

# **Thinking Systems About the Placebo Effect**

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Thomas Kuhn in his book, The Structure Scientific Revolutions, writes "Scientific revolutions are inaugurated by a growing sense that an existing paradigm has ceased to function adequately in the exploration of an aspect of nature ..." (1). Kuhn noted that this sense of inadequacy of an existing paradigm was often restricted to a "narrow subdivision of the scientific community" (2). I believe that Murray Bowen inaugurated the beginning of a paradigm shift in psychiatry when he recognized that the individual model which located pathology in the person with the symptoms could not adequately account for the observations he was making of families with a schizophrenic member who were all living on a research ward at NIMH. He found a change in one member of the family was automatically followed by complementing changes in the other two members. Eventually his observations over a five year period led to a new theory, a theory which conceptualized the family as an emotional unit that governed individual behaviour and development. The placebo effect may be one of those "aspects of nature" that has not been adequately understood from a paradigm that focuses primarily on the individual. This paper will suggest some possible contributions of systems thinking toward a better understanding of the placebo effect.

People vary in the extent to which they are affected by placebos in clinical trials. Factually, not everyone responds to placebos, and of those who do respond, people vary in the degree of the response. Arthur and Elaine Shapiro quote a review of fifty-five studies by one author who found placebo reactions ranging from twenty-four to fifty-eight percent (3). These figures, however, mean that forty-two to seventy-six percent of people in the studies did not respond to placebos! The Shapiros go on to report placebo effectiveness has ranged from thirty to fifty percent in depression, which also means fifty to seventy percent of people who are depressed do not respond to placebos. When compared with effective drugs, the placebo effect was found to be fifty- nine percent as effective as tricyclic antidepressants, sixty-two percent as effective as lithium ..., fifty-four to fifty-six percent as effective as injected morphine and common analgesia (4). Surgery seems especially prone to placebo effects. Ligation of the mammary artery to stimulate collateral circulation for the treatment of anginal pain was in vogue from 1955 to 1960 after two uncontrolled studies reported sixty-eight and ninety-one percent improvement. Two subsequent controlled studies reported improvement in sixty-seven percent of twenty one patients whose mammary arteries had been ligated and in seventy one percent of fourteen patients treated with a sham skin incision!(5) Exploratory back surgery was performed on 346 patients where no lumbar disc herniation was found to be present. Even though the exploratory surgery found no disc herniation, thirty-seven percent of patients reported complete relief of sciatica, and forty-three percent had complete relief of back pain following the exploratory surgery (6). What is significant in all of these studies is the fact that people do vary in whether they respond to placebos at all, and if they do respond, people vary in the degree of response.

How might we understand this variation? Bowen's concept of differentiation of self may partially account for some of the variation. Bowen noted that people vary along a continuum according to the degree to which there is fusion or relative differentiation between their emotional and intellectual systems. People who are low on the scale of differentiation are people whose intellectual and emotional systems are so fused that their lives are dominated by emotion. These are people who are "less flexible, less adaptable,

and more emotionally dependent on people around them. They are easily stressed into dysfunction and it is difficult for them to recover from dysfunction" (7). At the other end of the scale are those whose emotional and intellectual systems are more separate and "whose intellectual functioning can retain relative autonomy in periods of stress" (8). People at this end of the scale are "more flexible, more adaptable, and more independent of the emotionality around them. They cope better with life stresses, their life courses are more orderly and successful, and they are remarkably free of human problems. In between the two extremes is an infinite number of mixes between emotional and intellectual functioning" (9). People lower on the scale are more sensitive to relationship than people higher on the scale. They are more affected by what they perceive as the expectations, beliefs, and opinions of others. They are often quite adept at reading subtle nonverbal cues of what others want. Considerable amounts of energy go towards seeking approval and pleasing others. Since people lower on the scale are more sensitive to relationships than people higher on the scale, it may be that people with lower levels of differentiation are more likely to be influenced by the relationship variables involved in receiving a placebo. Prior evaluation of people's level of differentiation could form the basis of a prediction of whom will be most or least affected by the placebo. Such a study could test the idea that level of differentiation may be an important variable in accounting for variation in response to placebos.

Reduction of anxiety is thought to be one effect of placebos on people receiving them. Systems thinking broadens the focus to include the person's important relationship systems. If the amount of anxiety in a family goes down when a family member receives a placebo, this may be correlated with more of a placebo effect. If a family remains equally anxious, it may correlate with little change in the person's physical or emotional condition. A fifty year old man has a serious heart attack. He appears to make a good recovery physically, but becomes quite depressed. He has low energy and difficulty concentrating when he returns to work. His physician recommends exercise, change in diet, and refers him to a psychiatrist who places him on antidepressants. There is no change in the depression. A family therapist's initial evaluation of the family reveals an unusually high level of anxiety in the wife about her husband's depression. It was predicted if the wife could reduce the intensity of her anxious focus on her husband, his depression would lift. A course of family therapy with both husband and wife appeared to succeed in reducing the wife's anxiety. The husband's depression lifted~ his energy began to pick up and the "foggy mindedness" disappeared. When the anxiety of the wife came down, the husband's symptoms went away. In the original NIMH research, Bowen reported "innumerable examples in which anxiety in one person could become a physical illness in another. An overtly anxious mother would describe the patient's symptoms to the doctor. The patient would agree with the symptoms. The doctor would make a diagnosis and prescribe medication. Within a few hours, a process could change from anxiety in the mother to pain in the patient that had been diagnosed and was being treated." (10) If the family is the unit of illness, the placebo's effect in calming the relationship system of the family may be an important variable in the effect the placebo has on the person with the symptom. When anxiety in the family goes down, the effectiveness of a placebo may go up.

One can't think systems without also thinking triangles. Knowing how a person is functioning in the important triangles in their lives may also help to predict who is more or less likely to be affected by placebos. Howard Spiro, a gastroenterologist briefly described a thirty four year old woman who came to see him with "nausea, fullness, and a little pain ... It turned out the pain had started on Mother's Day two years before. She had been moving up the ladder in her corporation, a Fortune-500 company, but because her husband was also moving up a different ladder, she decided two years before (on Mother's Day), it was her job to stay home with the kids" (11). This could be an example of a person losing some of her self to the triangle with husband and children. If so, systems thinking might predict that a placebo would be either ineffective, or at best temporarily effective, so long as she remain caught emotionally in triangles between her kids and husband on the one hand and a career that was also important to her on the other. Murray Bowen insisted that significant change does not take place without a basic structural alteration in the underlying situation that gives rise to the symptoms. (12) A study which compares family emotional process among placebo responders and non-responders could yield new clues about emotional factors contributing to the placebo effect or non-effect. Any such comparative study would have to evaluate how the person receiving the placebo functions in their most important triangles. One can't think systems without also thinking triangles.

Historically, the placebo effect has been viewed more as a problem to be controlled for in research than as a matter worthy of investigation in its own right. More recent attempts to try and account for the placebo effect have begun to sense the inadequacies of an individual model of human functioning. Bowen family systems theory has the potential to illuminate broader relationship variables which could contribute to moving the study of the placebo effect more toward science. One day the placebo effect may be seen as a special case of broader, yet definable, emotional factors governing human behaviour.

## Footnotes

- (1) Thomas S. Kuhn, The Structure of Scientific Revolutions, (Chicago: University of Chicago, Second Edition, 1970), pp. 92.
- (2) Ibid.
- (3) Arthur K. Shapiro and Elaine Shapiro, "The Placebo: Is It Much Ado About Nothing?", in The Placebo Effect, Anne Harrington ed. (Cambridge, Massachusetts: Harvard University Press, 1997), pp. 21. (4) Ibid.
- (5) Ibid, pp. 22. (6) Ibid.
- (7) Murray Bowen, Family Therapy and Clinical Practice, (Northvale, New Jersey, Jason Aaronson Inc., 1978), pp. 362.
- (8) Ibid
- (9) Ibid.
- (10) Ibid pp. 59-60.
- (11) Howard Spiro in "Placebo: Conversations at the Disciplinary Borders", Anne Harrington, ed., in The Placebo Effect (Cambridge, Massachusetts: Harvard University Press, 1997), pp. 210.
- (12) Murray Bowen, Family Therapy and Clinical Practice, pp. 344.

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