being in an elevator *causes* panic or merely *predicts* that a panic attack might occur. Because of this lack of relational information, it is unlikely that the formation of S-S associations provides a plausible mechanism for AARR (Hughes, Barnes-Holmes, & De Houwer, 2011). Some have argued that AARR might be mediated by the formation and activation of propositional beliefs that do encode relational information (see Hughes et al., 2011). Interestingly, propositional beliefs are also central in many CBT approaches (e.g., Young et al., 2003). Hence, ACT and RFT might be more likely to align

with these approaches than with S-S based CBT. In any case, once cognitive theories of AARR have been developed, RFT and ACT researchers can use these as a source of inspiration for new hypotheses about AARR. Likewise, cognitive researchers and therapists could turn to RFT and ACT for sophisticated ways of explicating the functional implications of their cognitive theories. More specifically, it could facilitate the identification and characterization of the environmental events that produce mediating mental constructs such as schemata and the contextual cues moderate the activity of those schemata. Functional and cognitively oriented researchers and practitioners could thus engage in potentially fruitful interactions, while remaining true to their aims (De Houwer, 2011).

Conclusion

Within the confines of this short paper, we provided a first sketch of how BT, CBT, and ACT are related from a functional-cognitive perspective. Functional approaches in psychotherapy, such as BT and ACT, are not necessarily incompatible with cognitive approaches such as CBT. This realization opens up the possibility of constructive dialogues between functional and cognitive psychotherapies. Because they operate at different levels of explanation, functional and cognitive approaches in psychotherapy are, and will, always be fundamentally different. However, little can be lost by exploring the potential benefits of interactions between the two.

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Figure 1. Overview of different ways in which the relation between functional and cognitive explanations can be conceived.

Figure 1

