

Abstract (Short) - A Mathematical Model of Psychotherapy  
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In this project we attempt to predict the evolution of the therapist-client relationship using mathematical models. The positivity of the client and therapist can be modeled with coupled differential equations, with the client's mood depending on the therapist's and the therapist's depending on the client. By solving these equations we come to several conclusions. First, the partner most responsive to the other ends up the most positive. Second, equilibrium is reached through a spiral trajectory, with the actors' emotional states going through many ups and downs. Third, the more influenced they are by their partner, the more ups and downs they will go through. These conclusions help us understand the therapeutic relationship and, in doing so, may help us to improve it.