AN EMPIRICAL ANALYSIS OF MEDICAL EVIDENCE IN CHRISTIAN SCIENCE TESTIMONIES OF HEALING 1969-1988

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In July 1988 the *Southern Medical Journal* published an unusual article entitled "Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit." The article reported on a rigorous controlled study investigating the effects of prayer on the recovery of several hundred heart patients at San Francisco General Hospital. Christians from several denominations were asked to pray regularly for specific patients. The physician conducting the study found that the patients supported by such prayer had somewhat fewer medical complications than other patients. As one newspaper headline provocatively (if simplistically) announced, "Researcher says prayer is good for your health."[1]

The study was unusual less for its results than because it took the practice of healing prayer seriously at all. In a commentary accompanying the study, Dr. William P. Wilson of Duke University Medical Center acknowledged that the article is "likely to arouse strong prejudice in some readers who believe that religion is not worthy of scientific consideration." Nevertheless, he went on, the "questions raised seem quite valid ones for scientific inquiry.... It seems to me that we in medicine who claim a holistic approach to diagnosing and treating the whole man should throw away our deterministic prejudices, expand our knowledge, and enlarge our therapeutic armamentarium. We need not only a change in the way we think, but also more research on the role of religion in healing."[2]

There has been relatively little medical research on religious healing over the years, in spite of a growing body of evidence from its practice. The most substantial evidence is undoubtedly to be found in the experiences of Christian Scientists, a denomination known for its long-respected newspaper, *The Christian Science Monitor*, and committed to Christian healing practice for more than a century. Perhaps because of the strong prejudices surrounding it, while this evidence is often cited by proponents or dismissed by skeptics, rarely has it been examined objectively and analytically or considered seriously on its own terms.[3] The purpose of this study is to begin to examine the existing evidence on Christian Scientists' experience — to assess what is there as well as the questions that remain to be answered.

BACKGROUND

For Christian Scientists, the practice of healing is one aspect of an active devotional life rooted in "quiet, disciplined spirituality" (as a *New York Times* religion writer recently explained) and involving considerable religious study. Their

practice is unique — and still controversial — because it is not approached as merely an adjunct to medical care but as a consistent mode of treatment in its own right.

Healing is considered the effect of spiritual law, not mere personal faith. Prayer, more than an appeal for special miracles, is ongoing communion with God and openness to God's present, active love. Christian Science practitioners — individuals devoting themselves to this healing ministry as a vocation — give full time to specific prayer for church members as well as nonmembers who request their help.

Christian Scientists' attitude toward medical care is not based on hostility to physicians or to modern science. On the contrary, the tradition emphasizes a healthy respect for reason and education and shares compassionate values, if not methods, with all the health-care professions.

Christian Scientists do not denigrate medical care for those who choose it, but they see its intense focus on the body, on physical and biochemical causes, as often reinforcing disease. It is also a focus radically different from, and not readily combinable with, a mode of healing which looks to God and spirituality as primary. For this reason, church members typically forgo medical treatment as a matter of choice and conviction, though their decisions in this regard are always their own. Christian Scientists feel spiritual healing is most effective when practiced with wholehearted devotion and, in general, significantly less effective when practiced in a context of primary reliance on medical care.

SOURCES

Since 1900, some 53,900 testimonies of healing have been published in the denomination's monthly and weekly periodicals, *The Christian Science Journal* and *Christian Science Sentinel.* These testimonies are manifestly religious rather than medical documents, but the great majority relate to physical healings, and many refer to conditions that have been authoritatively diagnosed.

Their religious purpose within the denomination is to express gratitude to God and, often, to share something of the spiritual experience or regeneration behind a healing. Most, though not all, of the testifiers are Christian Scientists and members of the church. All the testimonies are submitted on the initiative of the respective testifiers, and many who have had significant physical healings in Christian Science have not submitted testimonies. (One 1986 testifier healed of blindness wrote, for instance, that the experience seemed too holy to share even verbally for some time.[4]) Robert Peel estimates in his 1987 work *Spiritual Healing in a Scientific Age* that only a small percentage of the actual healings in Christian Scientists' experience are recorded in written form.[5]

In form and content these accounts are as varied as the individual testifiers. Some describe particular healings in detail, while others relate more briefly a number of healings that have occurred over the course of a lifetime. It is not uncommon for a single testimony to list in passing as many as six or eight such healings, major or minor, in addition to the primary experience or experiences on

which the testifier focuses. Healings merely listed without elaboration in a testimony are not included in the cumulative data given below, but they illustrate what Christian Scientists see as the normalcy of healing in the course of most adherents' lives. As one fourth-generation church member described: "Christian Science healing in our family was certainly quiet — nothing showy about it, nothing dramatic, just warm and reassuring and fairly frequent."[6]

The medical specificity of the testimonies also varies greatly. Since Christian Scientists do not routinely seek the care of physicians in time of illness, a large number of testifiers refer to healings of diseases or conditions that are not medically named. In most of these cases the conditions healed are described briefly in lay terms. In a significant proportion of other cases, however, testifiers do report specific medical diagnoses and prognoses, often explaining the circumstances in which these have been made, e.g., medical examinations required by employers, public health authorities, school officials, the military, or insurance companies; emergencies in which Christian Scientists were transported to a hospital but subsequently declined medical treatment; and situations in which individuals have turned to Christian Science for help only after unsuccessful medical treatment or prognoses of incurability.

It is fair to say in general that the testimonies' emphasis on the spiritual dimensions of healing militates against extensive discussion of either physical symptoms or clinical histories. This is understandably frustrating to medical commentators, who have often echoed Dr. Edward Mortimer's complaint that the testimonies are merely "anecdotes."[7] Any serious study of these accounts, however, must consider them in light of what they are rather than what they are not and do not pretend to be. While their anecdotal nature is obvious, it does not in itself nullify the possible medical significance of the experiences related in them, nor does it necessarily invalidate any strictly factual evidence they contain or point to. In some cases the published testimonies give only a slight indication of the extensive medical corroboration that exists on particular healings.

One 1978 testimony in the *Christian Science Sentinel,* for example, relates a healing of coronary artery disease for which the testifier had been hospitalized prior to her healing in Christian Science. The one-and-a-half page *Sentinel* account is vague in its description of the medical details, stating that a scheduled coronary artery operation had been cancelled abruptly because of a blood condition doctors said "made the operation inadvisable." The testifier was told she "would be an invalid as long as [she] lived because of the serious condition of [her] heart," but her testimony does not indicate the specific nature of either the heart or blood condition. It goes on to report that she turned to Christian Science several months later and was healed within a week, and that a subsequent physical examination confirmed the healing to "the amazement of the doctor."[8]

The large medical gaps in this anecdotal account illustrate precisely what medical readers have criticized in the Christian Science testimonies, yet the key question for the researcher is not how such a healing is described but what actually occurred — the case history behind the anecdote. In this instance, when contacted for further details on her experience several years after the testimony was

published, the testifier provided a lengthy affidavit detailing her examination and treatment by at least six different physicians in three hospitals and two clinics over a period of three years.[9] Whether or not "amazement" accurately describes the last doctor's state of mind on finding her unexpectedly healed, he was sufficiently surprised that he sent for her records from Temple University Hospital in Philadelphia and after reviewing them called her in for another extensive examination. Over a decade later the testifier obtained these records herself, at the request of the Christian Science church. The hospital diagnosis was coronary artery disease with obstruction of the right coronary artery, Meniere's disease, hyperthyroidism, and an undetermined blood disorder possibly "due to one of the medications that the patient was on."[10]

INTEGRITY AND RELIABILITY

Few even of the severest critics of Christian Scientists' practice have questioned the integrity of the individuals testifying to healings in the church's periodicals. Some have questioned the reliability of details reported in the testimonies, since most, like the example just given, are by persons who are not medically trained.

Due weight needs to be given this caution. Even in diagnosed cases, testifiers are often reporting in their own words what physicians have said to them. The possibility that in some cases individuals have misinterpreted, misremembered, or otherwise inaccurately reported the remarks of doctors cannot be ruled out any more than the possibility in some cases of medical misdiagnosis.

On the other hand, a distinction is needed between legitimate questions of accuracy or comprehensiveness and the fixed position taken by some that these healings could not have happened and that therefore the testimonies must be mistaken. It is at least highly implausible to assume that all or even most of the healings reported in so large a body of testimonies can be attributed to such mistakes. In the case of coronary disease referred to above, a Boston cardiologist who reviewed the testifier's affidavit for the church found "certain obscurities" in the testifier's description but "no inconsistencies...except in the behavior of the doctor and/or in the patient's paraphrasing" and "no conflicts with medical doctrine except for the miracle of healing which is not in [doctors'] purview anyhow!"[11] Whatever the ultimate explanation for "miracles" of this sort, to assume *a priori* that they are impossible is to preclude serious medical or scientific inquiry into the phenomenon of spiritual healing.

The Christian Science church has not systematically collected medical records from testifiers. Historically, as one church official has written, its "focus has been on healing in the context of *worship*,"[12] and while X-ray or other medical records have occasionally accompanied testimonies submitted to the church periodicals, the church has not required these of testifiers and has solicited them only rarely. For some testifiers, particularly those who have been through extremely difficult physical straits prior to a healing, "dredging up those memories" is itself a painful process and not something they wish to reinforce in the sharing of a significant

spiritual victory.[13] In recent years hospital regulations governing release of medical records to past patients have become tighter and the obtaining of such records more costly.

The church does require each testifier to obtain verifying letters or statements from at least three other members who either witnessed the healing that is recounted or who are able to vouch more broadly for the integrity of the testifier. Some also include attesting statements by nonmembers, e.g., family members who are not Christian Scientists and occasionally even physicians, though the latter in general are predictably chary of appearing to give endorsement to a non-medical method of healing. One Phoenix, Arizona, physician who verified a healing of a shattered leg concluded his letter with the proviso that "no authority expressed or implied is given for publication of my verification or name...."[14] Even without such restrictions, only a minority of the attestations are published — usually when they add substantive information to the testimony or when one or more of those attesting to a particular healing were directly involved in it.

METHODOLOGY

This study involved the preparation of a database recording and categorizing the medical information contained in testimonies published in the denomination's periodicals from 1969 to 1988. Not included in this total is a scattering of healings related in religious articles but not specifically included in the testimony section of each issue. Though the database is limited to the latter, other healings related in the church's periodicals are subject to the same verification requirements as the testimonies and are also often medically significant — e.g., a healing of an adopted infant diagnosed as hydrocephalic and considered unable to develop normally.[15]

The database records the medical facts from each testimony in up to 21 discrete classifications or fields. These include the specific medical name of the condition healed, if given, or the generic nature of the condition, if not; the physical symptoms described in the testimony or other facts amplifying this description; the total duration of the condition; the length of time under Christian Science care; indication of medical diagnosis, if relevant, along with any factors elaborating the credibility or extensiveness of the diagnosis, such as hospital involvement, consultation with specialists, the involvement of multiple physicians, or taking of X-rays; any specific prognosis given or remarks made by physicians in the diagnostic process, including whether the condition was life-threatening and what the normal course of medical treatment would entail; and whether the healing was medically confirmed by after-the-fact examination. The database also distinguishes healings of children by age group and the decade in which the healing took place, when either piece of information is available.

While not excluding a margin of error in the recording of this data, the database fields have been defined narrowly to minimize misinterpretation of either the testifier's language or the medical facts. Cases listed as medically diagnosed, for example, include only those where a diagnosis was specifically mentioned in or reasonably indicated by the testimony. This excludes the large number of similar cases where the wording of the testimony strongly implies that there was medical

diagnosis but does not provide sufficient information to make it clear. It also excludes cases in which healings might be partially attributable to prior medical treatment or in which the diagnoses might be considered especially tenuous (such as a diabetes case in which a patient tested positive for the disease one day and negative the next, after specific prayer in Christian Science and despite the doctor's insistence that the first test had been accurate[16]).

Similar commonsense cautions increase the integrity of the rest of the database. Hospitals, specialists or X-rays are noted only where they are mentioned explicitly — again, leaving out many other cases where the conditions healed were almost certainly diagnosed in hospitals by specialists and/or with X-rays, but where the testimony does not go into these details. Healings of substance abuse problems and self-imposed addictions (in one case a twenty-year heroin habit[17]) are not listed, but healings of specific physiological damage from addictions or substance abuse (such as cirrhosis of the liver [18]) are. A condition is listed as life-threatening only if the testimony states explicitly that a physician involved in the diagnosis said it was. Testimonies that do not mention a physician's statement to that effect are not included in this category even when the healings involve diseases normally considered life-threatening, such as leukemia.

FINDINGS

Since there is no standard format for the testimonies, relatively few provide comprehensive medical information covering all fields in the database. Nevertheless, the substantial information collectible from these sources makes clear that healing in Christian Science is by no means limited to psychosomatic conditions or to cases involving self- or otherwise "unsubstantiated" diagnoses, as has often been assumed.[19]

The vast majority (over 80%) of the 7,154 testimonies published from 1969 to 1988 include healings of bodily disorders. The high percentage of testimonies including physical healing illustrates its continuing importance among contemporary Christian Scientists, though as Stephen Gottschalk notes, their use of the term healing extends to difficulties of all kinds.[20] Single testimonies often refer to healings of both bodily illness and other problems. This particular group of testimonies includes, for example, healings of marital discords, business problems, alcoholism, effects of sexual abuse or family tragedy, suicidal depression, nervous breakdown, religious despair, immoral or destructive patterns of behavior, and incidents of protection in war.

The total number of physical healings recounted in this period is over 10,000. Of these, some 2,337 involve healings of medically diagnosed conditions. The latter figure is limited to healings related firsthand by the individual healed or, in the case of healings of children, by a parent. It does not count numerous healings of medically diagnosed conditions which are related secondhand — e.g., an Iowa woman's vivid account of her father's healing in minutes of an eye injured in an accident and diagnosed as permanently blinded [21] — unless they are accompanied by a published firsthand confirming statement. Testimonies by second-, third-, or

fourth-generation church members frequently refer to significant earlier healings experienced by parents or grandparents, but these are also excluded from the statistical totals unless otherwise documented.

Among the medically diagnosed cases, 285 made reference to specialists, 284 to X-rays, 453 to the involvement of more than one physician, 507 to the involvement of a hospital in the diagnosis. The medical contacts in these cases essentially involved diagnosis alone or else tangibly unsuccessful medical treatment, sometimes for an extended period, prior to the testifier's decision to turn to Christian Science for healing. In 623 cases healings were medically confirmed by follow-up examinations. In 222 cases ranging from extreme trauma caused by auto collisions to serious degenerative diseases, the testifiers referred specifically to terminal or life-threatening prognoses by physicians. In some of these cases the testifier's survival many years after such a prognosis corroborates the healing more fully than a follow-up examination could.

The list of diagnosed conditions healed covers an extremely broad range of injuries, disorders, and diseases: at least 27 healings of malignancy or cancer (including bone cancer, lymph cancer, skin cancer, cancer of the liver, breast, intestine, and uterus), 42 of tumor, 16 of polio, 68 of tuberculosis, 38 of pneumonia (seven of double pneumonia, two with collapsed lung), at least 88 of heart disorders, 23 of kidney disorders (two of Bright's disease), 203 of broken bones (further analysis below), 71 of childbirth complications (such as uremic poisoning, four still births), nine of meningitis, 24 of appendicitis (eight acute), 16 of scarlet fever, 16 of rheumatic fever, 11 of cataract, 12 of diabetes (one as complication of pregnancy, one juvenile case), 13 of pernicious anemia, 12 of rheumatoid or degenerative arthritis, two of gangrene, three of glaucoma, seven of hepatitis, three of leukemia, six of multiple sclerosis, seven of blindness (48 of other vision deficiencies such as astigmatism or nearsightedness), 13 of goiter, eight of curvature of the spine, 13 of epilepsy, three of crossed eyes, one of cleft palate.

Even this partial accounting belies the contention that all or most of the conditions healed in Christian Science are self-limiting and "would have gone away by themselves." But the mere listing of conditions healed in itself gives no indication of the more compelling circumstances related in many of the testimonies — the large number, for instance, in which conditions persisted under medical treatment but were quickly and decisively healed in Christian Science (as when a testifier was healed within two days of severe allergic reactions which had been lifelong and a longstanding unrelated knee injury [22]). There are also many in which damage to the affected organ was deemed irreparable (as in at least one of the healings of blindness, where the iris and pupil in both eyes had been severely injured [23]) or in which physicians themselves termed the healings miraculous (as when an elderly testifier was healed of nerve damage which had been diagnosed as incurable and rendered her immobile [24]).

In still other cases, the actual course of the healings described makes traditional explanatory labels such as natural "remission" virtually meaningless. In one Australian's healing of multiple sclerosis, the testifier turned to Christian Science after his condition had steadily degenerated over a period of two and a half years.

He was completely paralyzed, nearly blind, could not speak or feed himself, and one leg had become shorter than the other. His condition stabilized immediately under prayer in Christian Science and within several weeks began to improve gradually but steadily. He was cared for in a home for Christian Scientists needing special nursing help. In eight months he was able to walk and not long thereafter relinquished the invalid pension he had been receiving.[25]

The full list of diagnosed conditions healed includes virtually all classes of disease — infectious, congenital, immunological, neurological, etc. It includes conditions regarded as biologically caused as well as conditions considered emotionally generated. It also includes healings of medically incurable as well as medically treatable conditions. These healings do not fit what a physician writing in *The New England Journal of Medicine* called a "mechanistic and reductionistic" model of health,[26] but as a church official has written, they "constitute evidence that can and should be taken seriously by rational people.... If the evidence doesn't fit the model, the need is to reexamine the model, not arbitrarily deny the evidence!" [27] Healings of medically diagnosed conditions represent only a minority of the healings shared in the testimonies, but they provide a useful point of departure for objective study.

HEALINGS OF CHILDREN

Gratitude for healings of children is a major theme in Christian Science testimonies. Testifiers often refer to their own healings *as* children in Christian Science families as well as to healings of their children. Typically, the choice of Christian Science healing for their children is rooted in such personal experiences. In some instances — one of the meningitis cases, for example[28] — testifiers describe turning to Christian Science in desperation for their children when medical aid has been unsuccessful.

The 20 years of testimonies under study included 2,451 healings of children, 640 of which involved conditions that were medically diagnosed. Many of these testimonies do not indicate the age of the child healed, but of those that do, 801 involved small children under six, 394 youngsters between six and twelve, and 319 teenagers under eighteen. The proportion of testimonies indicating diagnosis by specialists, in a hospital, or by more than one physician is similar to that for adults.

In at least 88 cases the examining doctor pronounced a child's illness life-threatening. Many of these healings involved small children — at least three of the spinal meningitis cases (one in which a pediatrician provided a verifying statement for reference but not for publication [29]), five of pneumonia or double pneumonia, one of food poisoning, one of diphtheria, one of wet lung, one of brain fever and chorea, two of heart disorders (one of fibroelastosis), one of stomach obstruction. In another case — a recovery described as a miracle after a drowning accident involving a two-year-old — a Quaker physician provided a verifying statement for publication.[30] An older child was healed of mitral valve lesion, despite a prognosis of permanent invalidism if the child survived.[31] Two healings of ruptured appendix involved teenagers.

Other medically diagnosed conditions healed in children's cases included, in addition to numerous conditions listed earlier, defective glands, loss of eyesight from chemical burns, pleurisy, stomach tumor, bowed legs (a premature newborn also suffering from a serious case of jaundice[32]), bone disease (a boy of eight healed in five days after a medical prognosis of impairment for many months and possible permanent disability[33]), eight of foot deformities (at least two of clubbed feet), seven of hernia (including double hernia and umbilical hernia), 13 of asthma (one life-threatening case), hypogammaglobulinemia (an autoimmune deficiency), seven of hearing loss or impairment, at least five of convulsions, at least six of mastoiditis.

Perhaps the most unusual of these testimonies concern healings effected by the children themselves. Christian Scientists do not consider prayer exclusive to adults or healing beyond the spiritual capacities of children. The denomination's periodicals include occasional testimonies by children, and in religious terms the tradition emphasizes the natural responsiveness of even small children to God.[34] One California man, now a parent himself, told of a healing of collapsed lung through his own prayer as an eight-year-old. At the time he attended the Christian Science Sunday School, but his parents were not practicing Christian Scientists. His healing, which occurred at the hospital on the night before a scheduled operation, initially met with disbelief on the part of both surgeon and parents but was confirmed by before-and-after X-rays.[35]

BROKEN BONES

For several reasons, testimonies relating to the healing of broken bones provide a unique medical window both on Christian Scientists' experience and on what might be called the physiological effects of prayer. Since no medication is involved in the setting of broken bones, Christian Scientists sometimes employ a physician for this purpose — one of the few circumstances in which a Christian Science practitioner may be employed simultaneously with a physician on the same case. As a result of this interface, there is an unusually large number of cases in which healings of serious breaks or fractures have been confirmed by medical evidence. Because X-ray diagnosis of broken bones has for many decades been relatively straightforward and reliable, this study surveyed testimonies on these particular healings over an extended period of forty years from 1949 to 1988.

The testimonies published during these decades included some 599 healings of broken bones. Of these, 273 indicated definitive medical diagnosis or confirmation of the break, 245 specified X-rays. As in previous sections, the diagnosed cases do not include those in which the wording merely implied diagnosis but did not indicate it clearly. Nor do they include cases where a physician offered an unconfirmed visual diagnosis at the scene of an accident (as when, after an equestrian accident, a doctor present advised one teenager she had a probable broken hip [36]).

Among undiagnosed or self-diagnosed cases, a minority involved such "probable" or "possible" breaks. More, however, involved physical evidence that was clear and unambiguous. Many of the most striking are cases in which full healing

took place within hours or days wholly without contact with physicians. In one incident a South African teenager whose arm had been broken the previous day in a sporting match — a break confirmed by the team trainer and involving a protruding bone — felt the bone move into place within ten minutes after calling for specific help in Christian Science and had no further trouble with the arm.[37] In another a Canadian woman was walking and "carry[ing] heavy groceries" two days after breaking her ankle in a fall that left a bone sticking out "across both sides of the foot." She, too, felt the bone move into place and said it was "all [she] could do" to walk rather than "run and leap and praise God" like the lame man healed in the New Testament book of Acts.[38]

Medically diagnosed cases also include numerous similar healings, though not all include a specific chronology. Many refer to healings as "quick" or "gradual" but do not provide sufficient information to determine recovery times with assurance. Of those diagnosed cases where such information is provided, 91 involved healings which were complete in three weeks or less. In at least 11 of these cases the healing took one day or less. In 43 cases the healing took from two days to a week. In another 24 cases the healing took between one and two weeks. These figures do not include cases where the testifier spoke only of the bone being "set" within a certain number of days but did not clarify the time taken for full recovery.

Cases healed within one day included, among others, a fractured jaw, confirmed in writing by a dentist whose diagnosis was made in consultation with a physician;[39] a broken wrist, where one X-ray confirmed the break and a second X-ray several hours later showed no break;[40] three crushed vertebrae from a motorcycle accident, verified as healed the next day by X-rays taken at an orthopedic hospital (where examining physicians stated that the injury appeared to have been healing for months);[41] and two of severely shattered noses healed while the testifiers waited in a hospital emergency room between first and second X-rays.[42]

Cases healed within one week included an arm broken in several places, set through prayer within hours (again between the first and second set of X-rays) and completely healed in five days;[43] a broken bone and cartilage in the leg, where the attending physician indicated that the patient might have a permanent limp or lameness even with surgery;[44] and a broken shoulder blade which was threatening to puncture a lung, healed in three days before a scheduled operation in a military hospital.[45] One case healed in just over a week involved a teenager with a severely fractured pelvis after an automobile accident. (The medical prognosis had been for at least a two-month convalescence.)[46]

This highly abbreviated sampling does not convey the many unusual features of those cases in which full recovery was more gradual. Even in these, the testimonies routinely refer to healings accomplished far more quickly than the attending physicians expected as well as to the perfect setting of even complicated breaks through prayer. Many involve rapid healings of persons of advanced age. In many cases casts or surgical procedures were found unnecessary because of progress evident by the time a physician was consulted. In others, specific medical prognoses for permanent disability — e.g., that patients would never walk again or would never regain full use of limbs — were overcome.

At least 29 of these testimonies refer to injuries described by physicians as life-threatening. One Michigan case in this category involved broken vertebrae, broken ribs, a crushed left shoulder, a fractured skull and severe internal hemorrhaging after a nine-foot fall to a terrazzo floor. No taping or casts were used because the testifier was not expected to survive. By the sixth day after the accident she was able to walk to a chair, by the third week she attended church and resumed household duties; by the fourth she resumed all normal activities. The physician on the case acknowledged that a "higher power" was responsible for the healing and told the testifier to "stick with" Christian Science.[47] While statements such as this represent only subjective opinion even when coming from a physician, the large body of testimony on healings of broken bones, taken as a whole, provides significant further evidence of healing effects not readily attributable to the body's normal recuperative processes.

LIMITS AND CONCLUSIONS

Christian Scientists' most controversial premise is less that exceptional healings happen through prayer than that they are not exceptional — that spiritual healing can be relied on systematically with favorable results.

This study addresses that issue only indirectly. It does not provide comparative cure or mortality rates, nor does it consider cases in which healing prayer has not been effective. The evidence accumulated in the testimonies suggests that there may be no truly "incurable" conditions, but there are obviously cases that are not cured. Christian Scientists attribute these neither to divine will nor to personal guilt, but see consistent effectiveness in spiritual healing as requiring a high level of dedication and above all love. In that respect it resembles the best of medical practice. It is not possible from available information to determine whether the proportion of such cases in Christian Science is lower or higher than the proportion of such cases under medical care. The practical, logistical — and, frankly, spiritual and ethical — difficulties of conducting controlled experimental studies on Christian Scientists' practice would appear almost insurmountable.

On the other hand, the evidence that is available strongly supports the contention that healing in Christian Scientists' experience has been real, frequent, and often not explainable under ordinary medical rubrics. At the very least, it provides substantial objective grounds for taking the phenomenon of spiritual healing seriously — even, as one commentator on medical ethics has written, "those with reflexive skepticism on the subject."[48] A great deal of medical research is based on individual case data rather than controlled studies. Christian Scientists argue that these particular cases have far-reaching implications for both religion and medicine, but irrespective of any theological position, the facts themselves are significant and cannot be scientifically disregarded. Christian Scientists' consistent choice of spiritual healing is understandable only in light of these facts.

NOTES

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3. Cf. England RW. Some Aspects of Christian Science as Reflected in Letters of Testimony. *American Journal of Sociology* March 1954; LIX:448-453. Reply by Davis WB. *American Journal of Sociology* September 1954; LX:184-5.
4. Testifier's correspondence. Church files. See *The Christian Science Journal* October 1986; 104:628-629.
5. San Francisco. Harper & Row:149
6. Phinney AW. Healing and the Nature of God. *The Christian Science Journal* April 1989; 107:27.
7. Quoted in Boston R. Prescription for Controversy: The Courts and Christian Science. *Church & State* March 1989:10.
8. *Christian Science Sentinel* April 10, 1978; 80:587.
9. Peel Robert. *Spiritual Healing in a Scientific Age:* 69-73.
10. Temple University Hospital. Unit history Simpson, Teressa 10/3/68 - 10/22/68.
11. Comments of Dr. Richard A. Bloomfield July 15, 1982. Church files.
12. Correspondence. Nathan Talbot to Dr. Arthur Caplan (Center for Bioethics, University of Minnesota) August 24, 1988. Church files.
13. Testifier's correspondence. Church files.
14. "To whom it may concern" February 15, 1979. Church files. See *Christian Science Sentinel* March 17, 1980; 82:466-468.
15. Interview. What it takes to care. *Christian Science Sentinel* September 19, 1988; 90:12-16.
16. *Christian Science Sentinel* October 18, 1982; 84:1800-1802.
17. *Christian Science Sentinel* September 20, 1982; 84:1626-1628.
18. *Christian Science Sentinel* October 9,1978; 80:1678-1680.
19. Boston R. Prescription for Controversy *op cit:*10.
20. Gottschalk S. *The Emergence of Christian Science in American Religious Life.* Berkeley: University of California Press, 1973:222.
21. *Christian Science Sentinel* January 5, 1974; 76:31-32.
22. *The Christian Science Journal* June 1985; 103:395-396.

23. *The Christian Science Journal* October 1986; 104:628-629.

24. *Christian Science Sentinel* October 24, 1983; 85:1842-1844.

25. *The Christian Science Journal* March 1987; 105:48-50.

26. Ross I. The Paradox of Health. *The New England Journal of Medicine* August 11, 1988; 319:378.

27. Correspondence. Nathan Talbot to Dr Arthur Caplan *op cit.*

28. *Christian Science Sentinel* November 18, 1985; 87:1988-1990.

29. *Christian Science Sentinel* May 11, 1987; 89:29-30.

30. *Christian Science Sentinel* October 24, 1988; 90:30-32.

31. *Christian Science Sentinel* December 27, 1982; 84:2220-2221.

32. *The Christian Science Journal* April 1985; 103:264-266.

33. *Christian Science Sentinel* July 18, 1988; 90:29:41-42.

34. Peel R. The Christian Science Practitioner. *Journal of Pastoral Counseling* Spring 1969; IV:1:42.

35. *Christian Science Sentinel* September 22, 1986; 88:1773-1774.

36. *The Christian Science Journal* June 1980; 98:331.

37. *Christian Science Sentinel* October 29, 1966; 68:1919-1920.

38. *The Christian Science Journal* March 1972; 90:162-163.

39. *The Christian Science Journal* September 1965; 83:613-614.

40. *The Christian Science Journal* September 1981; 99:543-544.

41. *Christian Science Sentinel* May 21, 1984; 86:895-897.

42. *The Christian Science Journal* April 1964; 82:223-224. *Christian Science Sentinel* May 25, 1987; 89:21:33-34.

43. *Christian Science Sentinel* June 19, 1976; 78:1096-1097.

44. *Christian Science Sentinel* September 18, 1976; 78:1635-1636.

45. *Christian Science Sentinel* April 24, 1965; 67:729-731.

46. *Christian Science Sentinel* June 26, 1965; 67:1124-1125.

47. *Christian Science Sentinel* August 7, 1965; 67:1392-1394.

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