

Acceptance and Commitment Therapy (ACT) in the Treatment of Panic Disorder: Some Considerations from the Research on Basic Processes

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ABSTRACT

The prevalence of panic disorder with and without agoraphobia as well as its personal and economic impact is encouraging researchers and clinicians to improve the available psychological treatments. Cognitive-behavioral therapy for panic disorder has yielded large size effects, still the literature on treatment outcomes (efficacy, effectiveness, and efficiency) points out some inconclusive results which deserve further consideration. Acceptance and Commitment Therapy (ACT) is proving very useful in the treatment of a broad range of psychological problems, anxiety disorders included, although the empirical evidence for the latest is limited yet. In the present paper, we present a review of the basic research sustaining the use of ACT for anxiety disorders in general and panic disorder in particular. First, panic disorder is conceptualized as an instance of experiential avoidance. Then, the basic processes of change in ACT are analyzed, emphasizing those which have been studied in relation to anxiogenic or panicogenic events. Subsequently, the application of ACT to anxiety and panic disorder is described. Finally, some key future research directions are offered to the light of the basic research available.

Key words: panic disorder, ACT, experiential avoidance, relational frame theory, relational responding, private events.

RESUMEN

La prevalencia del trastorno de pánico con o sin agorafobia, así como su impacto personal y económico, están animando a los investigadores y clínicos a mejorar los tratamientos psicológicos disponibles. La terapia cognitivo-conductual para el trastorno de pánico ha producido grandes tamaños de efecto, aunque la literatura sobre los resultados del tratamiento (eficacia, efectividad y eficiencia) ha producido algunos resultados contradictorios que merecen futura consideración. La Terapia de Aceptación y Compromiso (ACT) se está mostrando muy útil en el tratamiento de un amplio abanico de problemas psicológicos, incluidos los trastornos por ansiedad, aunque la evidencia empírica disponible para estos es aún limitada. En el presente trabajo, presentamos una revisión de la investigación básica que apoya el uso de la ACT en los trastornos por ansiedad en general, y en el trastorno de pánico en particular.

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En primer lugar, el trastorno de pánico es conceptualizado como una instancia de evitación experiencial. Posteriormente son analizados los procesos de cambio presupuestos en la ACT, enfatizando aquellos que han sido estudiados en relación a eventos ansiogénicos. Por último, describimos la aplicación de la ACT en los trastornos por ansiedad y en el trastorno por pánico que se deriva de la revisión previa de la literatura de investigación. Finalmente, se ofrecen algunas recomendaciones de futuras líneas de investigación a la luz de la literatura de investigación básica disponible.

Palabras clave: trastorno de pánico, ACT, evitación experiencial, teoría de los marcos relacionales, responder relacional, eventos privados.

Panic disorder (PD) is traditionally defined by the occurrence of unexpected and intense episodes of fear accompanied by physical and cognitive symptoms (American Psychiatric Association, 1994). Some of the most salient characteristics of PD are: 1) Panic attacks are accompanied by worries about future attacks, the consequences of attacks, or behavioral changes related to the attacks; and 2) it usually involves the avoidance of situations, behaviors or events that may produce similar somatic symptoms to those experienced during a panic attack. Individuals with PD usually present an early learning history in which the potential dangers of physical sensations have been emphasized. Also, those individuals are most likely to have observed panic symptoms or chronic illnesses in their family members, and to have received parental encouragement for sick-role behavior during their own experiences of panic-like symptoms (Orsillo, Roemer, Block-Lerner, LeJeune, & Herbert, 2004).

The first choice treatments for such disorders are the diverse variations of exposure techniques and cognitive restructuring (e.g., Barlow, Raffa & Cohen, 2002; Task Force on Promotion and Dissemination of Psychological Procedures, 1995). As quoted by Orsillo *et al.* (2004), cognitive-behavioral treatment (CBT) for PD has yielded large effect sizes (.68 to .88; Gould, Otto & Pollack, 1995), estimating that between 41% and 100% of clients are panic free 12 months following the termination of treatment (Barlow, 2002). It is assumed, thus, that treatments for anxiety disorders that retain and enhance the exposure component are most likely to produce clinically significant and meaningful results.

Nonetheless, there are a number of gaps in the literature on the efficacy, effectiveness, and efficiency of those treatments. First, between 20% and 30% of the clients who are administered behavior therapy and CBT do not improve. Second, a percentage of clients (between 5% and 15% depending on the source) quit treatment before it is completed. Third, there is little knowledge about the behavioral processes underlying the changes observed with the application of CBT (Eifert & Forsyth, 2005). These data along with the research on the paradoxical effects of thought suppression first developed by D. M Wegner and colleagues in the 90's (e.g., Wegner, 1994; Wenzlaff & Wegner, 2000), and extended by several authors at present, motivated researchers and clinicians to explore alternative approaches to therapy.

change in the contingencies observed in rule-governed behavior, and 3) behavior-behavior arbitrary relations, was specially considered (Hayes, Strosahl, & Wilson, 1999). The result was what has been termed as Third Wave Behavior Therapy (Hayes, 2004), out of which we will focus in the Acceptance and Commitment Therapy as the most complete of the therapies included in this tradition. The three main descriptors of ACT according to Hayes, Strosahl, Bunting, Twohig and Wilson (2004) are the following. First, its basic foundations stem from the Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001); second, ACT assumes the basic principles of the Functional Contextualism (Gifford & Hayes, 1999; Hayes, Strosahl, & Wilson, 1999); and third, it proposes a functional model of psychopathology with the Experiential Avoidance Disorder as the functional diagnostic dimension present across several diagnostic categories included in the DSM-IV (Hayes, Wilson, Gifford, Follette & Strosahl, 1996; Luciano & Hayes, 2001). Furthermore, there is a special emphasis in the research on processes of change for the development and improvement of the methods and techniques included in ACT, as well as in the strictly functional nature of psychopathology and therapy. This turns ACT into a flexible conceptual and therapeutic model that may be used with multiple and varied problems, as it is being noted across several, but all coherent, treatment manuals (e.g., Dahl & Lundgren, 2006; Dahl, Wilson, Luciano, & Hayes, 2005; Eifert & Forsyth, 2005; Eifert, McKay, & Forsyth, 2006; Hayes & Strosahl, 2004), and empirical studies (Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004 for a review).

The purpose of the present paper is to briefly review the basic research sustaining the model of psychopathology and therapy that ACT embraces. With this goal, we first present panic disorder as an instance of destructive experiential avoidance, followed by the research on process of change in ACT. Lastly, we will describe some considerations in relation to the future research on the use of ACT in the treatment of panic disorder. These considerations derive directly from our review of the basic research about change processes in ACT.

PANIC DISORDER AS AN INSTANCE OF EXPERIENTIAL AVOIDANCE DISORDER

DSM-IV states that one of the main characteristics across anxiety disorders is the avoidance or escape from the situations or stimuli functions which are likely to elicit anxiety, as well as the deliberate efforts to somehow control such situations (i.e., safety behaviors). Several authors within ACT perspective (Eifert & Forsyth, 2005; Orsillo, *et al.*, 2004) as well as others within CBT models (Barlow, Allen & Choate, 2004) have noticed a functional overlapping among symptoms of diverse subclasses within the category anxiety disorders. This is to say that although the symptoms defining each subcategory look different in terms of topography, they all are maintained by the same contingencies, i.e., negative reinforcement predominantly. Cognitive and/or physiological vulnerabilities (e.g., general tendency towards anxious apprehension) have also been pointed out as common aspects across anxiety disorders (e.g., Barlow, 2002), but these are beyond the scope of the present paper.

Experiential avoidance (EA) occurs when an individual is not willing to stay in contact with a variety of private events which are experienced as aversive (pain, fears, feelings of loneliness, insecurity, anxiety, traumatic memories, etc.) and makes diverse deliberate efforts to alter the form and frequency of those events and the contexts that occasion them (Hayes *et al.*, 1996; Luciano & Hayes, 2001). The immediate consequence of these varied efforts is the momentary relief from the aversive state the individual was experiencing, which turns into a potent negative reinforcement for avoiding. In the long run, however, the intensity and frequency of those private events experienced as aversive increase to the point that the individual restricts his life to do whatever it takes to get rid of the suffering, abandoning the valued/meaningful directions in his life.

The emergence and pervasiveness of EA has to do with two phenomena; on the one hand the bidirectional nature of language (for a book length review, see Hayes *et al.*, 2001); on the other hand the inappropriate generalization of control rules which is supported culturally with the idea that emotions and cognitions are the causes of behavior (Hayes *et al.*, 1996). The bidirectional nature of language (mutual and combinatorial entailment, and transformation of functions) implies, very briefly, that we learn to react to words as if the referents the words stand for were present. For instance, if we hear or read the word lemon, given the proper context we may picture a lemon, and even salivate in the absence of any lemon in our mouth. Likewise, the thought I'll die may bring all the functions of death, which usually are aversive given the establishment of death in a frame of opposition to life. This way, the thought I'll die may become by itself extremely aversive, even when the referent -actual death- is not occurring but as a verbal or relational process.

Once relational responding (i.e., responding to an event on the basis of the relations that have been established in the personal history between such event and other events not sharing any physical property with the former) has been established as an operant and through multiple examples, approximately at the age of 19 months (Luciano, Gómez, & Rodríguez, 2007), the transformation of functions is automatic and hence, not under the voluntary control of the individual. That is, having memories, thoughts, sensations, images, etc. of a traumatic past experience or of a feared future will be unavoidable given certain circumstances. And this should not be a problem unless somebody says otherwise -which is, by the way, what happens. In other words, since thoughts, feelings, private events in general, are not causes of behavior (MacCorquordale & Meehl, 1948), the unavoidable transformation of functions that occurs as the individual "walks through" his/her life, should not control the direction of the steps he makes. What truly happens is that the verbal community, through more or less subtle messages (anxiety does not help; hyperventilation denotes a poor self-control; etc.), and by means of promoting certain ways of speaking (I would do it, but...; I am worthless; there is no way out, etc.), among other, transforms the private events into barriers for action. Statement like "hyperventilation denotes a poor self-control," "palpitations may be dangerous," "unless you feel confident, do not go out," etc. frame the panic symptoms in a relation of opposition to life, and to the qualities that are supposed to involve psychological well-being in the mainstream culture (self-control, self-confidence, no worries, no fears, etc.). To the extent that these have acquired

reinforcing functions in the history of the individual, the panic symptoms will acquire aversive functions, thus will become something to get rid of, because of having been established as 'incompatible to' or opposite of having a healthy living (Luciano *et al.*, 2006).

The maintenance of the rigid pattern of EA is related to four verbal context potentiated by the verbal community: Literality, Evaluation, Reasons-giving, and Control of Causes. Literality means fusion with the function, or the referent, of the words. This way, literality occurs when an individual having the thought "one of these days I will die from a panic attack" behaves according to the literal meaning that has been established for the word die, that is, avoiding the possibility of dying, in this case, avoiding the possibility of having any of the symptoms that define the panic attack for that individual, which have acquired the same functions than actual dying. Evaluation means the tendency to evaluate everything and to get fused to the content of the evaluation, for instance, "panic attacks are for crazy people," "I must be crazy," "crazy is bad," "I am bad, worthless," etc. Reasons-giving means the tendency to establish a reason for every single occurrence of any type of event. Especially relevant here, when the access to the causes of a particular behavior is limited, then the context of Reason-giving potentiates establishing internal events that correlate with such behavior as its causes, for instance, he went outside because he was hyperventilating, she will stay home because her heart is beating too fast, etc. Control of Causes is the tendency to remove what is aversive and to pursue what is reinforcing, which is extremely useful when applied to the events that occur in the external world (if I replace the broken cables, the computer will work again). The problem is when we try to apply the same rules that work for the world outside, to what has been established as the causes of our behavior, i.e. to our private events. In the example above, in order to have individuals who do not go outside in the middle of something important, or who attend previous commitments, we should first replace their anxiety, fears of death and other panic symptoms. This is the context that makes sense of the others to the extent that the momentary relief experienced by the individuals when they get to ameliorate their symptoms (including fears of such symptoms), functions as a potent reinforcer that, indeed, reinforce the whole rationale supporting control efforts (Luciano, Rodríguez, & Gutiérrez, 2004). EA becomes a problem when the inflexible patterns of avoidance restricts the life of the individuals to the point of abandoning the trajectories that give meaning or value to their lives according to personal standards.

Within this perspective, PD would be a case of rigid verbal regulation controlled by the necessity of getting rid of the symptoms of a panic attack, the fears of the symptoms of a panic attack, memories, self-attributions, disturbing feelings, etc., prior to engaging in personal valuable trajectories or directions. Depending on the consequences that control this type of destructive verbal regulation, PD may be an instance of generalized pliance -which interferes with the sensitivity to the direct consequences of the action, or overextended tracking -reacting to private events in a way which is not useful to long term goals, or the type of augmenting which transform private events into barriers for action and promote the control rules (Hayes, Gifford, & Hayes, 1998; Torneke, Luciano, & Valdivia, 2008). The goal of ACT is then to undermine private events as barriers for

action and to promote flexibility in the reaction to those private events so as to facilitate the occurrence of behavior in valued trajectories.

PROCESSES OF CHANGE IN ACT AND PD

The behaviors traditionally defining PD with or without agoraphobia might be divided into three classes according to functional criteria: a) avoidance and escape from the own experience of panic (hyperventilation, relaxation, distraction, etc.); b) efforts to control the situations eliciting panic responses (safety behaviors, efforts to suppress thoughts and memories); and c) functional detach from the own personal values. These three functional groups are well described in the FEAR algorithm (Fusion, Evaluation, Avoidance, and Reasons; Hayes, Strosahl, & Wilson, 1999). Applied to PD, the FEAR algorithm depicts a person who is involved in a process of EA characterized by 1) constant evaluation of the physical sensations and situations in which they occur (hyperventilating is bad, dangerous; going out is risky, it will kill me, etc.); 2) literal behavior with regard to the contents of such evaluations, that is, systematic efforts to avoid, escape and control the feared situations as much as possible (hyperventilating and going out will make me die, therefore I will stay home); 3) justifying the avoidance and escape behaviors as well as their results (I cannot go out because otherwise I will die; with such strong physiological reactions I cannot do anything); 4) deliberate efforts to control panic attacks, which are incompatible with valued living.

The therapeutic intervention is aimed at replacing the FEAR functioning, present in all forms of EA including PD, with the ACT functioning (Accept, Choose, and Take action; Hayes, Strosahl, & Wilson, 1999), which is more flexible and adaptive, and allows the person keeping the commitment with his/her personal values. Strosahl, Hayes, Wilson, and Gifford (2004) present a detailed description of the six processes of change that characterize ACT, concretely, Acceptance, Defusion, Mindfulness, Self as Context, Values, and Committed Action. The empirical research on the six processes of change is not consolidated yet, but it is developing steadily with promising results. We will present a review of the main findings derived from the research on the processes of change in ACT. It does not intend to be exhaustive, but to show the evidence that supports the use of ACT for the treatment of PD, as well as the coherence of the term experiential avoidance as a functional diagnostic category. Only some of the six processes of change have been investigated in relation to panicogenic tasks or private events. While such evidence is accumulated, however, we believe that a brief description may be enlightening. After all, the key is the presence of aversive private experiences to deal with (yet anxiety, yet fears, yet discomfort, etc.) and not the means by which those are brought to bear.

So far, the process of Acceptance has accumulated vast empirical support across a number of experimental studies utilizing clinical populations, and analogue studies. In fact and directly related to anxiety, there is some evidence of the benefits of acceptance vs. control rationales for enhancing the exposure practice among individuals with PD. For instance, Levitt, Brown, Orsillo, and Barlow (2004) exposed three groups of clients

to a CO₂ inhalation challenge after being administered either a suppression protocol, or an acceptance protocol, or a control instruction condition. Results showed that although the physiological reactions to the challenge did not differ among conditions, only the clients in the acceptance condition reported less anxiety and agreed to being exposed to a second challenge. Similar results were obtained by Eifert and Heffner (2003) by exposing women scoring high in sensitivity to anxiety as measured with the AAQ to CO₂ enriched air inhalation tasks. Worth mentioning, none of the women discontinued their participation before the tasks were completed. Likewise, Spira, Zvolensky, Eifert, and Feldner (2004) showed that control-based coping strategies predicted more readily than other coping strategies the occurrence of frequent and intense cognitive and physical symptoms related to panic. Another source of evidence in the same direction, although not in relation to panicogenic events, is the research on coping with pain (Hayes, Bissett et al, 1999; Gutiérrez, Luciano, Rodríguez, & Fink, 2004; Masedo & Esteve, 2007; Páez Blarrina *et al.*, 2008a; 2008b). Very briefly, it has been reported that participants who are presented with an acceptance-based protocol prior to being exposed to painful stimulation show higher pain tolerance and less pain believability than those participants exposed to a cognitive control-based protocol.

Within a different tradition, the literature on thought suppression yields evidence of the harmful effects of coping strategies based on cognitive control. Specifically, it has been shown the paradoxical effects of thought suppression on the resurgence of the suppressed thoughts and emotions. For instance, suppression strategies turn the suppressed thoughts into more accessible contents (Wegner & Erber, 1992), relaxation while in stress conditions increments stress levels (Wegner, Broome, & Blumberg, 1997), and suppressed thoughts appear in the dreams (Wegner, Wenzlaff, & Kozak, 2004). Besides contradictory results, it seems that suppression strategies do not cause the increment in the frequency of the suppressed contents in a direct way, but by affecting the mood so that the participants remain more alert to the presence of aversive private events (Abramowitz, Tolin, & Street, 2001; Purdon, Rowa, & Anthony, 2005).

Regarding the process of change Defusion, a recent study by Masuda, Hayes, Sackett and Twohig (2004) showed that participants exposed to the milk-milk exercise as described in the manual by Hayes, Strosahl, & Wilson (1999) showed a reduction of believability and distress produced by negative self-referential thoughts. Also, Valdivia-Salas, Luciano, and Molina (2006) showed that children who were exposed to a protocol describing a long walk in a hot desert with no beverages available, and interspersing language games with the words included in the protocol, reported less thirst and drank less water than the children exposed to the same protocol with no language games included.

Same as in the case of Defusion, the evidence of the processes Values and Committed Action, intimately related to the evidence on Acceptance, has not been accumulated by employing panicogenic tasks. Although there is not an operational definition of what it means to behave towards values, research has relied on the conceptual approach to the concept of values and on the clinical significance criterion (i.e., quality of life) to conduct analogue studies and clinical trials. The research on coping with pain is important on this regard. Across experimental preparations with methodological

improvements and refinements, it has been shown that the only presentation of a protocol establishing the context for continuing in the pain task as a chosen action within a valued direction reduces the believability of pain significantly, what is enhanced with the subsequent introduction of an acceptance-based coping strategy (Páez Blarrina *et al.*, 2008b). This is the first study that isolates the effect of introducing a value context for continuing in a task from other components like defusion.

Summing up, the more extensive evidence has been accumulated for Acceptance and Defusion, while the evidence for Values and Committed Action is very little yet. Nonetheless, to the extent that acting in a valued direction in the presence of pain, discomfort, fear, anxiety and the like, means to accept those experiences as part of the chosen direction, and this necessarily involves defusing and distancing from such experiences, in other words, having the experience of self as the context of all those contents and processes, or mindfulness, we believe that the evidence so far is quite important. Furthermore, it greatly supports the promotion of those three processes of change during the course of therapy. Table 1 shows the six processes of change defined in the literature, and how they match the three behavioral classes defining PD. As shown in the table, ACT-based interventions should include at least three main goals: 1) acceptance of the feared private events; 2) weakening the verbal rationale for the avoidance of the private experience; and 3) promotion and reinforcement of behaviors in valued directions.

ACCEPTANCE AND COMMITMENT THERAPY AS AN ALTERNATIVE APPROACH TO THE TREATMENT OF PD

We have noted the effectiveness of exposure techniques for the treatment of PD in a previous section. Nonetheless, clients tend to feel reluctant and avoidant about exposure practice because of fear of the target of the exposure. ACT directly addresses this reluctance “through methods aimed at decreasing fusion, building self as process, contacting self as context, defining valued life directions, and building patterns of committed actions” (Orsillo *et al.*, 2004, p. 105), so that exposure becomes a chosen action in the direction of a valued direction defined by the client. In line with this, it is affirmed that the acceptance rationale increases the willingness to experience panic symptoms among the individuals with a diagnostic of PD (Orsillo *et al.*, 2004).

For the operational definition of a process of change to be pragmatic and coherent with a functional perspective, it should specify the abilities to be displayed by the therapist (Carrascoso López & Valdivia Salas, 2007). The ACT therapist’s competencies have been already described by Strosahl *et al.* (2004) in detail. We will do an overview of the technical behaviors that the therapist should display when dealing with PD as an instance of EA, in accordance with the evidence accumulated on processes of change and the authors’ clinical experience. Readers are warned that this is just a generic description and only the functional analysis of the presenting problem will allow the selection of the proper methods (Eifert & Forsyth, 2005 for a detailed description of the treatment protocol with anxiety disorders).

Table 1. Processes of change in ACT.

ACCEPTANCE AND DISTANCING	
Process	Brief definition
1. Acceptance	Literally, it means “to take what it’s offered.” It implies behaving according to personal valued directions in the presence of private events which are experienced as aversive.
2. Defusion	Taking perspective from the own private events, noticing them for what they are (thoughts, feelings, memories, etc.), and not as barriers for action.
3. Self as context	Distinguishing between self as content (“it is impossible to live with panic attacks”) and the self as the context for all private contents and processes (“I’m having the thought that it is impossible to live with panic attacks”).
COMMITMENT AND CHANGE	
Process	Brief Definition
4. Mindfulness	Being in full contact with the own experience as it happens in the here and now. Being aware of the self as content and the self as process in the here and now while the client acts towards values.
5. Values	Identifying the valued directions that will direct the behavior of the individual. They will also make sense of the contact with aversive private experiences.
6. Committed Action	Behaving in accordance with personal valued directions for the fulfilment of goals coherent with such directions.

Overview of ACT applied to Panic Disorder

The heart of ACT applied to PD will be seeing anxiety for what it is, distinguishing the self from the symptoms of anxiety and panic, and acting in valued directions (Orsillo *et al.*, 2004). Indirect procedures are highly recommended to achieve these goals. In other words, metaphors, paradoxes and experiential exercises will constitute the basic armamentarium of every ACT therapist. As mentioned before, one of the main goals of ACT is to weaken the rigid and toxic patterns of rule-following wherever it limits the contact with what the client really values in his/her life. The indirect procedures has three advantages: 1) they promote a less literal discourse that makes more likely the contact with the present contingencies in the here and now; 2) they help depict and discriminate the functional relations among the context for a specific behavior, the behavior, and its consequences, which may help the client discriminate what he has been doing so far and to clarify what he really values in his life; 3) they help the client establish contact with the feared private events by promoting distancing and acceptance (Wilson & Luciano, 2002). The advantages of these procedures in contrast with more direct and instructed formulas turn them into very useful tools for the promotion of the processes of change comprising ACT.

For the sake of fluency, we will summarize the six processes in three basic aspects ACT therapists should address with the client in every session. It does not

intend to be an exhaustive description (see Hayes & Strosahl, 2004; Hayes, Strosahl, & Wilson, 1999; Wilson & Luciano, 2002), but to highlight the main aspects to be taken into account:

1. Personal values clarification: this will be one of the first aspects to be addressed in the course of therapy because the personal valued directions will be what make sense of the practice of exposing to what has been for so long avoided (anxiety, fear of having a panic attack, fear of dying from a panic attack, etc.). Furthermore, they will function as referents for client and therapist to ascertain whether the intervention is being successful, in terms of helping the client direct his steps in the valued trajectory no matter the contents that are present when doing so (panic symptoms and all evaluations and emotional reactions those will bring along). Valued acting is not a matter of avoiding avoidance, but a matter of behaving under the control of positive reinforcement. Once clarified, values will be revisited throughout therapy. This is intimately related to the experience of hopelessness, to the extent that revisiting values implies making contact with the gap between what the client values, in other words, what he wants his life to stand for, and what he is in fact doing at present. The ultimate goal of ACT will be reducing such a gap.

2. Defusion and distancing practice. The purpose of the exposure exercises (including paradoxes and mindfulness practice) in ACT is not to reduce the emotional reactions, fears, self-attributions, etc. that panic symptoms elicit, but to learn how to notice them from the perspective of the self as the context for all private contents. In other words, the goal of exposure exercises in ACT is to provide clients with opportunities to practice willingness in the presence of anxiety so that they can do what matters to them. The general purpose is to prepare clients for the inevitable times when anxiety and other forms of discomfort show up while engaging in real-life chosen activities that move them in the direction of their values. Thus, exposure exercises within ACT are always done in the context of a client's valued life goals. Within this perspective, it is possible not to feel threatened by the negative self-attribution "I'm worthless," for instance, and hence, to react with more flexibility. Distancing from aversive private contents is an ability that, as any other ability, is acquired through multiple opportunities to practice. Thus, the session should be a context to go for them, and practice defusing and distancing, that is, practice taking perspective from the self as content and self as process, to be fully present in the here and now from the self as context. Through practice, fears and self-attributions related to having a panic attack will stop functioning as barriers for valued action, in other words, their believability as causes of behavior will reduce considerably.

3. Promotion of valued actions. Throughout the course of therapy, the therapist will promote valued acting, which invariably will trigger psychological barriers. He will also make explicit to the client that committing to what one values does not mean committing to never fail. Instead, the fail will be an opportunity to take responsibility for it and rejoin the commitment as soon as possible. The promotion of valued actions should occur early in therapy and while teaching and reinforcing the use of strategies that facilitate defusion and distancing.

The therapeutic relation in ACT will be the context for shaping and modelling the client's behavior. This means that the therapist should take good care of his own behavior during session, as it is emphasized in Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991). This way, the therapist should make explicit to the client that there are no differences between them on the basis of the role each is playing during therapy. The therapist will express genuine respect and acceptance of the client and his experience, warning the client that it is not him who is hopeless, but the strategies he has employed so far to resolve his problems, and that he will probably feel stuck during therapy as part of the work to do. Humor and irony may help to promote distance from the experience (of both client and therapist). In any case, the therapist will adapt the language to the client's repertoire, this is to say that flexibility in the utilization of metaphors, exercises and other discursive styles are highly recommended. One aspect that has shown very effective across clients is the utilization of physical metaphors. Either way, the methods utilized should always encapsulate the functional relations among the context for a behavior, the behavior, and its consequences in the short and in the long run.

Empirical Evidence of ACT Applied to Anxiety Disorders

There is no controlled evidence of the effectiveness of ACT as a package for the amelioration of PD problems, although the experimental research utilizing panicogenic stimuli, i.e. CO₂ (see previous section), clearly shows the impact of acceptance-based rationales on the willingness to engage in meaningful behaviors. As well, the empirical literature on ACT for the treatment of anxiety disorders in general is scarce so far. Still, diverse case studies (Carrascoso López, 2000; Huerta, Gómez, Molina, & Luciano, 1998; Luciano & Gutiérrez, 2001; Zaldívar & Hernández, 2001) and a small number of controlled trials (Twohig & Woods, 2004; Zettle, 2003) yield supportive and relatively consistent results that point towards the efficacy and efficiency of ACT for anxiety disorders (Hayes, Luoma, Bond, Masuda, & Lillis, 2006 for a review; Orsillo *et al.*, 2004; Twohig, Masuda, Varra, & Hayes, 2005). This literature shows the application of ACT to varied diagnostic sub-categories within the cluster anxiety disorder in the DSM-IV with uniform results, although not superior to CBT in parameters like treatment duration, or achievements at the end of the treatment. In the follow-up measures, however, subjects under ACT achieve better results in measures like believability of negative thoughts, than subjects under the well established traditional treatments. This supports the idea that the processes of change may be different in ACT in comparison to the therapies included in the first and second wave Behavior Therapy.

FUTURE RESEARCH ON ACT APPLIED TO PD

The functional characteristics of ACT turn it into a therapy model that can be applied to any problem where an inflexible pattern of destructive EA is at the heart. Accordingly, in this section we will not focus solely in issues directly related to the

application of ACT with PD, but also in other aspects which are still pending of further experimental and conceptual work. Specifically, we will first address the measurement of the changes in ACT, followed by some considerations on the concept of EA.

One of the results reported across trials (see Hayes *et al.*, 2004 for a review) is that ACT is not superior to CBT at the end of the treatment. This, along with the assumption that ACT works as a therapeutic model through processes of change different to those in CBT, refers to issues related to the measurement of the changes. The traditional assessment instruments administered with anxiety disorders, for instance the Symptom Checklist-90-R (SCL-90-R; Derogatis, 1994), the Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996), or the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990), focus in the topography of the symptoms (frequency, intensity, duration, etc.) but not in their functional properties over the course of therapy. As long as the ultimate goal of ACT is altering the function of the called 'symptoms' (i.e. private events which have become discriminative for avoidance, i.e. barriers for valued actions), the traditional measures may not be sensitive to the changes ACT promotes. In fact, a number of instruments are being developed at present for the assessments of such changes. One of the most utilized is the Acceptance and Action Questionnaire (AAQ; e.g. Barraca Mairal, 2004 for the Spanish adaptation; Hayes *et al.*, 2004), which measures self-reported EA. It has good construct validity, to the extent that patients scoring high in the AAQ seem to benefit more from ACT-based interventions than those scoring low. Also, it has adequate criterion-related, predictive, and convergent validities (Hayes *et al.*, 2006). However, the instrument is not robust enough yet, and it may overlap with other measures. For instance, in our clinical practice we frequently use the Constructive Thought Inventory (CTI; Epstein, 1987) along with the AAQ and the White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994) to measure the alteration of the functions of the private events experienced as barriers for valued actions. We have found that high scores on AAQ and WBSI are usually accompanied by low scores in the scale of Global Constructive Thought (GCT) in the CTI. These clinical observations suggest that there might be certain degree of overlapping between the AAQ and other measures developed within conceptual and empirically different traditions. This is not a problem, but needs special considerations. For instance, in order to validate self-report measures like AAQ, researchers might consider the study by Wulfert, Greenway, Farkas, Hayes, and Dougher (1994) as an example. In this study, the participants were tested for their performance on a multiple schedule of reinforcement as a function of, among others, their scores in the Scale for Personality Rigidity (Rehfisch, 1958). The participants scoring high in rigidity showed greater insensitivity to the changing contingencies than participants scoring low. This study demonstrates a correlation between the performance observed in the lab and a paper-and-pencil test, and illustrates how experimental tasks may be used to validate assessment strategies based on the client's self-report.

Besides the need for empirical and conceptual research on the AAQ, the fact is that measuring EA seems more appropriate than utilizing traditional measures focused in symptoms reduction. However, a direct measure of EA to use during session both to measure EA and to practice defusion is still absent, as noted elsewhere (Luciano *et al.*,

2004; Páez Blarrina *et al.*, 2008b). Along with the measure of EA, measuring actions in valued directions is also usual when applying ACT. The explicit work on clarifying and revisiting values is considered one of the main differences between ACT and other forms of therapy (Páez Blarrina, Gutiérrez, Valdivia, & Luciano, 2006). Thus, the efforts to define in operational terms what it means to act in valued directions become of extreme relevance as both a conceptual and a clinical issue. For example, there are a number of labs working on the design of an instrument for the objective measure of valued acting [Personal Values Questionnaire (Blackledge & Ciarocchi, 2006), Values Bull's Eye (Lundgren & Dahl, 2006), Valued Living Questionnaire (Wilson & Groom, 2002)], but none of them have been validated to date. Besides, it is necessary to examine the repertoires that get altered whenever an intervention based in values clarification is employed. We point out to the experimental series carried out by Gutiérrez *et al.* (2004) and Páez Blarrina *et al.* (2008a; 2008b) on coping with pain as a good start point from which going deeper in the clarification of the role of values in altering the verbal discriminative-for-avoidance functions of panicogenic experiences. Specifically in relation to PD, there is still no evidence of the differential effect of values clarification and promotion of acting in personally relevant directions when those processes are framed in the context of an ACT intervention, or a CBT intervention, or a medication-based treatment.

Regarding the concept of EA, we highlight the need for caution when appealing to the history and usage of the term. The concept of EA is key in the conceptualization of psychopathology within ACT, being proposed as the functional alternative to the traditional classification systems DSM and CIE. To the extent that EA is a functional and dimensional concept, there is room for wondering whether other concepts might be possible. In fact, in order to calibrate its actual clinical utility we should examine whether the concept of EA have any relation with other dimensional constructs in psychopathology. That is, it is necessary to carry out historical research that determined the antecedents of the concept of EA, and its possible relations with other theories and concepts in psychopathology. It is frequent to forget the origin of terms and theories, and this facilitates the re-edition of old concepts that will now be considered as empirically validated great new concepts (Pérez Álvarez, 2003). Likewise, this line of research should make even more explicit the connexions between ACT and other therapeutic and philosophical traditions, and thus, increment the richness and clarity of the theoretical model about psychopathology and therapy (Perez Álvarez, 2001).

Lastly, we will emphasize that ACT is a model of therapy and psychopathology which is flexible and with great heuristic power, but it is only a step in the direction of recapitulating what we should know and was considered well-know yet. This recapitulation should serve to explore alternative paths that clinical psychology could take in order to get out of the conceptual and empirical spiral it is at present, which paradoxically came with the 'cognitive revolution.' Still, caution is necessary in order to advance in this direction with firm steps.

REFERENCES

- Abramowitz JS, Tolin DF, & Street GP (2001). Paradoxical effects of thought suppression: A meta-analysis of controlled studies. *Clinical Psychology Review, 21*, 683-703.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders, 4th ed.* American Psychiatric Association. Washington, D.C.
- Barlow DH (2002). *Anxiety and its disorders: The nature and treatment of anxiety and panic* (2nd ed.). New York: Guilford Press
- Barlow DH, Allen LB, & Choate ML (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy, 35*, 205-230.
- Barlow DH, Raffa SD, & Cohen EM (2002). Psychosocial treatments for panic disorders, phobias, and generalized anxiety disorder. In PE Nathan & JM Gorman (Eds.), *A Guide to Treatments that Work*, 2nd ed. (pp. 301-336). New York: Oxford University Press.
- Barraca Mairal J (2004). Spanish adaptation of Acceptance and Action Questionnaire (AAQ). *International Journal of Psychology and Psychological Therapy, 4*, 505-515.
- Blackledge JT, & Ciarocchi J (2006). *Personal Values Questionnaire*. Department of Psychology, University of Wollongong, Australia.
- Beck AT, Steer RA, & Brown GK (1996). *Beck Depression Inventory II Manual*, 2nd ed. San Antonio, Tex.: Harcourt Brace & Co.
- Carrascoso López FJ (2000). Acceptance and Commitment Therapy (ACT) in panic disorder with agoraphobia: A case study. *Psychology in Spain, 4*, 120-128.
- Carrascoso López FJ & Valdivia S (2007). Towards alternative criteria for the validation of psychological treatments. *International Journal of Psychology and Psychological Therapy, 7*, 347-363.
- Dahl JC, Wilson KG, Luciano MC, & Hayes SC (2005). *Acceptance and Commitment Therapy for Chronic Pain*. Reno: Context Press.
- Dahl JC & Lundgren T (2006). *Living beyond your pain*. Oakland: New Harbinger.
- Derogatis LR (1994). *Symptom Checklist-90-R*. Minneapolis, MN: National Computer Systems.
- Eifert GH & Forsyth JP (2005). *Acceptance and Commitment Therapy for Anxiety Disorders*. Oakland: New Harbinger.
- Eifert GH & Heffner M (2003). The effects of acceptance versus control contexts on avoidance of panic-related symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 293-312.
- Eifert GH, McKay M, & Forsyth JP (2006). *ACT on life not on anger*. Oakland: New Harbinger.
- Epstein S (1987). *Constructive Thinking Inventory (CTI). Spanish adaptation*. Madrid: TEA.
- Gifford EV, & Hayes SC (1999). Functional Contextualism: A pragmatic philosophy for behavioral sciences. In W O'Donahue & R Kitchner (Eds.), *Handbook of Behaviorism* (pp.287-322). New York: Academic Press.
- Gutiérrez O, Luciano MC, & Fink BC (2004). Comparison between an acceptance-based and a cognitive-control-based protocol for coping with pain. *Behavior Therapy, 35*, 767-784.
- Gould RA, Otto MW, & Pollack MH (1995). A meta-analysis of treatment outcome for panic disorder. *Clinical Psychology Review, 15*, 819-844.
- Hayes SC (2004). Acceptance and Commitment Therapy, Relational Frame Theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639-665.
- Hayes SC, Barnes-Holmes D, & Roche B (2001). *Relational Frame Theory: A post-Skinnerian account*

of human language and cognition. New York: Kluwer Academic/Plenum Publishers.

- Hayes SC, Bissett RT, Korn Z, Zettle RD, Rosenfarb IS, Cooper LD, & Grundt AM (1999). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record*, 49, 33-47.
- Hayes SC, Gifford EV, & Hayes LJ (1998). Moral behavior and the development of verbal regulation. *The Behavior Analyst*, 21, 253-279.
- Hayes SC, Luoma JB, Bond FW, Masuda A, & Lillis J (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behavior Research and Therapy*, 44, 1-25.
- Hayes SC, Masuda A, Bissett R, Luoma J, & Guerrero LF (2004). DBT, FAP, and ACT: How empirically oriented are the new behavior therapies technologies? *Behavior Therapy*, 35, 35-54.
- Hayes SC, & Strosahl KD (2004). *A practical guide to Acceptance and Commitment Therapy*. New York: Springer.
- Hayes SC, Strosahl KD, Bunting K, Twohig M, & Wilson KG (2004). What is Acceptance and Commitment Therapy? In SC Hayes & KD Strosahl (Eds.). *A practical guide to Acceptance and Commitment Therapy* (pp. 1-30). New York: Springer.
- Hayes SC, Strosahl, KD, & Wilson, KG (1999). *Acceptance and Commitment Therapy. An experiential approach to behavior change*. New York: Guilford Press.
- Hayes SC, Strosahl KD, Wilson KG, Bissett RT, Pistorello J, Toarmino D, Polusny MA, Dykstra Th A, Batten SV, Stewart SH, Zvolensky MJ, Eifert GH, Bond FW, Forsyth JP, Karekla M, & McCurry SM (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record*, 54, 553-578.
- Hayes SC, Wilson KG, Gifford EV, Follette VM, & Strosahl KD (1996). Experiential avoidance and behavior disorder: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, 64, 1152-1168.
- Huerta F, Gómez S, Molina A, & Luciano MC (1998). Generalized anxiety: A case study. *Análisis y Modificación de Conducta*, 24, 751-766.
- Kohlenberg RJ & Tsai M (1991). *Functional Analytic Psychotherapy*. New York: Plenum Press.
- Levitt JT, Brown TA, Orsillo SM, & Barlow DH (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy*, 35, 747-766.
- Luciano MC, Barnes-Holmes D, Molina F, Barnes-Holmes Y, Rodríguez M, Gutiérrez O, & Valdivia S (2006). *Coordination and opposition relations between aversive functions and valued actions*. Paper presented at the II World Conference on ACT, RFT and Contextual Behavioral Science. London, UK.
- Luciano MC, Gómez I, & Rodríguez M (2007). The role of multiple-exemplar training and naming in establishing derived equivalence in an infant. *Journal of the Experimental Analysis of Behavior*, 87, 3, 349-365.
- Luciano MC, & Gutiérrez O (2001). Anxiety and Acceptance and Commitment Therapy (ACT). *Análisis y Modificación de Conducta*, 27, 373-398.
- Luciano MC, & Hayes SC (2001). Trastorno de evitación experiencial. *Internacional Journal of Clinical and Health Psychology*, 1, 109-157.
- Luciano MC, Rodríguez M, & Gutiérrez O (2004). A proposal for synthesizing verbal contexts in Experiential Avoidance Disorder and Acceptance and Commitment Therapy. *International Journal of Psychology and Psychological Therapy*, 4, 377-394.

- Lundgren T, & Dahl J (2006). *Values Bull's Eye*. Department of Psychology. University of Uppsala, Sweden.
- Masedo AI, & Esteve R (in press). Effects of suppression, acceptance and spontaneous coping on pain tolerance, pain intensity and distress. *Behaviour Research and Therapy*.
- Masuda A, Hayes SC, Sackett CF, & Twohig MP (2004). Cognitive defusion and self-relevant negative thoughts: Examining the impact of a ninety year old technique. *Behaviour Research and Therapy*, 42, 477-485.
- MacCorquodale K & Meehl P (1948). On a distinction between hypothetical constructs and intervening variables. *Psychological Review*, 55, 95-107.
- Meyer TJ, Miller ML, Metzger RL, & Borkovec TD (1990). Development and validation of the Penn State Worry Questionnaire. *Behavior Research and Therapy*, 28, 487-495.
- Orsillo SM, Roemer L, Block-Lerner J, LeJeune C, & Herbert JD (2004). ACT with anxiety disorders. In SC Hayes & KD Strosahl (Eds.), *A Practical Guide to Acceptance and Commitment Therapy* (pp. 103-132). New York: Springer.
- Páez Blarrina M, Gutiérrez O, Valdivia S, & Luciano MC (2006). ACT y la importancia de los valores personales en el contexto de la terapia psicológica. *International Journal of Psychology and Psychological Therapy*, 6, 1-20.
- Páez Blarrina M, Luciano MC, Gutiérrez O, Valdivia S, Rodríguez M, & Ortega J (2008a). Coping with pain in the motivational context of values: Comparison between an acceptance-based and a cognitive-control-based protocol. *Behavior Modification*, 32, 403-422.
- Páez Blarrina M, Luciano MC, Gutiérrez O, Valdivia S, Ortega J, & Rodríguez M (2008b). The role of values in altering the functions of pain: Comparisons between acceptance-based and cognitive-control-based protocols. *Behaviour Research and Therapy*, 46, 84-97.
- Pérez Álvarez M (2001). Afinidades entre las nuevas terapias de conducta y las terapias tradicionales con otras orientaciones. *International Journal of Clinical and Health Psychology*, 1, 15-33.
- Pérez Álvarez M (2003). *Las cuatro causas de los trastornos psicológicos*. Madrid: Universitas.
- Purdon C, Rowa K, & Anthony MM (2005). Thought suppression and its effects on thought frequency, appraisal and mood state in individuals with obsessive-compulsive disorder. *Behaviour Research and Therapy*, 43, 93-108.
- Rehfish JM (1958). A scale for personality rigidity. *Journal of Consulting Psychology*, 22, 1, 11-15.
- Spira AP, Zvolensky MJ, Eifert GH, & Feldner MT (2004). Avoidance-oriented coping as a predictor of anxiety-based physical stress: A test using biological challenge. *Journal of Anxiety Disorders*, 18, 309-323.
- Strosahl KD, Hayes SC, Wilson KG, & Gifford EV (2004). An ACT primer: Core therapy processes, intervention strategies, and therapist competencies. In SC Hayes & KD Strosahl (Eds.), *A practical guide to Acceptance and Commitment Therapy* (pp. 31-58). New York: Springer.
- Task Force on Promotion and Dissemination of Psychological Procedures (1995). Training in and dissemination of empirically-validated psychological treatments: Report and recommendations. *The Clinical Psychologist*, 48, 3-23.
- Twohig MP, Masuda A, Varra AA, & Hayes SC (2005). Acceptance and Commitment Therapy as a treatment for anxiety disorders. In SM Orsillo & L Roemer (Eds.), *Acceptance and mindfulness-based approaches to anxiety. Conceptualization and treatment* (pp. 101-130). New York: Springer.
- Twohig MP, & Woods DW (2004). A preliminary investigation on Acceptance and Commitment Therapy

and habit reversal as a treatment for trichotillomania. *Behavior Therapy*, 35, 803-820.

- Valdivia S, Luciano MC, & Molina FJ (2006). Verbal regulation of motivational states. *The Psychological Record*, 56, 577-595.
- Wegner DM (1994). *White bears and other unwanted thoughts. Suppression, obsession, and the psychology of mental control* (2nd ed.). New York: Guilford Press.
- Wegner DM, Broome A, & Blumberg SJ (1997). Ironic effects of trying to relax under stress. *Behaviour Research and Therapy*, 35, 11-21.
- Wegner DM & Erber R (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology*, 63, 903-912.
- Wegner DM, Wenzlaff RM, & Kozak M (2004). Dream rebound: The return of suppressed thoughts in dreams. *Psychological Science*, 15, 232-236.
- Wegner DM & Zanakos S (1994). Chronic thought suppression. *Journal of Personality*, 62, 615-640.
- Wenzlaff RM & Wegner DM (2000). Thought suppression. *Annual Review of Psychology*, 51, 59-91.
- Wilson KG & Groom J (2002). *The Valued Living Questionnaire*. Department of Psychology, University of Mississippi, University, MS.
- Wilson KG, & Luciano MC (2002). *Terapia de Aceptación y Compromiso (ACT). Un tratamiento conductual orientado a los valores*. Madrid: Pirámide.
- Wulfert E, Greenway DE, Farkas P, Hayes SC, & Dougher MJ (1994). Correlation between self-reported rigidity and rule-governed insensitivity to operant contingencies. *Journal of Applied Behavior Analysis*, 27, 659-671.
- Zaldívar F, & Hernández M (2001). Acceptance and Commitment Therapy (ACT): Application to experiential avoidance with agoraphobic form. *Análisis y Modificación de Conducta*, 27, 425-454.
- Zettle RD (2003). Acceptance and Commitment Therapy (ACT) vs. systematic desensitization in treatment of mathematics anxiety. *The Psychological Record*, 53, 197-215.

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