Neuroscience Review

'Cognitive therapy versus medication for depression: treatment outcomes and neural mechanisms' by Robert J. DeRubeis, Greg J. Siegle, and Steven D. Hollon. *Nature Reviews: Neuroscience*, October 2008, *9*: pp. 788–796.

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The authors of this paper have conducted a large study where 240 depressed patients were randomly assigned to receive either an antidepressant drug, a placebo pill, or cognitive therapy for sixteen weekly sessions. They were assessed as to the severity of their depression at the start of the study, after eight weeks, and after sixteen weeks.

After eight weeks, the patients on the placebo had improved slightly; the ones on cognitive therapy had improved quite a bit more; and the ones on antidepressants had improved the most. After sixteen weeks, the patients on cognitive therapy had caught up with the ones on antidepressants and were now equally improved.

Results that say psychotherapy is as good as antidepressants are not particularly new, except that this study involved more subjects than most other available studies that compared medication with cognitive therapy (or indeed any form of psychotherapy). What is more interesting is that the authors followed up their patients for a year. During this time, the patients who had received cognitive therapy were only allowed the odd top-up session, whilst the ones on the antidepressant continued taking the drug, and came off it after a year. 76% of these latter patients promptly relapsed, compared to only 31% of the patients who had received cognitive therapy. By two years after treatment, the patients who remained well had decreased to about 50% in the cognitive therapy category, whilst out of the patients on antidepressant only about 20% were still well. In other words, the effects of the cognitive therapy endured in a substantial proportion of patients (they had learned something!), whereas the effects of the antidepressants were much more reversible and decreased rapidly once the medication was stopped.

ATTACHMENT: New Directions in Psychotherapy and Relational Psychoanalysis, Vol. 3, July 2009: pp. 214–217.

The results of this study were published in 2005. The authors have written the present review based on these previous results, but speculating a bit more about what the results might imply for the changes that either antidepressant medication or cognitive therapy might effect in patients' brains. Because the effects of cognitive therapy lasted longer than the effects of the antidepressant drug, they assume that the two must affect people's brains in different ways. They focus their thinking around two areas of the brain. One is the amygdala, a small area in the limbic system, which appears to be involved in the processing and organizing of powerful, 'primitive' feelings. This is shown to be relatively hyperactive in depressed people, and antidepressant medication tends to decrease its activity. The other area is the prefrontal cortex, a much larger area that is held to organize more 'rational' thoughts and can thus presumably conceptualize feelings and reality-test whether they are appropriate or not. In depressed people there appears to be a relative under-activity in this area, and cognitive therapy tends to enhance its activity (although the authors have to slightly wave their hands at this point). In both cases, the relative activity of these two areas gets re-balanced in favour of the prefrontal cortex.

One of the things that I like to do when I read such studies is to ask myself *how it would feel to be experiencing these kinds of changes in my brain*. I do that because I am a psychotherapist, and most of the time I regard it as my job not to tell my clients what is happening inside their brains but to get a sense of what their experience is like. The speculations in this paper rather lend themselves to an – equally speculative – parallel between the more structural neuroscience and the more functional psychotherapeutic thinking. I can imagine an association of the amygdala with perhaps more regressed and paranoid thoughts that are born out of fear and bad experience. Moreover, I can imagine the prefrontal cortex as an area representing a more adult containing ego that can reassure the fears of the internal child. This would tie in rather neatly with the finding that antidepressant medication decreases our tendency to regress and allows us to function on a more adult, here-and-now basis. It would also accommodate the effect of cognitive therapy, which purports to address the lack of reality testing in the regressed thinking of the depressed person. It could even seem plausible that ego-building and ego-strengthening effects might be more long lasting than the effects of antidepressants.

The question arises for me at this point whether all of this, satisfactory speculation though it may be, is actually relevant to the clinical practice of psychotherapy with depressed people. It seems very clear that the 'model' of depression I have presented above (as a state where regressed feelings override the here-and-now reality) is a very primitive one. The description would more appropriately relate to neurosis in general, and there is nothing here that addresses the specific subjective experience of being depressed. Equally, there is nothing here that could shed any light on the aetiology of depression, that

could give us any indication of how someone might go from being well to being in the prison of depression. It seems particularly unfortunate that the label 'depression' appears to have been used rather indiscriminately in this paper, without an attempt to distinguish between the many different types of depressive illnesses that we all come across in clinical practice. Indeed, the paper sounds a little as if the authors did not quite know that people with depression are people: the term depression is treated like a terrible illness that cannot be understood or countenanced. We know that this is not so.

In that sense, we learn nothing new here. It may be nice for a group of neuroscientists to confirm that depressed people are overwhelmed by their negative feelings and unable to reassure themselves that these do not pertain to what is happening here and now, but, really, we have known this for a long time. The neuroscientists are just laboriously retracing steps that psychotherapy made decades ago. Nor can I see any obvious implications of these neurobiological speculations for clinical practice.

There remains the question of the political context of the paper. It seems very good that the kind of evidence that the powers-that-be tell us they are looking for, i.e. randomised controlled trials and brain scans (even if the latter in this case are hypothetical and not at all experimental, which might easily be overlooked), shows that therapy is in some ways 'better' (in the sense that it is a form of education and, therefore, may last beyond the time of its application) than antidepressants. Incidentally, this kind of evidence also sort of implies that the display of a brain scan makes the improvement in someone's mental well-being more 'real', which seems a bit nonsensical.

I suspect that the study will also annoy a large number of colleagues, because it only talks about cognitive therapy and appears only interested in the effects that this therapy has on the brains of depressed people. So it leaves out the effects of what the majority of psychotherapists and counsellors in this country do, whether they practice psychodynamic or humanistic or analytical therapy or any other modality. It also leaves out the question of a more lasting resolution of depression, which we know is possible with more in-depth psychotherapy, instead of a state of being OK that gradually gets eroded again over the years (as this study suggests to me).

This is of course a problem in the profession: it has somehow managed to not adequately represent to the scientific community that cognitive therapy is just one form of therapy, which has its advantages and its drawbacks like any other modality, and that we can be pretty confident in predicting that it is not going to work for everybody because no psychotherapeutic modality does.

I can make a guess at one of the reasons that cognitive therapy is so popular among scientifically inclined people. One of its strengths is to give explanations: narratives that clients can hold onto, and that interested laypeople can also relate to quite easily. Cognitive therapy seems to appeal to many rational-minded

people because it offers the narrative that its therapeutic effect is solely the result of the technique and nothing to do with the person who delivers it. This makes it a very attractive therapy to anyone who feels uncomfortable with the vagaries and imponderables of human relationships. Unfortunately, to my knowledge research across different psychotherapeutic modalities tends to come up with one clear-cut result: that the most therapeutic effect stems from the quality of the therapeutic relationship. I see no reason to believe that cognitive therapy should be exempt from this experimental finding.

What also seems to me a pity is that cognitive therapists can fall into the trap of thinking that they know what they are doing in the sense of knowing what the effect is in the client of what they are doing. All of us therapists do that a lot, I think; it is so very tempting. But, frankly, I feel doubtful whether anyone knows why their therapy works. Psychotherapy is a largely empirical undertaking, and it is certainly subject to empirical validation: people clearly get better and feel that psychotherapy is a worthwhile pursuit. However, I think it is extremely easy to construct a convenient hypothesis of how and why a therapy works, and quite difficult to falsify such a hypothesis.

In terms of clinical psychotherapeutic work, it could be regarded as one of the defining criteria of what we call 'relational' psychotherapy (and that a great many therapists claim for themselves) that we do not purport to know what happens to our interventions in the client: it is a function of the therapeutic relationship to make the dialogue between therapist's intention and client's experience a topic of joint exploration, and thus to make the mechanism of action of the therapy a co-constructed part of the therapeutic relationship and of the therapy itself.