

The Tragic Story of Elisabeth Targ

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Clearly we must be highly skeptical of any scientific claim that is made by "true believers," whether the beliefs being tested are religious or secular. Even the most sincere investigators may unconsciously select data that support their beliefs and ignore the data that do not, when those beliefs are deeply held. Yet another, very tragic, story needs to be mentioned to emphasize this point.

In 1998, psychiatrist Elisabeth Targ and her collaborators published a paper in *Western Journal of Medicine* which claimed that various forms of "distant healing," including prayer and "psychic healing," significantly improved the health of patients with advanced AIDS. They reported on what they claimed was a "double blind randomized trial" involving 40 patients in the San Francisco area. Here is how the authors summarized their results:

At six months, blind medical chart review found treatment subjects acquired significantly fewer new AIDS defining illnesses (0.1 vs. 0.6 per patient, $P = 0.04$), lower illness severity (severity score 0.8 vs. 2.65, $P = 0.03$), required significantly fewer doctor visits (9.2 vs. 13.0, $P = 0.01$), fewer hospitalizations (0.15 vs. 0.6, $P = 0.04$) and fewer days of hospitalization (0.5 vs. 3.4, $P = 0.04$). Treated subjects also showed significantly improved mood compared to controls (change in POMS [a measure of mood] -26 vs. +14, $P = 0.02$). There were no significant differences in CD4+ counts.

The fascinating tale surrounding this experiment and its aftermath was related in a recent article by Po Bronson in the December 2002 issue of *Wired* magazine. Targ was the daughter of famous parapsychologist Russell Targ who conducted experiments on extrasensory perception in the 1970s that were published in the journal *Nature* and then successfully refuted. Russell is a true

believer and Elisabeth grew up with a firm conviction that the mind possesses paranormal powers. Indeed, Russell made much of her apparent psychic abilities in his 1985 book the *Mind Race*, written with Keith Harary. While obtaining a degree in conventional psychiatry, the paranormal remained of interest to her and Elisabeth found willing support and collaboration from parapsychologists to conduct studies in distant healing.

As a direct result of her promising 1998 study, published in a peer-reviewed journal, Targ received \$1.5 million in grants from the U.S. National Institutes of Health's Center for Complementary and Alternative Medicine. The grants provided support for continuing distant healing studies on AIDS and further work on the brain cancer Glioblastoma multiforme (GBM). While rare, GBM is one of the most malignant forms of cancer with survival rates of about a year, even with the most drastic medical intervention. Patients were dying and it seemed that anything was worth a try.

By an extraordinary coincidence, in early 2002 Targ was diagnosed as suffering from from GBM. Surgery was unable to excise all the cancer and, understanding full well her slim chances of recovery by any medical means, Targ was unsure she wanted chemotherapy.

As word of Targ's illness spread, healing groups worldwide began to pray for her. As Bronson describes it,

Her bedroom turned into a circus. Healers from everywhere showed up wanting to help. It was rarely peaceful and quiet. There was Phillip Scott, a Lakota sun dancer who burned sage; Nicolai Levashov, a Russian psychic who waved his hands; Harriet Bienfield, an acupuncturist with rare Chinese herbs; Desda Zuckerman, an energy worker who used techniques inspired by the ancient methods of the Miwok peoples. The reverend Rosalyn Bruyere phoned often, trying to get on Targ's schedule. And, of course, there was her father, Russell, urging her to meditate, calm her mind, go to that place.

Sadly, neither science nor spirit was able to save Elisabeth Targ.

This tragic tale does not end with Targ's untimely death at 40. Bronson reports that the AIDS study published in *Western Journal of Medicine* had not been blinded—a fact not known to

the journal. He says he has confirmed the following from one of Targ's coauthors, biostatistician Dan Moore and physicist Mark Comings, who married Targ shortly before her death. Although not mentioned in the publication, the original study was designed to look at mortality rates. When Moore broke the code, he found that only one subject had died and so the mortality data were meaningless. Targ and the other collaborators insisted that Moore examine the data further and look at certain HIV physical symptoms and quality of life. He found that the treatment group did no better than the control group. In fact, in some cases they seemed to do worse. Targ urged him to keep looking. Finally, after more data mining, Moore found that the treatment group had "statistically significant" fewer hospital stays and doctor visits. Targ was at a conference at the time and excitedly announced the results.

However, as Bronson put it:

This isn't what science means by double-blind. The data may all be legitimate, but it's not good form. Statisticians call this the sharpshooter's fallacy—spraying bullets randomly, then drawing a target circle around a cluster. When Targ and Sicher wrote the paper that made her famous, they let the reader assume that all along their study had been designed to measure the 23 AIDS-related illnesses—even though they're careful never to say so. They never mentioned that this was the last in a long list of endpoints they looked at, or that it was data collected after an unblinding.

If Bronson's report is correct, the authors misrepresented their experiment, claiming they had done a blinded study and implying that their criteria were preselected, when, in fact, they searched many post-selected criteria until they found what they wanted to see.

Targ's paper is not the only questionable study on the efficacy of prayer that has been published by medical journals. The editors and referees of these journals have done a great disservice to both science and society by allowing such highly flawed papers to be published. I have previously commented about the low statistical significance threshold of these journals (p -value of 0.05) and how it is inappropriate for extraordinary claims (*Briefs*, March 2001). This policy has given a false scientific credibility to the assertion that prayer or other spiritual techniques work miracles, and several best selling books have appeared that exploit that theme. Telling people what

they want to hear, these authors have made millions.

Vic Stenger's next book. *Has Science Found God? The Latest Results in the Search for Purpose in the Universe* will soon be published by Prometheus Books.