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Philosophical, theoretical and empirical foundations of Acceptance and Commitment Therapy

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This article has two main purposes. The first one is to present the philosophical, theoretical, and empirical underpinnings of Acceptance and Commitment Therapy (ACT). The second is to outline the importance of philosophy and theory in order to build an empirical clinical psychology that copes progressively with the needs of the field. To accomplish these purposes, we have structured the article in three distinct sections. In the first one, we will explore the philosophical assumptions of ACT, known as Functional Contextualism. In the second section, we will offer a brief history of the applied and theoretical tradition of ACT, Behavior Analysis, and Relational Frame Theory (RFT), a modern account of human language and cognition. Finally, we will present some clinical outcomes that, although preliminary, exemplify the broad range of health problems and psychological disorders for which the ACT model has shown to have positive results. Overall we will offer a unified version of the ACT/RFT model that interconnects its multiple dimensions.
Key Words: *ACT, Functional Contextualism, RFT, Psychopathology, epistemology, Emotional Avoidance, Relational Operants, Rule-governance, Insensitivity to direct contingencies, Clinical Outcomes.*

Fundamentos filosóficos, teóricos y empíricos de la Terapia de Aceptación y Compromiso

El presente artículo cumple dos propósitos. En primer lugar presentar los fundamentos filosóficos, teóricos y empíricos de la Terapia de Aceptación y Compromiso (TAC), y, en segundo lugar, argumentar cuán importante es la filosofía y la teoría de cara a construir una psicología clínica empírica que afronte

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de un modo progresivo las necesidades del campo. Para cumplir estos propósitos, hemos estructurado el artículo en tres secciones. En la primera exploramos los presupuestos filosóficos de la TAC, el llamado Contextualismo Funcional. En la segunda sección ofrecemos una breve historia de la tradición aplicada y teórica de la TAC, esto es, el Análisis de Conducta, y a continuación ofrecemos una aproximación moderna al lenguaje y la cognición, la Teoría de los Marcos Relacionales (TMR). Finalmente, presentamos una serie de estudios empíricos que ejemplifican de modo preliminar el amplio rango de problemas psicológicos y de la salud para los que la TAC ha mostrado resultados positivos. En conjunto, este artículo ofrece una versión unificada del modelo de la TAC/TMR que interconecta sus múltiples dimensiones.

Palabras clave: *Terapia de Aceptación y Compromiso, contextualismo funcional, Teoría de los Marcos Relacionales, psicología, epistemologia, evitación emocional, operantes relacionales, conductas gobernadas por reglas, insensibilidad a las contingencias directas, resultados clínicos.*

Acceptance and Commitment Therapy (ACT–said as a single word, not as initials; Hayes, Strosahl & Wilson, 1999) is an empirically-based model of clinical intervention based on the view that clients' fusion with their thoughts and resulting attempts to control uncomfortable or disturbing private experiences is the origin of a large portion of psychopathology. In an ACT approach these two processes, along with others that in part flow from them, lead to psychological inflexibility and a lack of overt effective action. In place of cognitive fusion and experiential avoidance, ACT works to establish mindfulness and acceptance, and in place of rigidity and inactivity, ACT works to engage clients in the clarification of their goals and values and in overt behavioral activity in accord with them.

Although ACT has gained recent popularity as a model of intervention, it is the result of a twenty-five year old program of research and intellectual development in which philosophical, theoretical, basic process, and applied concerns cohere as a whole. Its philosophical foundation, Functional Contextualism (Hayes, 1993), provides a basis for its ontological and epistemological stance, and serves as a guide and modus operandi for the theoretical and empirical work. Its basic foundation, Relational Frame Theory (Hayes, Barnes-Holmes & Roche, 2001), is a more cohesive and progressive account of human language and cognition with clear applied implications. Taken together, ACT can be defined as a new development inside the tradition of the behavioral and cognitive therapies, but it is a comprehensive model, with a different theory, rationale, and set of philosophical assumptions.

In this paper we will focus on the theoretical, philosophical and clinical outcomes of ACT. There are other publications available for readers interested in an extended review of the intervention techniques (Hayes *et al.*, 1999; Wilson & Luciano, 2002).

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Philosophical Assumptions: Functional Contextualism

It is very common amongst clinicians, especially those who ascribe to empirically oriented traditions, to undermine, hide, or clearly reject philosophical and theoretical considerations. Also, it is commonly assumed that philosophical and theoretical considerations are a waste of time, and that scientists must be solely driven by data. There seems to be a belief that philosophical considerations lead to sterile speculation, vague speech, and worst than that, to sophisticated ways of defending long time entrenched positions that are no longer sustained by data.

The end result has been a kind of irresponsible dumbing down of the empirical clinical tradition, in which philosophical assumptions built into common sense language dominate the intellectual life of applied psychology. The result of this philosophical stance, whether or not it is recognized or stated by the researcher or practitioner, is a disconnection between the applied and basic fields. Clinical psychologists rely on technique development and outcomes research, and basic and theoretical psychologists remain in the realm of theoretical speculation or core basic research.

We believe that it is of fundamental importance for the ACT therapist to have a general understanding of the philosophical, theoretical and basic assumptions from which is where the ACT techniques are derived. Otherwise, the application of the ACT model becomes a blind enterprise, and its utility for the clinician is considerably reduced. Furthermore, we believe that the particular philosophy that underlies ACT is likely to increase, not decrease, the linkage between data and applied practice, because it makes application a fundamental test of knowledge.

Functional Contextualism

Functional Contextualism is a specific variety of contextualism. Like all forms of contextualism it assumes that the world is both real and undifferentiated. The universe is a whole, and living creatures divide it into elements on the basis of their interaction in and with it. When an individual perceives an event as an event, this is a psychological act, based on a particular history and current situation –an event is not an organized, elementalistic universe battering its divisions into the organism. The source of this act is its utility. For verbal organisms, acts of division are carried forward one step as they verbally construct the world. From here, the importance of division derives from its utility: the analytic purpose of verbal construction.

The idea of purpose is key to an understanding of Functional Contextualism and its difference from the mainstream. The predominant view of most psychologists seems to be that knowledge has value in and of itself because knowledge consists in *revealing* or *uncovering* the real structure of a pre-organized and objective world. Therefore, "truth" consists of modeling reality. Such modeling justifies any intellectual enterprise, independently of the value of what is being studied or what results. The rationale of this position is the belief that once we can

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find the ultimate organization of reality and its mechanisms of change, we will be able to apply that knowledge in the "real world". Utility is a side effect.

In contrast, since contextualists start with the whole, breaking it up into parts is a purposive psychological act. Thus, "truth" refers to the achievement of a purpose and multiple truths are possible. This means that contextualists need to state their values and goals as scientists (Hayes, 1993).

Functional Contextualism is related to but distinct from more descriptive forms of contextualism such as Social Constructionism, Hermeneutics, Dramaturgy or Narrative approaches, in which appreciating a sense of the participants in the whole constitutes the analytic purpose. Conversely, the specific analytic purpose of Functional Contextualism is the prediction and influence of psychological interactions with precision (a limited number of constructions apply to any one event), scope (a limited set of constructions are needed to explain events in general) and depth (constructions cohere across scientific levels of analysis). Accomplishment of this purpose becomes the metric of any functional contextual analysis.

It is that feature of Functional Contextualism that most ensures that practice and basic work stay linked. All valid knowledge is inherently practical in this view. Functional Contextualism embraces the use of experimental procedures, but not as a way of "knowing" the structure of reality, but as a way to accomplish the local and situated goals of the researcher. What differentiates this approach from brute force empirical study of the applied impact of techniques is the high levels of scope and depth of the kind of knowledge being sought. Thus, it is not surprising that ACT is the only currently popular form of behavioral and cognitive therapy with its own robust *basic* research program on language and cognition.

In the following section we will develop the previous argument by means of presenting that basic program. At the same time we will describe the connections with the philosophical assumptions presented above and finally the applied implications for the ACT model of clinical intervention.

The model underlying of ACT

Relational Frame Theory and ACT evolved at the same time, and this is why it is difficult to trace a line between both. This is unlike other analytical traditions, where the development of a theory, and the development of applied methods, take different paths and are usually undertaken by different laboratories and authors. One of the core assumptions of the ACT/RFT program of research and in line with Functional Contextualism, is that the distinction between basic and applied science becomes irrelevant when we assume *a)* that the division or partition of reality is only legitimate in regard to the accomplishment of the purposes of the researcher, and *b)* when the analytic goal is one that fully encompasses the common-sense goal of applied psychological work: the prediction and influence of psychological interactions. Seen from this perspec-

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tive, there is no successful basic research that it is not applied, nor fully successful applied research without basic implications.

Functional Contextualism has its root in the behavior analytical tradition. Skinner, we have argued (Hayes & Brownstein, 1986; Hayes, Hayes & Reese, 1988), was an intuitive functional contextualist. He emphasized the history and context of an organism as a whole in its interaction with the environment, and the "prediction and control" as his analytic purpose. He embraced the importance of precision, scope, and depth in his focus on the generation of basic behavioral principles as a means of understanding complex human behavior.

Behavior analysis has had a limited impact on applied work with highly verbal subjects for two reasons. First, it is philosophically confused by the presence of both mechanistic and contextualistic strains within it. For example, some behavioral researchers have focused more on the topographical features of particular behaviors and have deemphasized its functional dimension. For them the frequency and intensity of a particular behavior (say waving your hand to someone) is the target of their analysis, whereas from a contextualistic viewpoint is the function of that behavior that need to be analyzed (saying hello, saying good bye or any other purpose that could be achieved with the same exact act).

The second problem is Skinner's approach to verbal behavior (Skinner, 1957). Although Skinner's attempted to define language from a functional and historical perspective, his approach did not lead to a comprehensive program of empirical research. Language and cognition remained unsolved in part because contradictions in his definition of verbal behavior (Hayes *et al.,* 2001). Regardless, without a robust account of cognition, penetration of behavior analysis into adult clinical work was limited.

Relational Frame Theory is a *post-Skinnerian* account of language and cognition, which is nevertheless fully Skinnerian in the sense of retaining the core assumptions of the contextualistic wing of behavior analysis. The core idea of the RFT research program can be readily stated: there are relational operants.

Operants are classes of behavior shaped by its consequences, and they are strengthened or weakened according to the principles of positive reinforcement, negative reinforcement, extinction and punishment. The core idea of Relational Frame Theory is that the ability to relate events in many possible ways, regardless of their formal properties, is an operant in and of itself.

All complex organisms can relate events because of their formal properties (Reese, 1968), but humans derive that relational performance and bring it under arbitrary contextual control. A non-human animal can readily learn that a five cents euro coin is bigger than a ten cents coin; but verbal organisms can learn by attribution that the value of five cents is smaller than ten cents. Thus, RFT argues that what is special about human language is its learned basis in arbitrarily applicable relational responding.

This psychological process is of fundamental importance for the survival of the individual in its environment and, according to RFT, is responsible for the evolutionary success of the human species comparing to other organisms. However, this process has the counter effect of maintaining the presence of

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disturbing psychological experiences across almost any sort of event by virtue of the bidirectional and combinatorial quality of this sort of responding.

In what follows we will develop a small set of ACT concepts and link them both to RFT and to Functional Contextualism by way of showing how this approach is integrated from philosophy, through theory, to technique.

Experiential Avoidance

One of the core concepts that has flowed from the ACT/RFT model is Experiential Avoidance. Experiential Avoidance is the deliberate attempt to change or reduce difficult thoughts, feelings, memories, or sensations at the cost of overt effective action. There is some evidence that Experiential Avoidance might be at the core of psychopathological processes (Hayes, Wilson, Gifford & Follette, 1996; Hayes & Gifford, 1997).

From an RFT point of view, Experiential Avoidance is the natural result of the learned ability to relate events arbitrarily. It means that pain is no longer avoidable by avoiding the situations that produce it. Pain can be brought to mind anywhere, and by any event. Seeing a beautiful flower can make one cry at the thought of a lost loved one who is not there to see it. As a result of the inability to control pain by controlling situations, people begin to attempt to control it directly.

To control pain directly and purposefully, however, is to follow verbal rules that put together attention toward and detection of the undesirable pain, escape or avoidance from it, and possible negative outcomes that may come if this does not occur. However, those processes together tend to evoke or elicit the feared pain itself. Attention and detection increases the probability that pain or threats of pain will be detected which means more of the current environment will be linked to pain; escape and avoidance increases the functional importance of the event; and linkage to negative outcomes evokes a negative reaction. Thus, Experiential Avoidance tends to build more pain into life rather than to reduce its role and occurrence. Indeed, this is exactly what the research now shows (Hayes *et al.*, 2006).

In ACT, experiential avoidance is dealt with by training in acceptance skills. ACT patients are asked to open up to difficult feelings and other private experiences and to feel them fully, without defense, as they are directly experienced to be. However, this process is not fully possible without defusion.

Defusion

Understanding both language processes and their interconnection with contingently shaped behavior is very important from an ACT point of view. The ACT model of intervention has the goal of potentiate more appropriate rules of generalization, based on the client's idiosincrasic experience. In this way, ACT has the aim of helping individuals to discriminate what are the consequences of their own behavior, including their own verbal activity.

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The problem of language is that increases the illusion (from a Functional Contextual point of view) that the world is pre-organized into parts and forces. This is because when we name an event and its attributes, we begin to miss the fact that this very act also constructs the event as an event. In ACT the process of interacting with the products of verbal relations as is they had direct functions is called "cognitive fusion." Verbal and cognitive entanglement leads to the illusion of an organized world, without noticing the process of construal that underlies it.

In ACT, fusion is dealt by promoting the awaneress of this relational process as it occurs. Said in another way, patients are taught to treat thoughts as an arbitrarily applicable process of thinking, not as the seemingly non-arbitrary products of thinking. This is done by undermining the contexts that give rise to the illusion of literal meaning, through such processes as sense-making, story telling, reason giving and the like.

In defusion, direct attacks on the literal truth of thought are absent. Relational operants are not extinguished by logical challenge since this is itself based on a relational operant. Therefore, we need to find ways of speaking with our clients that provide general rules of generalization without attaching individuals to the literality of language. The ACT strategy with respect to that is the use of metaphors and stories, because they do not logically establish literal relations amongst events but instead provide a more general context that may indicate more effective forms of action. Defining what is effective, however, requires a third step: clarification of values.

Values

Effective action cannot be defined in a vacuum if we assume the Pragmatic Truth Criterion of Functional Contextualism. For an individual to define "effective action" he needs to clarify effective action towards *what*. The partition of the world in different parts must have a reason or purpose and this is what lead to the emphasis on values clarification in ACT. Values give coherence to the acceptance of uncomfortable private events and at the same time indicate the particular aspects of the environment that are most important.

In ACT values are not verbally defended – they are viewed as choices. This is necessary since if values determine functional truth, and functional truth *is* truth rather than literal truth, it would be inconsistent and incoherent to attempt to use literal truth (e.g., analysis; reasons; logic) as the grounds for values.

ACT outcomes and data

In the next section we will present some of the preliminary outcome data of the ACT/RFT model. For a more extended review of the literature the reader should refer to other publications especially written for this purpose (see Hayes *et al.*, 2006; and Hayes, Masuda, Bissett, Luoma & Guerrero, 2004).

The original form of ACT was called Comprehensive Distancing (Hayes & Melancon, 1989). It was first tested compared to Beck's Cognitive Therapy

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(CT) in a small Randomized Controlled Trial on depression (Zettle & Hayes, 1986; Zettle & Hayes, 1986, 1987). The results of this initial study (performed by a clinician trained at the Beck's Center for Cognitive Therapy) indicated that ACT was more effective than CT in the follow-up outcomes it produced. The data also showed that there were differences in the mechanisms of change detected for each condition in that the believability of depressogenic thoughts were more rapidly reduced in the ACT condition than in the CT condition. A recent re-analysis (Hayes *et al.,* 2006) showed that this effect fully mediated the difference in ACT and CT outcomes.

These promising outcomes were put on hold for nearly 15 years while the work on Functional Contextualism and RFT advanced to the point that their foundations were secure. Then with the publication of the first book length treatment (Hayes *et al.*, 1999), research on both clinical outcomes and the model of psychopathology began in earnest.

Workplace stress was measured in a study by Bond and Bunce (2000). 90 volunteers from a media organization were randomly assigned to either an ACT group (n= 30), an Innovation Promotion Program (n=30) which helped participants to identify and change causes of occupational stress, and a waiting list (n=30). There were improvements in mental health and work related variables in both the ACT and the IPP groups. Changes in the ACT group were mediated by acceptance of undesirable thoughts and feelings. Another study by the same authors (Bond & Bunce, 2003) looked at the role of acceptance and job control as they affect mental health job satisfaction, and work performance. This panel study was done on 412 participants and demonstrated that acceptance affected mental health as well as job satisfaction and performance. It also showed that benefits accrued from greater job control were enhanced by acceptance.

ACT has also been successful in treating nicotine addiction. In a study by Gifford and colleagues (2004), 76 nicotine dependent smokers were randomly assigned to an ACT group tailored for smoking, or a Nicotine Replacement Therapy (NRT). Outcomes were the same at post treatment, but participants in the ACT group had significantly greater success at the one year follow-up.

There is evidence that supports the use of ACT as being more effective than Twelve-Step-Facilitation and methadone maintenance, or maintenance alone when combined with methadone maintenance for polysubstance abusing opiate addicts (Hayes *et al.*, 2004b). The ACT group was associated with lower overall objectively assessed drug use at follow-up than methadone alone, and lower overall subjectively assessed drug use than twelve step facilitation at follow-up. Similar outcomes have been shown for ACT and marijuana dependence (Twohig, Shoenberger & Hayes, in press).

The application of ACT in effecting self-care for diabetic patients has also been examined (Gregg, Callaghan, Hayes & Glenn-Lawson, in press). In this study, 81 individuals with type-two diabetes were randomly assigned to either an ACT group or a group that received education on diabetes. Participants in the ACT group showed substantially greater changes in their self-report and self-management behavior.

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A recent study on epilepsy (Lundgren, Dahl, Melin & Kees, in press) found that a 9 hour program of ACT for poor South African black epileptics greatly reduce seizures and improved quality of life over the next year.

ACT has also been used to treat practitioners of mental health. In a study by Hayes and colleagues (2004a) substance abuse counselors were randomly assigned to either an ACT group or a group which received multicultural training. The purpose of the treatments was the overall reduction of stigmatized attitudes and burnout for substance abuse counselors. The ACT group showed a reduction in stigmatized attitudes and burnout at follow up. ACT had a greater impact on the rates of burnout at follow-up and believability of stigmatized attitudes than the multicultural group. Another study showed that after clinicians were trained in Group Drug Counseling, they adopted its methods more when followed by ACT-based supervision and consultation (Luoma *et al.*, in press).

Another study addressed the effectiveness of ACT with regard to panic disorder (Levitt, Brown, Orsillo & Barlow, 2004). 60 participants with panic disorder were randomly assigned to one of three groups in which they listened to a tape describing either acceptance, emotional regulation, or a neutral narrative. They then spent 15 minutes breathing air containing 5.5% carbon dioxide, which has been shown to induce panic. Participants who listened to the emotional control tape showed the same degree of willingness to participate in a second challenge as those who listened to the narrative (control group). However, those who listened to the acceptance tape showed a greater willingness to participate in a second challenge than either other group.

ACT has been shown to be as effective as Systematic Desensitization in treatment of math anxiety (Zettle, 2003). 24 college students participated in this study in which they were randomly assigned to either ACT or systematic desensitization for math anxiety. Results showed a substantial yet similar degree of reduction of self-report of math anxiety for both groups, but trait anxiety improved more in desensitization.

In treatment of psychosis, ACT has been associated with lower rates of rehospitalization and higher rates of reported symptoms than treatment as usual (Bach et al., 2002). These results reflect the goal of ACT which is not symptom reduction but improvement in overall quality of life. In a similar study done more recently (Gaudiano & Herbert, 2006), similar results were produced when measuring rehospitalization rates for psychotic patients treated with either ACT or enhanced treatment as usual. At the four month follow up, 45% of the participants in the enhanced treatment as usual group had been rehospitalized, comparing to 28% of the participants of the ACT group.

A randomized trial for women engaging in self-harm (Gratz & Gunderson, 2006) found that ACT in combination with Dialectical Behavior Therapy produced strong reductions in self-harm.

A study was recently done in Sweden (Dahl, Wilson & Nilsson, 2004) where 14% of the working population is on long term sick leave or early retirement due to chronic pain. The 19 participants were randomly put into a group in which they were given either Medical Treatment As Usual (MTAU)

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or MTAU and ACT. At the post-assessment and the six month follow-up, participants in the ACT group had taken fewer sick days and had utilized less medical treatments. These results have been confirmed in two large open effectiveness trials (N = 108 and 252) with a comprehensive ACT program for patients with on average more than 10 years of chronic pain (McCracken, Vowles & Eccleston, 2005; Vowles, McCracken & Eccleston, in press).

A small randomized trial with study was done on 25 adults diagnosed with trichotillomania (Woods, Wetterneck, & Flessner, 2006) showed that ACT plus habit reversal significantly improved hair pulling, anxiety, and depression outcomes as compared to a wait list. These were maintained at a 3 month follow up. Wait list participants also then improved once they too received the treatment. Similar results have been shown for ACT for chronic skin picking (Twohig, Hayes, & Masuda, 2006a), obsessive compulsive disorder (Twohig, Hayes, Masuda, 2006b), and parental distress and depression associated with raising disabled children (Blackledge & Hayes, 2006). Finally, ACT has been shown to significantly reduce racial prejudice over and above education alone (Lillis & Hayes, in press).

What is perhaps most surprising as an applied matter is the range of problems that ACT can be applied to, but perhaps more exciting scientifically the majority of these studies have found that those who improved in their outcomes did so because of changes in ACT processes.

Conclusion

In this article we have explained how a comprehensive understanding of ACT includes some notion of its epistemological and ontological assumptions as well as the principles of verbal and nonverbal behavior. We have briefly shown how the ACT concepts and techniques stem from basic behavioral principles, and at the same time, how the ACT/RFT notion of science, requires an understanding of Functional Contextualism. Overall we have tried to describe the multiple interconnections between Functional Contextualism, Behavior Analysis, Relational Frame Theory, and Acceptance and Commitment Therapy. Additionally, we have argued towards a unified model of science, where applied and basic concerns evolve together. Furthermore, we have proposed that the ACT model does just that, links basic behavioral principles to psychological human suffering. Finally, we have presented an overview of the clinical outcome data of ACT, which points out to how this comprehensive model of intervention leads to positive results across different psychological disorders and health issues.

REFERENCES

Blackledge, J.T. & Hayes, S.C. (2006). Using Acceptance and Commitment Training in the support of parents of children diagnosed with autism. *Child & Family Behavior Therapy, 28 (1),* 1-18.

© 2007, Universitat de Barcelona, Facultat de Psicologia

Bond, F.W. & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of Occupational Health Psychology, 5,* 156-163.

Bond, F.W. & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied Psychology, 88,* 1057-1067.

Dahl, J., Wilson, K.G. & Nilsson, A. (2004). Acceptance and Commitment Therapy and the treatment of persons at risk for long-term disability resulting from stress and pain symptoms: A preliminary randomized trial. *Behavior Therapy, 35,* 785-801.

Gaudiano, B.A. & Herbert, J.D. (2006). Acute treatment of inpatients with psychotic symptoms using Acceptance and Commitment Therapy. *Behaviour Research and Therapy, 44,* 415-437.

Gifford, E.V., Kohlenberg, B.S., Hayes, S.C., Antonuccio, D.O., Piasecki, M.M., Rasmussen-Hall, M.L. et al. (2004). Acceptance-based treatment for smoking cessation. *Behavior Therapy, 35,* 689-705.

Gratz, K.L. & Gunderson, J.G. (2006). Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with Borderline Personality Disorder. *Behavior Therapy, 37*, 25-35.

Gregg, J.A., Callaghan, G.M., Hayes, S.C. & Glenn-Lawson, J.L. (in press). Improving diabetes self-management through acceptance, mindfulness, and values: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*.

Hayes, S.C. (1993). Analytic goals and the varieties of scientific contextualism. In S.C.Hayes, L. J. Hayes, H. W.Reese & T. R. Sarbin (Eds.), *Varieties of scientific contextualism* (pp. 11-27). Reno: Context Press.

Hayes, S.C., Barnes-Holmes, D. & Roche, B. (2001). *Relational Frame Theory. A post-Skinnerian account of human language and cognition.* New York: Kluwer Academic.

Hayes, S.C., Bissett, R., Roget, N., Padilla, M., Kohlenberg, B.S., Fisher, G. et al. (2004a). The impact of Acceptance and Commitment Training and multicultural training on the stigmatizing attitudes and professional burnout of substance abuse counselors. *Behavior Therapy, 35,* 821-835.

Hayes, S.C. & Brownstein, A.J. (1986). Mentalism, behavior-behavior relations, and a behavior-analytic view of the purposes of science. *Behavior Analyst, 9,* 175-190.

Hayes, S.C. & Gifford, E.V. (1997). The trouble with language: Experiential avoidance, rules, and the nature of verbal events. *Psychological Science, 8,* 170-173.

Hayes, S.C., Hayes, L.J. & Reese, H.W. (1988). Finding the philosophical core: A review of Stephen C. Pepper's *World Hypotheses. Journal of the Experimental Analysis of Behavior, 50,* 97-111.

Hayes, S.C., Luoma, J.B., Bond, F.W., Masuda, A. & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44,* 1-25.

Hayes, S.C., Masuda, A., Bissett, R., Luoma, J. & Guerrero, L.F. (2004). DBT, FAP and ACT: How empirically oriented are the new behavior therapy technologies? *Behavior Therapy, 35,* 35-54.

Hayes, S.C. & Melancon, S.M. (1989). Comprehensive distancing, paradox, and the treatment of emotional avoidance. In L.M.Ascher (Ed.), *Therapeutic paradox* (pp. 184-218). Guilford Press.

Hayes, S.C., Strosahl, K.D. & Wilson, K.G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behavior change.* Guilford Press.

Hayes, S.C., Wilson, K.G., Gifford, E. V., Bissett, R., Piasecki, M., Batten, S.V. et al. (2004b). A preliminary trial of twelve-step facilitation and Acceptance and Commitment Therapy with polysubstance-abusing methadone-maintained opiate addicts. *Behavior Therapy, 35,* 667-688.

Hayes, S.C., Wilson, K.G., Gifford, E.V. & Follette, V.M. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,* 1152-1168.

Levitt, J.T., Brown, T.A., Orsillo, S.M. & Barlow, D.H. (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.

Lillis, J. & Hayes, S.C. (in press). Applying acceptance, mindfulness, and values to the reduction of prejudice: A pilot study. *Behavior Modification.*

Lundgren, A.T., Dahl, J., Melin, L. & Kees, B. (in press). Evaluation of Acceptance and Commitment Therapy for drug refractory epilepsy: A randomized controlled trial in South Africa. *Epilepsia*.

Luoma, J.B., Hayes, S. C., Roget, N., Fisher, G., Padilla, M., Bissett, R., Kohlenberg, B. K. , Holt, C. & Twohig, M.P. (in press). Augmenting continuing education with psychologically-focused group consultation: Effects on adoption of Group Drug Counseling. *Psychotherapy Theory, Research, Practice, Training.*

McCracken, L.M, Vowles, K.E. & Eccleston, C. (2005). Acceptance-based treatment for persons with complex, long-standing chronic pain: A preliminary analysis of treatment outcome in comparison to a waiting phase. *Behaviour Research and Therapy, 43*, 1335-1346.

Reese, H.W. (1968). *The perception of stimulus relations: Discrimination learning transposition.* New York: Academic Press.

Skinner, B.F. (1957). *Verbal behavior.* East Norwalk: Appleton-Century-Crofts.

© 2007, Universitat de Barcelona, Facultat de Psicologia

Twohig, M.P., Hayes, S.C. & Masuda, A. (2006a). A preliminary investigation of Acceptance and Commitment Therapy as a treatment for chronic skin picking. *Behaviour Research and Therapy, 44*, 1513-1522.
Twohig, M.P., Hayes, S.C. & Masuda, A. (2006b). Increasing willingness to experience obsessions: Acceptance and Commitment Therapy as a treatment for obsessive compulsive disorder. *Behavior Therapy, 37*, 3-13.
Twohig, M.P., Shoenberger, D. & Hayes, S.C. (in press). A preliminary investigation of Acceptance and Commitment Therapy as a treatment for marijuana dependence in adults. *Journal of Applied Behavior Analysis*.
Vowles, K.E., McCracken, L.M. & Eccleston, C. (in press). Processes of behavior change in interdisciplinary treatment of chronic pain: Contributions of pain intensity, catastrophizing, and acceptance. *European Journal of Pain*.
Woods, D.W., Wetterneck, C.T. & Flessner, C.A. (2006) A controlled evaluation of Acceptance and Commitment Therapy plus habit reversal for trichotillomania. *Behaviour Research and Therapy, 44*, 639-656.
Wilson, K.G. & Luciano, M.C. (2002). *Terapia de aceptación y compromiso. Un tratamiento conductual orientado a los valores.* Madrid: Pirámide.
Zettle, R.D. (2003). Acceptance and Commitment Therapy (ACT) vs. systematic desensitization in treatment of mathematics anxiety. *Psychological Record, 53,* 197-215.
Zettle, R.D. & Hayes, S.C. (1986). Dysfunctional control by client verbal behavior. *The Analysis of Verbal Behavior, 4,* 30-38.
Zettle, R.D. & Hayes, S.C. (1987). Component and process analysis of cognitive therapy. *Psychological Reports, 61,* 939-953.

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