Changes in construals of Tic producing situations following Cognitive and Behavioral Therapy

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Summary.

Twelve clients suffering from chronic tics participated in one of two treatment programs: either a behavioral group using competing response therapy or a group using Beck style cognitive restructuring. A repertory grid based upon the personal construct psychology of George Kelly was administered to all clients before and after treatment. The grid comprised a set of elements made up of situations with high, medium and low risk of eliciting tics and constructs were derived from comparisons between them. Clients's ratings of the elements on the constructs were subjected to a principal components analysis using an INGRID program. Following treatment the total variation around construct means decreased in both groups but significantly more in the cognitive group indicating a narrowing of the difference in their perceptions of situations which formerly indicated high and low risk of inducing tics.

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Tics are repetitive involuntary contractions of functionally related groups of skeletal muscles in one or more parts of the body. There are many behavioral treatments including awareness training, relaxation, massed practice and habit reversal (Azrin & Petersen, 1989) but there have been no systematic application of any cognitive therapy to such disorders. Yet tics might prove amenable to such treatment if their origin can be understood as a special case of planning and anticipating action in stressful situations. Prior to action, anticipations of lack of control might provoke the tic by the initiation of maladaptive movement commands. If these can be identified they can be used as focal points for a therapy which permits clients to confront certain anomalies in their thinking about action, and restructure them.

To uncover these contexts of relative control, i.e. of high, medium and low probability of tics occurring, repertory grids based upon Kelly's personal construct psychology (Kelly, 1955) were administered to twelve subjects with tic disorder, (6F, 6M, aged 23-49), having debilitating tics for more than one year which were not neurological or pharmacological in origin. The group included 3 head tics, 2 nose tics, 2 eye tics 2 cheek tics, 1 face, 1 lip, and 1 elbow tic.

The grid is an instrument designed to assess the dimensions of thought (constructs) relevant to individuals which they use to organize their impressions of other people, objects, situations or events (elements). These dimensions are bipolar e.g. "good/bad", "excitable/calm" and are the basis for acting in a planned and purposeful way. In this study the grid comprised nine elements made up of three situations each of high, medium, or low risk of incurring a tic (O'Connor, Gareau, Blowers, 1993). One concrete construct -- "tics likely to occur/tics unlikely to occur" was supplied, the rest were elicited using a procedure in which subjects described differences between high and low risk situations and when these were exhausted further

comparisons were attempted with medium risk contexts. For psychometric purposes each bipolar construct was treated as a seven point scale and each element was graded on each construct. The resulting data was analyzed using a computerized grid analysis package -- INGRID -- developed for such purposes (Slater, 1972, 1977). Grids were administered to all subjects twice: pre- and post-treatment. Constructs obtained from the first grids were also used in the second grids administered one month after completion of therapy.

The constructs emerging from the pre-treatment grids pointed to a number of qualitative cognitive states associated with varying probabilities of tic onset such as "feeling at ease vs. feeling insecure in the presence of others"; "feeling under pressure to complete a task vs. taking one's time".

Subjects were allocated randomly to one of two treatment schedules. The behavioral-therapy group concentrated entirely on muscles involved in the habit. At the onset of the tic they rehearsed prevention either by voluntarily contracting muscle groups antagonistic to the tic contraction or by relaxing those muscles. The cognitive-therapy group developed a response hierarchy based upon the constructs elicited from their repertory grids. The therapy focused upon challenging assumptions about these constructs which amounted to binary classifications of action (e.g., either I finish all my tasks at once or I'm lazy), and exploring ways that transcended such classifications (Beck & Emery, 1985). It emphasized the evaluation of personal actions not the motor responses controlling the habit.

From the INGRID analysis, the total variation around the mean ratings of each construct and the unit of expected distance between elements revealed that although much broader discriminations between high and low risk situations emerged prior to rather than after therapy, both groups showed a drop in variation around construct means (cognitive, pre/post treatment: $x=39.38/28.73$; $S.D.(n-1)=6.02/9.32$; behavioral: $x=34.02/28.8$; $S.D.=5.15/9.73$) As tested using

Wilcoxon, this difference was significant ($T=0$, $n=6$, $p<0.02$) only for the group which received a cognitive treatment. Subjects from both groups showed clinical improvement in the one month post-treatment follow-up sessions, perceiving tic-producing situations as less likely to induce tics than prior to treatment. This was shown by the post-treatment drop in mean rating for the supplied construct "tics likely/unlikely to occur" (cognitive: $x=3.89/2.72$; S.D.$(n-1)= 0.28/0.62$; behavioral: $x=4.15/2.37$; S.D.$=0.37/1.16$).

The repertory grid has rarely been used as a tool in facilitating and monitoring cognitive therapy. By choosing as grid elements situations in which tics arise, we effectively adopted a behavioral analysis of functional stimuli to yield a construct system for cognitive use. The study thereby confirms the grid as a viable clinical tool in eliciting individualized perceptions of clinical states, and in assessing relative efficacies of treatment.

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