
Saying Your Prayers, Constructing Your Religions: Medical Studies of Intercessory Prayer*

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On March 31, 2006, the *New York Times* published a front-page article under the headline, “Long-Awaited Medical Study Questions the Power of Prayer.” The article reported the results of a multiyear, multi-medical-center study designed to determine whether prayers offered by strangers influenced the recovery of people undergoing heart surgery—they did not.¹ Published in the prominent *American Heart Journal*, this was the latest in a line of medical research studies published over the past forty years that asked this question. Lead author Dr. Herbert Benson and his colleagues were surprised by these results in light of earlier studies that showed such prayers to have an effect. While briefly acknowledging that intercessory prayer may not be effective in reducing complications in cardiac patients, Benson and colleagues pointed to aspects of their study design that might explain these findings. In addition to concerns about the duration of the study, these factors included the ways that the intercessors, members of three Christian prayer groups, were instructed to offer prayers.

* This research was supported by the Robert Wood Johnson Foundation Scholars in Health Policy Research Program at Harvard University. Angelica Colon and Daniel Garcia provided research assistance. I am grateful to Betsy Armstrong, Jonathan Baer, Debbie Beecher, Courtney Bender, John Evans, Josh Guetzkow, Nick Guyatt, Lance Laird, Michael Lindsay, Andy Rotman, Sara Shostak, Laura Stark, Stefan Timmermans, Tisa Wenger, Christopher Wildeman, Fred Wherry, and participants in the 2003–5 Younger Scholars in American Religion Program at Indiana University Purdue University Indianapolis for feedback on earlier drafts. Earlier versions of this article were presented at the Princeton University Center for the Study of Religion, the American Sociological Association, and the Eastern Sociological Society.

¹ For the study, see Herbert Benson, Jeffrey A. Dusek, Jane B. Sherwood, Peter Lam, Charles F. Bethea, William Carpenter, Sidney Levitsky, Peter C. Hill, Donald W. Clem Jr., Manoj K. Jain, David Drumel, Stephen L. Kopecky, Paul S. Mueller, Dean Marek, Sue Rollins, and Patricia L. Hibberd, “Study of the Therapeutic Effects of Intercessory Prayer (STEP) in Cardiac Bypass Patients: A Multicenter Randomized Trial of Uncertainty and Certainty of Receiving Intercessory Prayer,” *American Heart Journal* 151, no. 4 (2006): 934–42.

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0022-4189/2009/8903-0003\$10.00

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While the assumptions about religion and prayer made by scholars of religion are vastly different from those made by Dr. Benson and his colleagues, all scholars engage in social processes through which they exercise “epistemic authority” or jurisdiction around the boundaries of their subjects.² In introductory courses and scholarly publications, scholars of religion ask how religion is defined, understood, and lived by laypeople and religious professionals across the social spectrum. Scholars of religion have paid particular attention to these concepts by examining how the boundaries around varying concepts of religion shape how religions are understood and experienced.³ While some scholars view religions as distinct traditions with clear histories, teachings, and practices, others focus on how religions are put together by different individuals and groups and what effects these differing understandings have on how religion is understood and theorized at different levels of analysis. Religions are shaped, reshaped, and named in hybrid ways, they argue, through contact and hybridization at all levels of social organization.⁴

In the American context, medicine and medical scientists have influenced how religion is conceptualized and experienced by a wide range of people at multiple historical moments.⁵ This has taken place, in part, as aspects of life such as those concerned with birth and death have moved back and forth between religious and medical spheres.⁶ While there has been an iterative informal process of (re)construction between biomedical science and some religious practices and traditions,

² See Thomas Gieryn, *Cultural Boundaries of Science* (Chicago: University of Chicago Press, 1999); Andrew Abbot, *The System of Professions* (Chicago: University of Chicago Press, 1988).

³ See, e.g., Robert Orsi, *The Madonna of 115th Street* (New Haven, CT: Yale University Press, 1985), and “Is the Study of Lived Religion Irrelevant to the World We Live In?” *Journal for the Scientific Study of Religion* 42 (2003): 169–74; Wade Clark Roof, *A Generation of Seekers* (New York: Harper San Francisco, 1993); Robert Wuthnow, *The Restructuring of American Religion* (Princeton, NJ: Princeton University Press, 1988).

⁴ See Meredith McGuire and Otto Maduro, “Introduction,” *Social Compass* 52 (2005): 411–15; Pamela Klassen, “Ritual Appropriations and Appropriate Ritual: Christian Healing and Adaptations of Asian Religions,” *History and Anthropology* 16 (2005): 377–91; David Hall, *Lived Religion in America* (Princeton, NJ: Princeton University Press, 1997).

⁵ For example, Amanda Porterfield, *Healing in the History of Christianity* (New York: Oxford University Press, 2005); Linda L. Barnes and Susan S. Sered, eds., *Religion and Healing in America* (New York: Oxford University Press, 2005); Edward Shorter, *From Paralysis to Fatigue* (New York: Free Press, 1992); Tom Lutz, *American Nervousness* (Ithaca, NY: Cornell University Press, 1991).

⁶ See Pamela E. Klassen, *Blessed Events* (Princeton, NJ: Princeton University Press, 2001); Sharon R. Kaufman, *And a Time to Die* (New York: Scribner, 2005); Sharon R. Kaufman and Lynn M. Morgan, “The Anthropology of the Beginnings and Ends of Life,” *Annual Review of Anthropology* 34 (2005): 317–41; Richard W. Wertz and Dorothy Wertz, *Lying-In: A History of Childbirth in America* (New Haven, CT: Yale University Press, 1989).

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there are clearer formal distinctions between other religious practitioners and biomedical norms.⁷

Historically and in recent years, medical scientists have contributed to evolving public understandings of religions, or aspects of them such as prayer and meditation, in part through their attempts to study them.⁸ Recent examples are evident in medical studies of yoga and herbs used in various religious rituals and studies of Buddhist meditators and monks based on magnetic resonance imaging (MRIs) of their brain activities, which are cataloged in PubMed, the main biomedical search engine. Various assumptions about religion, or the aspect of religion being studied, such as prayer or meditation, underlie and shape these investigations, which are simultaneously created by and reflect investigators' own religious and medical/scientific contexts and the broader American cultural climate in which they take place. While the results of these studies are not likely to influence how particular religious traditions are practiced, such attempts to "medicalize" traditional religious practices likely influence how practices such as prayer, meditation, and others are talked about and conceived in the public sphere.⁹

This article focuses on one set of research studies conducted by medical researchers that investigate whether one such practice—intercessory prayer or the prayers of strangers at a distance—influences the health of the people who are the subjects of prayer. I show how researchers' shifting assumptions about prayer and the practical requirements of clinical research trials interfaced over the forty years these studies have been conducted to create particular forms of prayer centered around a nonsectarian, omniscient higher power. I show how conceptions of prayer in these studies move through three distinct phases, from single Protestant influenced views in the early studies, to expanded views, to multiple forms of prayer by 2000, still largely Protestant based in some studies and centered on prayers mixed together from a range of religious traditions in others. These phases reflect shifting medical scientific norms about clinical trials, I argue, as well

⁷ For instance, Margery Fox, "Conflict to Coexistence: Christian Science and Medicine," *Medical Anthropology* 8 (1984): 292–301; David C. Lindberg and Ronald L. Numbers, *God and Nature* (Berkeley: University of California Press, 1986); David C. Lindberg and Ronald L. Numbers, eds., *When Science and Christianity Meet* (Chicago: University of Chicago Press, 2003).

⁸ See Robert Bruce Mullin, *Miracles and the Modern Religious Imagination* (New Haven, CT: Yale University Press, 1996).

⁹ See Peter Conrad, "Medicalization and Social Control," *Annual Review of Sociology* 18 (1992): 209–32; Peter Conrad and Joseph W. Schneider, *Deviance and Medicalization* (Philadelphia: Temple University Press, 1992); Simon Williams and Michael Calnan, "The 'Limits' of Medicalization? Modern Medicine and the Lay Populace in 'Late' Modernity," *Social Science and Medicine* 42 (1996): 1609–20.

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as evolving understandings of American religious pluralism in the decades in which they were produced.

Through this case study, I make two broader scholarly contributions to the study of religion. First I contribute to scholarly thinking about the construction of religions an example of how intercessory prayer as a category is conceptualized by medical scientists and how those constructions change over time. In doing so, I apply “lived religious” approaches to the study of religion to venues outside the traditionally religious, recognizing the multiple secular realms in which religion is constructed, the societal factors that shape these constructions, shifts in those constructions over time, and the implications of the constructions. I also illustrate an innovative methodological approach, using published articles in the medical literature as sources or data for understanding how medical scientists conceptualize prayer.¹⁰

By bringing the epistemological assumptions intercessory prayer researchers make about prayer into stark relief, I further illustrate Jonathan Z. Smith’s imperative that the constructed nature of the category of religion and practices traditionally connected to it, such as prayer, be recognized.¹¹ While many scholars of religion recoil when they read about how researchers conducting intercessory prayer studies tried to measure prayer, that recoil presents an opportunity to compare this case to their own research and teaching, reconsidering their methodological and theoretical assumptions and the potential blind spots in their own approaches. Social scientists concerned about reflexivity or being clear about how one’s own background, training, and assumptions shape research projects encourage scholars to write about them in their studies.¹² While the personal and institutional factors that shape research and teaching in religious studies are clearly different from those that influence intercessory prayer researchers, they may similarly shape the conceptions of prayer and religion we do (and do not) imagine possible and, as such, require continued attention in our conversation, teaching, and research.¹³

¹⁰ See Hall, *Lived Religion in America*.

¹¹ See Jonathan Z. Smith, *Relating Religion: Essays in the Study of Religion* (Chicago: University of Chicago Press, 2004).

¹² See Norman K. Denzin and Yvonna S. Lincoln, *Handbook of Qualitative Research* (Thousand Oaks, CA: Sage, 2000).

¹³ For an example outside of religious studies, see Emily Martin, “The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles,” *Signs* 16 (1991): 485–501. In teaching, this article might help instructors and students talk about the assumptions different people (i.e., scholars, politicians, people who post on Internet prayer chains, etc.) make about prayer by comparing their assumptions and conceptions to those made by the researchers in this article.

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INTERCESSORY PRAYER STUDIES: EVOLVING CONSTRUCTIONS OF PRAYER

Prayer has a long history in the care for and treatment of the sick.¹⁴ Twentieth-century medical researchers were not the first to investigate whether the prayers of one group of people might affect the health of others. Calling the efficacy of prayer a “perfectly appropriate and legitimate subject of scientific inquiry” that is universally ignored by the scientific world, nineteenth-century English scientist Francis Galton focused on sovereigns, a group he assumed were prayed for more than others, to determine whether prayers were answered.¹⁵ He concluded that they were not but that prayer might be a comfort to people regardless.¹⁶ Other English scientists, including John Tyndall, also called for studies into the effectiveness of prayer. In 1872 Tyndall suggested an experiment in which a hospital would be made the focus of national prayer for one day and mortality rates compared before and after the day of prayer. The experiment was never conducted, but the “prayer gauge” debate it provoked illustrated deep tensions around the boundaries of religion and science in Victorian England and serves as a precursor to the intercessory prayer studies described here.¹⁷

Medical studies of intercessory prayer or prayer by one group of people at a distance on behalf of others they do not know were first published in the medical literature in 1965. Since then, they have been conducted by about seventy-five researchers, largely physicians and people with PhDs, working in small research teams. Researchers have published these articles in journals of complementary and alternative medicine as well as in mainstream medical journals such as *American Heart Journal*, *Annals of Internal Medicine*, *Journal of Reproductive Medicine*, *Mayo Clinic Proceedings*, and *Southern Medical Journal*. These physicians and researchers are employed by hospitals and medical schools, including those at Columbia University, Duke University, Harvard University, University of Missouri, University of New Mexico, and others.

¹⁴ See Guenter B. Risse, *Mending Bodies, Saving Souls* (New York: Oxford University Press, 1999); Charles E. Rosenberg, *The Care of Strangers* (New York: Basic, 1987).

¹⁵ See Francis Galton, “Statistical Inquiries into the Efficacy of Prayer,” *Fortnightly Review* 12 (1872): 125–35, 125.

¹⁶ *Ibid.*

¹⁷ See Gieryn, *Cultural Boundaries of Science*; Robert Bruce Mullin, “Science, Miracles, and the Prayer Gauge Debate,” in Lindberg and Numbers, *When Science and Christianity Meet*, 203–24. For additional history of the “prayer gauge” debate, see Keith S. Thomson, “The Revival of Experiments on Prayer,” *American Scientist* 84 (1996): 532–35; Mark A. Clarfield, “An Old Prayer for Modern Medicine,” *Canadian Medical Association Journal* 167 (2002): 1365–67; Thomas F. Gieryn, “Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists,” *American Sociological Review* 48 (1983): 781–95.

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These studies have been supported financially by personal research budgets, university sources, and grants from the National Institutes of Health, the John Templeton Foundation, the Institute for Noetic Sciences, and other private foundations. In addition to specific studies, the *Cochrane Review*, or “gold standard” of medical research, reviewed all of the intercessory prayer studies in the medical literature, concluding in 2004 that “there are no grounds to change current [clinical] practices” but that “the evidence presented so far is interesting enough to justify further study.”¹⁸ An overview of all of the studies published between 1965 and 2006 is presented in table 1. A detailed discussion of how I located and analyzed these studies is included as an appendix.

Constructing a Single Protestant Frame: Early Studies and Study Requirements

The first three clinical trials of intercessory prayer were conducted between 1965 and 1990 and were based on exclusively Christian, largely Protestant, intercessors and forms of prayer. This Christian/Protestant-centered approach reflected the religious backgrounds of the researchers, as they indicate in the studies, limited attention to non-Christian religions in the medical literature more broadly, and continued historical affinities between Protestantism and science in American history. It also reflected the growing importance but still relative newness of the clinical trial as the central tool in medical research during the period.

The first study of intercessory prayer in the twentieth century was conducted by C. R. B. Joyce, a reader in psychopharmacology at London Hospital Medical College, and colleague R. M. C. Welldon.¹⁹ It was published in the *Journal of Chronic Disease* in 1965 under the title, “The Objective Efficacy of Prayer: A Double-Blind Clinical Trial.” Designed to determine whether intercessory prayer would improve the health conditions of patients suffering from chronic stationary or progressively deteriorating psychological or rheumatic diseases, the study relied on the prayers of nineteen Christian intercessors who belonged to one of six prayer groups affiliated with the Quakers or the Guild of Health, an interdenominational body concerned with Christian healing. All of the intercessors lived some distance from the London hos-

¹⁸ See L. Roberts, I. Ahmed, and S. Hall, “Intercessory Prayer for the Alleviation of Ill Health (Review),” *Cochrane Database of Systematic Reviews* (online database) 4 (2004).

¹⁹ As a research team they were a “self described skeptic and believer” (C. R. B. Joyce and R. M. C. Welldon, “The Objective Efficacy of Prayer: A Double-Blind Clinical Trial,” *Journal of Chronic Diseases* 18 [1965]: 370–71, 375).

TABLE 1

OVERVIEW OF STUDIES

Last Name of First Author	Year of Publication	Who Is Prayed For?	How Is Prayer Offered?	Effect of Prayer according to Authors
Joyce	1965	48 adults with chronic stationary or progressively deteriorating psychological or rheumatic disease at 2 outpatient clinics	By 6 groups (5 Guild of Health, 1 Friends' Spiritual Healing Fellowship), 19 people total. Prayers based on "method of silent meditation . . . practiced for centuries by the Church" (371).	Negative
Collipp	1969	18 children with leukemia	By friends of the author who "enlisted 10 families in their Protestant church to pray daily" (201) for the children.	Positive
Byrd	1988	393 adults admitted to the cardiac care unit at San Francisco General Hospital	By "born again" Christians according to John 3:3 who had an active Christian life. Included members of Protestant and Catholic churches. Intercessors prayed daily for "a rapid recovery and for prevention of complications and death" (827).	Positive
O'Laoire	1997	406 healthy adult volunteers	By 90 "agents" recruited through area newspapers and churches. Not known to be "healers" in any sense.	Negative
Walker	1997	40 adults admitted to a public substance abuse treatment facility for treatment of alcohol problems	By volunteers from the community who reported more than 5 years of regular intercessory prayer and a belief that their prayers were answered. Intercessors were Protestant, Catholic, and Jewish. Instructed to offer nondirected prayer (general positive intentions rather than specific requests).	Negative
Harris	1999	990 adults admitted to the cardiac care unit at the Mid American Heart Institute	By 75 intercessors recruited from the community who represent a variety of Christian traditions. All prayed daily and attended church weekly or more. Intercessors prayed for a "speedy recovery with no complications" (2274).	Positive
Matthews	2000	40 adults with rheumatoid arthritis at a private practice	By lay volunteer prayer ministers from Christian Healing Ministries in Jacksonville, FL. Ministers offered prayers "for the health of the patient" (1180-81).	Negative

TABLE 1 (Continued)

Last Name of First Author	Year of Publication	Who Is Prayed For?	How Is Prayer Offered?	Effect of Prayer according to Authors
Cha	2001	219 women treated for in vitro fertilization (IVF-ET) at Cha Hospital in South Korea	By Christians in the United States, Canada, and Australia who offered a combination of directed and nondirected prayer. Prayers offered in tiers with some people praying for others who were praying instead of for patients.	Positive—Study withdrawn after publication
Matthews	2001	95 adult hemodialysis patients with end stage renal disease being treated at an outpatient clinic in Miami	By 6 intercessors (middle-aged Catholic women in Connecticut), each of whom prayed individually. Intercessors also prayed together as a group once weekly during the study. Prayers focused on emotional and physical healing.	Negative
Krucoff	2001	150 adults undergoing percutaneous coronary intervention (PCI) for unstable coronary syndromes	By representatives of Unity School of Christianity, Nalanda Buddhist Monastery, Kopan Buddhist Monastery, Carmelite Monastery, the Virtual Jerusalem Web page, Abundant Life Christian Center, Baptist congregations, Moravian congregations. Prayers of different types, durations, and frequencies offered by each group.	Feasibility study—NA
Aviles	2001	779 adults cared for in a coronary care unit	By 212 self-proclaimed Christians recruited from local organizations organized into prayer groups.	Negative
Leibovici	2001	3,393 adults whose bloodstream infection was detected at Rabin Medical Center between 1990 and 1996	By someone who said a “remote retroactive intercessory prayer” for the “well being and full recovery of the intervention group” (1450).	Positive (intended as a joke)
Dusek	2002	1,802 adults at 6 U.S. hospitals undergoing nonemergency coronary artery bypass graft (CABG)	By 3 Christian groups (St. Paul’s Monastery, Silent Unity, and Community of Teresian Carmelites). Included the intention, “for a successful surgery with a quick healthy recovery and no complications” (581).	Feasibility study—NA
Palmer	2004	86 community dwelling adults	By 8 volunteers from a local church’s prayer chain and 4 retired women living in a Christian retirement home. Prayers were “directed toward a life concern or problem discussed by the participant at baseline” (438).	Mixed
Seskevich	2004	150 adults undergoing PCI for unstable coronary syndromes	By groups described in Krucoff et al., “Integrative Noetic Therapies.”	Negative

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TABLE 1 (*Continued*)

Last Name of First Author	Year of Publication	Who Is Prayed For?	How Is Prayer Offered?	Effect of Prayer according to Authors
Mathai	2004	36 children attending a child and adolescent mental health service	By 6 individuals selected by the primary investigator in Melbourne, Australia.	Negative
Krucoff	2005	748 adults undergoing PCI for unstable coronary syndromes in 9 U.S. centers	By groups described in Krucoff et al., "Integrative Noetic Therapies." Shifted to tiered prayer strategy and added 12 additional prayer groups in the final 2 years.	Negative
Benson	2006	1,802 adults at 6 U.S. hospitals undergoing nonemergency CABG	By 3 Christian groups as described in Dusek et al., "Study of the Therapeutic Effects."	Negative

NOTE.—For full citations of the studies, see the appendix.

pital where the patients were treated as outpatients, and they never met the patients. The patients were not aware that they were involved in the study.

Intercessors were given the first name and last initial of a few patients and a short summary of their backgrounds and health conditions. Each patient who was prayed for received prayers by an intercessor for about five minutes per day over a six-month period. The prayers themselves were not offered in words or petitions. They were silent, as the authors explained without outlining their theological or historical reasoning, "based upon a method of silent meditation which has been practiced for centuries in the Church."²⁰ After preparing and concentrating the mind silently, the study authors explained, perhaps reflecting liberal Protestant theology of the day, the intercessor "brings the mental image of the particular patient and repeats his name without dwelling on the disease or making any kind of verbal petition, but thinking of the patient in the context of the love and wholeness of God" which conceives of God as the "very ground of one's being" and involves "the deeper levels of consciousness."²¹ In the final analysis, these intercessory prayers were found to have no effect on the health of those who were the subjects of prayer. Despite this negative finding, the authors went on to

²⁰ See *ibid.*

²¹ *Ibid.*, 367–77. The framing and language of the prayers offered here point to the likely importance of postwar existential Protestant theology as evident in the works of Kierkegaard, Macquarrie, Tillich, and others. No such theological information is included in the published article, however.

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systematically describe parts of their study that suggested that prayer does heal and to suggest ways to change or improve the study design that might lead to that conclusion.²²

A similar study, designed by Dr. Platon J. Collipp, chairman of the Department of Pediatrics at Meadowbrook Hospital in New York, was conducted a few years later to investigate whether intercessory prayer influenced the health and survival of children with leukemia. It was published in *Medical Times* in 1969, and in it the author concluded, “our data does support the concept that prayers for the sick are efficacious.”²³ Prayers in this study were offered daily by friends of Dr. Collipp’s in Washington who organized a prayer group of ten families through their Protestant church. Dr. Collipp did not describe the prayers in detail but concluded the article with references to biblical passages that supported the healing power of prayer and with a parable that, in his words, “point[ed] out that the greater the number of prayers, the more likely they are to be answered.”²⁴

The ways prayer was constructed in both of these studies reflected the researchers’ own backgrounds and the largely Protestant British and American religious and medical contexts at the time. Protestants were the demographic majority in both England and the United States and, while the religious composition of physicians had begun to diversify in the United States and Britain, the majority of physicians likely remained Protestant.²⁵ Protestants’ ongoing belief that science would confirm the existence of God and complement scriptural revelation also lay beneath these early investigations, as did the growing importance of the clinical trial as a research tool in the medical sciences.²⁶

In addition to the Christian backgrounds of the intercessors, the prayers offered in these studies had underlying Protestant forms that set a basis for future studies. In both studies prayers were offered daily, likely silently, by individuals or families rather than non-family members coming together in groups. Possible differences between the religious backgrounds of the patients and the intercessors were not mentioned, perhaps suggesting liberal Protestant assumptions of

²² Ibid.

²³ See Platon J. Collipp, “The Efficacy of Prayer: A Triple-Blind Study,” *Medical Times* 97 (1969): 202.

²⁴ Ibid., 203.

²⁵ See Jonathan Imber, “Religious Sources for Debates in Bioethics,” in *Society and Medicine*, ed. Carla M. Messikomer, Judith P. Swazey, and Allen Glicksman (New Brunswick, NJ: Transaction Publishers, 2003), 211–26; and Robert Wuthnow, *After Heaven* (Berkeley: University of California Press, 1998).

²⁶ See, e.g., Porterfield, *Healing in the History of Christianity*; William R. Hutchinson, *The Modernist Impulse in American Protestantism* (Durham, NC: Duke University Press, 1992); Stefan Timmermans, *The Gold Standard* (Philadelphia: Temple University Press, 2003).

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a nonsectarian God to whom such differences would not be relevant. Prayers were offered to God rather than to an intermediary such as Mary or one of the saints in the Catholic tradition or a bodhisattva in the Buddhist tradition.²⁷ The individuals doing the praying knew little more about the subjects of their prayer than their first names and last initials, information that presupposes an omniscient higher power. While prayer in some religious traditions requires an image of the subject of prayer or objects such as the person's clothing or hair, such tangible representations were not a part of the prayers offered in these contexts. The intercessors were also laypeople rather than clergy or other religious professionals, suggesting a higher power to whom such distinctions might not be particularly important. The outcomes measured in each study, improved health, also assume a higher power with the potential and/or will to improve people's health conditions rather than to help them to accept their health situation or even prepare for their death.

Attempts to follow the guidelines of double-blind clinical trials at the time were also evident in these studies, as patients were divided into two groups, one to be prayed for and the second not to be, to act as a control. The intercessors were asked to offer their prayers in particular ways, to maintain consistency in the prayers offered to all the patients. Similarly, it was important that none of the intercessors knew any of the patients so that personal relationships did not influence the prayers, potentially biasing the results. There were no formal responses to these studies in the medical journals at the time they were published.

Challenges to intercessory prayer studies and the forms of prayer imagined in them first took shape in the medical literature following the third clinical trial, "Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population," published by Robert C. Byrd in the *Southern Medical Journal* in 1988. Dr. Byrd, a self-identified Christian physician, was inspired to conduct this research in the early 1980s after a conversation with a colleague who wished there was more he could do as a physician for a patient suffering from cancer. Byrd suggested prayer and when his colleague responded saying, "I meant Dr. Byrd . . . something *scientific*," Byrd had an idea.²⁸ Believing that medical scientific methods could be applied to prayer just as to a new drug or therapy, Byrd and his assistants spent the next several months organizing a double-blind study of intercessory prayer in which 393

²⁷ See Robert Orsi, *Thank You, St. Jude* (New Haven, CT: Yale University Press, 1996).

²⁸ See Randolph C. Byrd and John Sherrill, "The Therapeutic Effects of Intercessory Prayer," *Journal of Christian Nursing* 12 (1995): 21–23.

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people admitted to the cardiac care unit at San Francisco General Hospital knowingly agreed to participate.

This study relied on the prayers of intercessors who were “born-again” Christians “according to the Gospel of John 3:3,” as stipulated by Byrd, and were active in local Protestant or Catholic churches. The prayers that took place in this study were similar to prayers in earlier studies, although they reflected an evangelical shift evident in the presence of born-again intercessors. These prayers also reflected a move toward greater scientific standardization, as each intercessor was given a prayer script to guide prayers. Each intercessor was given each assigned patient’s first name, diagnosis, and general condition as well as relevant updates and was asked to pray for his or her “rapid recovery” and for “prevention of complications and death” in addition to “other areas of prayer they believed beneficial to the patient.”²⁹ Allowing the intercessor space in which to add or improvise prayers in addition to those provided in the script continued in subsequent studies. This frame further suggested a Protestant and evangelically informed notion of prayer rooted in the values of spontaneity, individuality, and a conception of prayer as private and intimate in a way that made mandating narrowly defined prayers uncomfortable and/or ethically inappropriate for the researchers. After analyzing the data gathered in this study, Byrd concluded that “intercessory prayer to the Judeo-Christian God has a beneficial therapeutic effect in patients admitted to the CCU [cardiac care unit].”³⁰ Patients who were prayed for by born-again Christians they had never met, he argued, had better health outcomes than those who were not the subjects of prayer.³¹

Byrd’s study included many more patients than previous studies and conformed more closely in the number of people included and the format, specifically the details of how patients were randomized to the prayer or control groups, to evolving norms for clinical trials in medical research.³² While creating spaces for improvisation, the prayer script given to the intercessors simultaneously reflected broader medical scientific attempts at greater standardization of all aspects of the research process. While the higher power is named as “the Judeo-Christian God” in this study, the image of God is nonsectarian and omniscient, much as in previous studies. The inclusion of Catholic intercessors likely reflected a combination of the increased mainstreaming of

²⁹ See Randolph C. Byrd, “Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population,” *Southern Medical Journal* 81 (1988): 826–29.

³⁰ *Ibid.*, 826.

³¹ *Ibid.*

³² See Timmermans, *The Gold Standard*.

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Catholics into the medical professions between the late 1960s and late 1980s, variation in religious demographics in the geographic regions in which these studies took place, and/or shifting relations between American evangelicals and Catholics in the 1980s.³³ Perhaps because of its larger sample size, closer adherence to the norms of clinical trials, and/or more medically mainstream location of physical research (San Francisco General Hospital) and journal publication (*Southern Medical Journal*), this study sparked controversy in the medical literature. The subsequent debate on the pages of the *Southern Medical Journal* focused primarily on whether this study was “science” and should be published in a medical journal.³⁴

³³ Christopher J. Kauffman, *Ministry and Meaning* (New York: Crossroads, 1995).

³⁴ Byrd himself pointed to the scientific problems and limitations of the study in the article while holding to his belief that prayer can be studied following this approach. For example, in a standard clinical trial one group receives the new treatment and the second does not. That was impossible in a “pure” sense here because there was no way to assure that those not in the prayer group did not receive prayers from relatives or friends in addition to the intercessors. “How God acted in this situation is unknown,” Byrd explained while arguing that it would be unethical to completely restrict prayers to people in a study (Byrd, “Positive Therapeutic Effects,” 829). Also, Byrd was not able to assess whether the patients prayed themselves and how their own personal religious beliefs may have influenced their health outcomes. He discussed how this independent variable could have had an effect and would need to be measured in future studies. Perhaps anticipating the ferment Byrd’s article would cause in the medical community, the *Southern Medical Journal* published it alongside a supportive commentary by Dr. William Wilson, a professor emeritus of psychiatry at Duke Medical Center, under the heading “Religion and Healing.” Rather than trying to downplay or doubt the results, Wilson highlighted the limits of medical science rather than of this particular study, writing that the “problem is the challenge of the theory of quantum mechanics to our cosmology. It has changed our mechanistic view of the universe” (William P. Wilson, “Religion and Healing,” *Southern Medical Journal* 81, no. 7 [1988]: 819). Rather than doubting Byrd’s data, in other words, Wilson doubted the epistemologies traditionally used to understand them. While Wilson could have placed Byrd’s topic and question firmly outside the bounds of medical science, he did just the opposite, calling the questions Byrd investigates “valid ones for scientific inquiry” and calling on science to expand its vision so as to ask and answer them. “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 [i.e., an expansion of medical science] but also more research on the role of religion in healing,” he wrote (820). Critics of Byrd’s study (and this entire issue of the *Southern Medical Journal*) were quick to counter Wilson’s effort to expand the boundaries of medical science, articulating the boundaries of medicine in ways that placed the ideas of both Wilson and Byrd firmly outside. “Medicine’s greatest accomplishments since the Age of Enlightenment,” Steven Kreisman, an emergency room physician in North Carolina, wrote in a letter to the editor, “were made possible by the fundamental characteristics of that age: a respect for reason” (*Southern Medical Journal* 81, no. 12 [1988]: 1598). Quoting Dr. Leonard Peikoff in *The Ominous Parallels* (Briarcliff Manor, NY, 1982), Kreisman argued that medicine since the eighteenth century has abided by an epistemology based on scientific laws which “permit no miracles and which are intelligible without reference to the supernatural.” Refusing even to acknowledge Byrd’s claims about the medical scientific basis of his work, Kreisman argued that these articles do a “disservice to the science of medicine . . . by trying to undermine reason and by giving credence to faith as a valid epistemology.” He called on the *Southern Medical Journal*

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Expanding the Protestant Frame: Shifting Conceptions of Prayer and Requirements of Clinical Trials in the 1990s

Conceptions of prayer in intercessory prayer studies were expanded and challenged in the 1990s through the inclusion of non-Christian intercessors and direct questions from medical professionals raised on the pages of the medical journals in which the studies were published. These shifts reflect increased attention to American religious diversity, the growth of research about a wider range of religious traditions in the medical literature, and attempts by medical researchers and institutions to both standardize clinical trials and expand the range of people included in them during the 1990s.³⁵

The first two studies in the 1990s, published by Sean O'Laoire and Robert Walker and colleagues, in *Alternative Therapies in Health and Medicine*, included intercessors from a wider range of religious backgrounds than in previous studies, who received training and guidance in how to pray. In examining the influence of intercessory prayer on people in a substance abuse program in New Mexico, Walker recruited volunteers who had more than five years of regular intercessory prayer experience and who believed that their prayers had been answered on at least one occasion. He included Jews among the intercessors for the first time and, perhaps as a result, required all of the intercessors to agree not to pray for the specific religious conversion of any of the patients for whom they were praying.³⁶ O'Laoire also included a "plea to respect the different religious and cultural beliefs" of the subjects being prayed for in the materials intercessors received about the study.³⁷ These attempts to recognize and respect religious differences among the patients while simultaneously including intercessors from a range of religious backgrounds mirror broader tensions in the United States in the 1990s (and beyond) about America as a religious (and

to no longer permit articles "of this kind," arguing, in the name of scientific progress, that they are an "attempt to return medicine to the Dark Ages, and to reduce physicians to the same status as witch doctors and faith healers." Asserting his authority as a gatekeeper and his refusal to categorically limit or deny any authors access to the journal, the journal editor responded by explaining that the papers in question were medical science that had been subjected to the usual peer review process "and judged to report properly designed and executed scientific investigation, with a recommendation for publication" ("Editor's Note," *Southern Medical Journal* 81, no. 12 [1988]: 1598).

³⁵ See Steven Epstein, *Inclusion* (Chicago: University of Chicago Press, 2007).

³⁶ See Scott Walker, J. Scott Tonigan, William R. Miller, Stephen Comer, and Linda Kahlich, "Intercessory Prayer in the Treatment of Alcohol Abuse and Dependence: A Pilot Investigation," *Alternative Therapies in Health and Medicine* 3 (1997): 79–86.

³⁷ See Sean O'Laoire, "An Experimental Study of the Effects of Distant, Intercessory Prayer on Self-Esteem, Anxiety, and Depression," *Alternative Therapies in Health and Medicine* 3 (1997): 38–53.

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ethnic) melting pot versus a country in which people of all religious backgrounds are welcome and respected on their own terms.³⁸

In addition to including a wider range of intercessors, O'Laoire and Walker and colleagues were influenced by increasingly narrow norms for clinical trials in this decade that attempted to standardize the treatments being studied. Each study attempted to increase the systematization of intercessory prayer so that it would more closely approximate contemporary clinical trials. For example, Walker and colleagues required intercessors to report the time and content of their daily prayers on self-report forms throughout the study. O'Laoire conducted one-hour training sessions for intercessors that covered a range of topics, including how to pray in a directed and nondirected way and how to complete and submit "prayer logs" to researchers, concerns not thought about in earlier studies. After conducting these studies, both Walker and O'Laoire concluded that there were no measurable effects of intercessory prayer on the subjects of prayer.

The third intercessory prayer study in the 1990s, an article by William H. Harris and colleagues titled "A Randomized, Controlled Trial of the Effects of Remote, Intercessory Prayer on Outcomes in Patients Admitted to the Coronary Care Unit," was published in 1999 in the prominent *Archives of Internal Medicine*. It prompted questions about researchers' conceptions and assumptions about prayer in the dialogue that took place around it through letters to the editor of *Archives*. Designed to replicate Byrd's 1988 study, this study focused on 990 adults consecutively admitted to the coronary care unit at the Mid America Heart Institute in Kansas City, Missouri. The patients were not told they were participating in the study, and only the secretary of the chaplaincy department knew which patients were assigned to the prayer group and which to the nonprayer or control group.

As in all the studies in which the demographics of intercessors were reported, the intercessors in this study were primarily women (87 percent of intercessors in this study). They represented a range of Christian traditions and were weekly church attendees with daily prayer habits before the study began. Each believed in God, believed that "He [God] is personal and concerned with individual lives," and believed that "He [God] is responsive to prayers for healing made on behalf of the sick." The intercessors were given only the first name of the patient and were instructed to pray for a "speedy recovery without complications" and

³⁸ See Robert Wuthnow, *America and the Challenges of Religious Diversity* (Princeton, NJ: Princeton University Press, 2005).

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anything else they deemed appropriate.³⁹ They prayed for their patients for twenty-eight days following the patient's admission to the cardiac care unit to ensure that each patient was prayed for throughout his or her hospitalization.

Harris and colleagues found that prayer did not influence how long patients stayed in the coronary care unit or the hospital but did influence a summary measure of health, which led them to argue that patients who were prayed for did 10 percent better than others who were not.⁴⁰ Because at least half of the patients in the study stated that they had a religious preference, the authors were careful to note that they were most likely studying the effects of supplementary intercessory prayer, or prayer by the intercessors in addition to the prayer offered by families and friends. The authors concluded their article with a discussion of the factors that might explain the relationship that they believed they documented between intercessory prayer and patients' health, calling for additional studies using standardized outcome measures and variations in prayer strategy "to explore the potential role of prayer as an adjunct to standard medical care."⁴¹

While the Christian, largely Protestant, form of prayer studied by Harris and colleagues closely resembled the prayers in Byrd's study, it led to debate in *Archives of Internal Medicine* in the late 1990s that Byrd's study did not prompt in the late 1980s. Reflecting the evolving standard requirements of double-blind clinical trials, numerous critics first raised questions about aspects of the statistical analysis and scientific

³⁹ See William S. Harris, Manohar Gowda, Jerry W. Kolb, Christopher P. Strychacz, James L. Vacek, Phillips G. Jones, Allen Forker, James H. O'Keefe, and Ben D. McCallister, "A Randomized, Controlled Trial of the Effects of Remote, Intercessory Prayer on Outcomes in Patients Admitted to the Coronary Care Unit," *Archives of Internal Medicine* 159 (1999): 2273–78, 2274.

⁴⁰ The authors found a significant effect of prayer when they examined MAHI-CCU scores as a dependent variable. When they mimicked the dependent variable examined by Byrd (a different summary measure of health) they did not find prayer to have a significant effect. So while they argue that their findings are consistent with Byrd's when the same measure of health was used, the findings were actually different (significant in the Byrd paper, "Positive Therapeutic Effects," and not in the Harris paper, "A Randomized, Controlled Trial").

⁴¹ See Harris et al., "A Randomized, Controlled Trial," 2278. The authors situated their discussion squarely in the realm of what is knowable scientifically. "Natural" explanations they posited "would attribute the beneficial effects of intercessory prayer to 'real' but currently unknown physical forces that are 'generated' by the intercessors and 'received' by the patients" (2277). The kinds of explanations posited by Harris and colleagues, they argue, are within the realm of science even if they are not currently well understood. Much as James Lind aboard the HMS Salisbury in 1753 determined that lemons and limes cured scurvy, they argue, even though explanations about nutrients and ascorbic acid were centuries away from being articulated, Harris and colleagues argued that the inability to know why intercessory prayer influences health does not invalidate their observations, findings, or the appropriateness of studying the issue scientifically (2277).

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validity of this study.⁴² In addition many drew attention to informed consent, a topic that continued to be debated in future intercessory prayer studies. At issue was whether rules of informed consent that require all participants in medical studies to be aware of the study and consent to being included apply in intercessory prayer studies. If these studies are “science” and are published in mainstream medical journals, then, as a number of critics argue in their letters to the editor, such rules of informed consent do apply and this study was not conducted ethically because Harris and colleagues did not adhere to these guidelines.⁴³

In addition to raising questions about whether prayer should be studied scientifically,⁴⁴ a number of letter writers also criticized the way

⁴² Critics commented on the measures and levels of statistical significance, possible errors in the analysis, the independence of observations, the randomization process, and alternative explanations for the findings presented. Overall, they dismissed the study’s conclusions on methodological grounds with comments like this one: “As the hypothesis tested by this study is an extraordinary one, a high standard of evidence is required for it to be believed. This study did not achieve this standard” (Jennifer G. Smith and Richard Fisher MBBS, “The Effect of Remote Intercessory Prayer on Clinical Outcomes [Editor’s Correspondence],” *Archives of Internal Medicine* 160, no. 12 [June 26, 2000]: 1876).

⁴³ This is one of many ethical issues raised by critics of these studies, both in the letters to the editor reviewed here and in other publications in the medical literature. Some studies, such as that of John Mathai and Angela Bourne, “Pilot Study Investigating the Effect of Intercessory Prayer in the Treatment of Child Psychiatric Disorders,” *Australian Psychiatry* 12 (2004): 386–89, were approved by institutional review panels or ethics boards that permitted them to proceed without the consent of the patients involved because the “negative effects” of prayer “were considered negligible and no one associated with the patients knew that prayer was happening” (387). For a discussion of the issues involved in designing a scientific study around a more neutral prayer such as that “God’s will be done,” see Keith S. Thomson, “The Revival of Experiments on Prayer,” *American Scientist* 84 (1996): 532–35. Many of these ethical concerns mirror those raised in the prayer gauge debates, such as whether it is ethical not to pray for people if they appear to benefit from prayers. Aside from the issue of informed consent, which is relevant to the norms of clinical trials, I bracket discussion of these ethical issues out of this article because of the wider range of voices and documents, from the Galton/Wilberforce/Huxley debates to the present, that would need to be included in such a discussion.

⁴⁴ While each letter writer articulated the limits of the scientific method as used in this study differently, they were unified in the claim and self-consciousness about the fact that Harris and colleagues were trying to use scientific tools to study something that may not be knowable using them. After pointing to issues with construct validity and measurement scales in the study, Richard Sloan and Emilia Bagiella, for example, argued that “religion does not need medical science to validate its rituals. To attempt this trivializes religion” (letter to the editor, *Archives of Internal Medicine* 160, no. 12 [June 26, 2000]: 1870). Similarly, physician Fred Rosner asked, “Does the efficacy of prayer have to be scientifically proven?” before outlining the many ways he believed prayer may help people when they are ill that are not likely to be evident scientifically (letter to the editor, *ibid.*, 1875). Physician Mitchell Galishoff pondered in his letter why God should “allow the patients who received the remote intercessory prayer” to do better than the control group before concluding that the real conclusion from this study is that “God’s grace is greater than our skills and immeasurable by our tools. Like many before them, the investigators may have missed the real message of their ‘study:’ that despite our arrogance, God’s omnipotence is beyond

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prayer was conceptualized in this study, calling for expanded understandings of prayer and religion among study authors and the medical community more generally. Several letter writers explicitly pushed against the narrow conceptions of prayer assumed in the study. Physician Dale Hammerschmidt wrote that not all patients divorce the “concept of prayer from the concept of a deity.” Prakash Pande, also a physician, pointed to the possibility of different epistemologies among people of various religious traditions and the researchers. “For those who truly believe in God’s existence, the question why people get sick and how they are healed has a very different meaning.” Rather than expecting God to heal in a particular way and on a specific timetable as assumed by these researchers, he argued that people of faith, “accept His [God’s] will and His timetable and understand that the answer to their petition might be negative as part of God’s greater providence.”⁴⁵ Like intercessory prayer researchers O’Laoire and Walker earlier in the 1990s, critics of Harris’s study attempted to expand the conceptions of prayer presented by pointing to how narrow and standardized Harris’s constructions of prayer were and how foreign they would look to many people of faith.

Efforts to expand the constructions of prayer presented in intercessory prayer studies in the 1990s reflected increased religious diversity among physicians during the decade, growing attention to religion and spirituality across religious traditions in the broader medical literature, and more general awareness among Americans of non-Judeo-Christian religions in the public sphere and beyond. Perhaps more importantly, these shifts reflected broader movements in medical studies and institutions away from what Steven Epstein calls a “standard human” toward an “inclusion and difference” paradigm in which wider ranges of people are included in research studies.⁴⁶ In addition, and likely as a result of declines in Protestantism over the second half of the twentieth century, Protestants’ declining faith in science’s ability to explain religious truths, and increasing public recognition of America’s religious diversity, more voices in the 1990s than in previous decades called on medical researchers to stop studying intercessory prayer through double-blind clinical trials.

our ability to add or detract” (letter to the editor, *ibid.*, 1877). What God is and the way God works, Galishoff explained, at least in this case, are beyond the ability of humans to know using the tools of scientific inquiry.

⁴⁵ Dale Hammerschmidt, letter to the editor, *ibid.*, 1874–75; Prakash Pande, letter to the editor, *ibid.*, 1873–74.

⁴⁶ See Epstein, *Inclusion*.

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Multiple Forms of Prayer: From Protestant to Religiously Mixed Prayers amid Greater Standardization in the 2000s

The number of clinical trials of intercessory prayer increased in 2000, with twelve articles published between 2000 and 2006 in *Alternative Therapies in Health and Medicine*, *American Heart Journal*, *Australian Psychiatry*, *British Medical Journal*, *Journal of Alternative and Complementary Medicine*, *Journal of Reproductive Medicine*, *Lancet*, *Mayo Clinical Proceedings*, *Nursing Research*, and *Southern Medical Journal*. Conceptions of prayer took one of three forms in these studies, ranging from narrow Protestant informed conceptions as in the earliest studies, to expanded conceptions, to constructions of prayer that mixed together prayers from a range of religious traditions simultaneously. Debates about whether intercessory prayer studies should be conducted at all also continued alongside the studies.

One group of researchers in the 2000s continued to study intercessory prayer based on Protestant informed frames and assumptions about prayer in line with those of Byrd and Harris in earlier decades. Countering their critics, they held unapologetically Christian, largely Protestant, views of prayer, often personally identifying as Christian in the studies or subsequent publications. They included only Christian intercessors in their studies and published their results in mainstream medical journals, attempting to stake their claims to intercessory prayer studies as science in the process.⁴⁷ Reflecting continued attempts to approximate the language, standards, and format of contemporary clinical trials in the medical literature, a number of these researchers began to talk about what “dosage” of prayer would be appropriate and changed or further standardized forms of prayers to attempt to ascertain this dose. Their views of a higher power as non-

⁴⁷ See Dale A. Matthews, Sally M. Marlowe, and Francis S. MacNutt, “Effects of Intercessory Prayer on Patients with Rheumatoid Arthritis,” *Southern Medical Journal* 93 (2000): 1177–86; Kwang Y. Cha, Daniel P. Wirth, and Rogerio A. Lobo, “Does Prayer Influence the Success of In Vitro Fertilization–Embryo Transfer? Report of a Masked, Randomized Trial,” *Journal of Reproductive Medicine* 46 (2001): 781–87; William J. Matthews, James M. Conti, and Stephen G. Sireci, “The Effects of Intercessory Prayer, Positive Visualization, and Expectancy of the Well-Being of Kidney Dialysis Patients,” *Alternative Therapies in Health and Medicine* 7 (2001): 42–52; Jennifer M. Aviles, Sr. Ellen Whelan, Debra A. Hernk, Brent A. Williams, Kathleen E. Kenny, W. Michael O’Fallon, and Stephen L. Kopecky, “Intercessory Prayer and Cardiovascular Disease Progression in a Coronary Care Unit Population: A Randomized Controlled Trial,” *Mayo Clinic Proceedings* 76 (2001): 1192–98; Raymond F. Palmer, David Katermdahl, and Jayne Morgan-Kidd, “A Randomized Trial of the Effects of Remote Intercessory Prayer: Interactions with Personal Beliefs on Problem-Specific Outcomes and Functional Status,” *Journal of Alternative and Complementary Medicine* 10 (2004): 438–48; Mathai and Bourne, “Pilot Study”; Benson et al., “Study of the Therapeutic Effects.”

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sectarian (despite their Protestant assumptions) and omniscient were consistent with Protestant informed constructions of prayer in previous decades, as were their continued decisions to allow intercessors to improvise and add their own prayers to those recommended by the researchers. Reflecting their Protestant informed views of prayer as a form of intimate personal communication between the intercessor and the divine, Aviles and colleagues explained in their 2001 study, "We did not consider it appropriate in the case of intercessory prayer to mandate prayer content or to write it down."⁴⁸

A second group of researchers followed the examples of O'Laoire and Walker and colleagues in attempting to expand their conceptions of prayer by including non-Christian intercessors in their studies. Despite attempts to locate such intercessors, however, they were not successful because of the strong unacknowledged Christian, largely Protestant, assumptions about prayer implicit in their research designs. Jeffrey Dusek and colleagues, for example, reported approaching non-Christian groups but could not locate such groups that could meet the protocol. The protocol required that the intercessory prayer groups be available to receive the daily list of people to pray for by fax and post it no later than 7:15 p.m. each evening so that the patients would receive intercessory prayer before midnight the day before their surgery.⁴⁹ This protocol requires not only religious groups with fax machines but also those with individuals who are praying daily between 7:15 p.m., when the fax would arrive, and midnight. While some non-Christians do keep such a prayer schedule, the idea that the norms of Hindu or Buddhist prayers might shape the protocol rather than vice versa did not enter these researchers' minds, as they excluded such groups rather than modifying their protocol accordingly. Benson's most recent study reflected these same problems/assumptions about prayer.⁵⁰

A third group of researchers in the 2000s enlarged the prayers offered in intercessory prayer studies beyond Jewish and Christian prayers, simultaneously reframing their studies in terms of and to include other complementary and alternative therapies. This approach was primarily evident in the ironically named MANTRA (Monitoring and Actualization of Noetic Training) research study conducted by Mitchell Krucoff and

⁴⁸ Aviles et al., "Intercessory Prayer," 1196.

⁴⁹ See Jeffrey A. Dusek, Jane B. Sherwood, Richard Friedman, Patricia Myers, Charles F. Bethea, Sidney Levitsky, Peter C. Hill, Manoj K. Jain, Stephen L. Kopecky, Paul S. Mueller, Peter Lam, Herbert Benson, and Patricia L. Hibberd, "Study of the Therapeutic Effects of Intercessory Prayer (STEP): Study Design and Research Methods," *American Heart Journal* 143 (2002): 577-84.

⁵⁰ See Benson et al., "Study of the Therapeutic Effects."

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colleagues at Duke University. This team studied intercessory prayer among other “noetic” therapies or treatment disciplines “whose influence purports to enable, release, channel or connect an intellectual, intuitive or spiritual healing influence with the use of a drug, device or surgical procedure.”⁵¹ Alongside other noetic therapies, intercessory prayer was offered simultaneously by intercessors at the Unity School of Christianity in Unity Village, Missouri; Nalanda Buddhist monastery in France; Kopan Buddhist monastery in Nepal; Carmelite Monastery in Maryland; online Virtual Jerusalem Web page, which led printed prayers to be placed in the Western Wall; and members of fundamentalist Christian, Baptist, and Moravian congregations in North Carolina.⁵² Reminiscent of the nonsectarian omniscient higher power imagined in earlier studies, all of the people prayed for in this study were prayed for by all of these intercessors. A genteel American religious multiculturalism was evident in this construction of prayer, as prayers from many religious traditions were mixed together following a melting pot approach in which differences, distinctions, or possible contradictions were not acknowledged. This approach reflects not only the assumption that all prayers can be combined but that prayers from different religious traditions should not be tested alongside each other in ways that could be viewed as competitive or that might allow prayers from one tradition to appear more successful than those from another.

The three broad forms of prayer evident in intercessory prayer studies in the 2000s are indicative of broader struggles around the relationships between religious traditions and around who should be included in medical studies taking place within medical institutions more generally. The commitment to Protestant forms of prayer, evident among the largest group of researchers, reflects some of their own personal religious backgrounds and the Christian-focused attention to religion and health in the growing medical literature on the subject in the last several decades.⁵³ Attempts to enlarge the concepts of prayer

⁵¹ See Mitchell W. Krucoff, Suzanne W. Crater, Cindy L. Green, Arthur C. Maas, Jon E. Seskevich, James D. Lane, Karen A. Loeffler, Kenneth Morris, Thomas M. Bashore, and Harold G. Koenig, “Integrative Noetic Therapies as Adjuncts to Percutaneous Intervention during Unstable Coronary Syndromes: Monitoring and Actualization of Noetic Training (MANTRA) Feasibility Pilot,” *American Heart Journal* 142 (2001): 760–69, 761.

⁵² *Ibid.*; and Mitchell W. Krucoff, Suzanne W. Crater, Dianne Gallup, James C. Blankenship, Michael Cuffe, Mimi Guarneri, Richard A. Krieger, Vib R. Kshetry, Kenneth Morris, Mehmet Oz, Augusti Pichard, Michael H. Sketch Jr., Harold G. Koenig, Daniel Mark, and Kerry L. Lee, “Music, Imagery, Touch, and Prayer as Adjuncts to Interventional Cardiac Care: The Monitoring and Actualisation of Noetic Training (MANTRA) II Randomised Study,” *Lancet* 366 (2005): 211–17.

⁵³ See Harold G. Koenig, Michael E. McCullough, and David B. Larson, *Handbook of Religion and Health* (New York: Oxford University Press, 2001).

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studied suggested that, while some researchers were more aware of religious diversity, this awareness was often more superficial than substantive or reflective of understandings medical researchers actually had about non-Christian religious traditions. Attempts in the MANTRA study to mix prayers from many religious traditions and to make intercessory prayer look more mainstream by studying it amid other alternative therapies reflected a third inclination, to study prayers from a range of religious traditions based on the assumption that these prayers can be combined and that the mix represents some more general prayer form that has meaning. Despite including or attempting to include a wider range of intercessors in the 2000s, the constructions of prayer reflected in intercessory prayer studies remained quite consistent at base level across these studies based on a nonsectarian and omniscient higher power and the assumption that prayer to that power, as a concept, has significance and can be measured apart from the religious contexts in which it is produced. These tensions also reflect broader continued efforts in medical institutions during this period to determine who should and should not be included in medical studies, amid shifting guidelines, policies, and recommendations.⁵⁴

Challenges to the Enterprise: Is Prayer a Valid Scientific Concept?

Since 2000, increasingly vocal critics have challenged assumptions about prayer, raising questions about the appropriateness of clinical trials of intercessory prayer in letters to the editors of the medical journals in which these studies are published. These critiques were articulated most cohesively by John Chibnall, Joseph Jeral, and Michael Cerullo in an article published in 2001 in the *Archives of Internal Medicine* that resulted from their attempts to design a study that would determine whether intercessory prayer influenced patients with major depression. Prayer is not an analytic category that itself has some essential meaning, they argued. Rather it is tradition and intercessor dependent and cannot be studied using the tools of medical science. The amount, form, and duration of prayer in previous studies were inadequately explicated, they maintained after reviewing previous studies, perhaps “because it could not be adequately explicated.”⁵⁵ Prayer exists, they argued, “only in the context of human intercourse with the transcendent, not in nature” and the “epistemology that governs prayer (and all matters of faith) is sep-

⁵⁴ See Epstein, *Inclusion*.

⁵⁵ See John T. Chibnall, Joseph M. Jeral, and Michael A. Cerullo, “Experiments on Distant Intercessory Prayer: God, Science, and the Lesson of Massah,” *Archives of Internal Medicine* 161 (2001): 2529–36, 2530.

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arate from that which governs nature.”⁵⁶ Prayer is therefore not a valid scientific construct and not testable, nor are other attempts to test whether God exists. “We do not need science to validate our spiritual beliefs,” they concluded, “as we would never use faith to validate our scientific data.”⁵⁷

While Chibnall and colleagues did not explicate all of the philosophical and theological assumptions study authors have made and others have debated about intercessory prayer over the years, their article represents the first lengthy attempt published in the medical literature that begins to consider theology, theodicy, and deep existential questions about why people become ill, why some recover and others do not, what role human agency via prayers might have in that process, and, most importantly, what role medical science may (or may not) play in engaging with these issues. Their critiques were made possible in 2001 for a number of reasons. First, a body of intercessory prayer studies had been produced that increasingly attempted to meet the requirements of scientific clinical trials, including very narrow definitions of interventions (prayers) and their dosages. Second, awareness of religion and spirituality in medicine had increased to the point that such a broader conversation was possible. This awareness was influenced in part by post-1965 immigration that led people from a range of religious traditions to be represented among medical professionals who were willing to engage in that conversation.⁵⁸ Third, changes in American religious demographics and in the norms of clinical trials in the medical literature and who was included in those trials almost required those who wanted to study intercessory prayer to at least recognize non-Christian religious traditions.

Since the publication of the article by Chibnall et al. in 2001, conversations about epistemology and the appropriateness of intercessory prayer studies have continued in the pages of several prominent medical journals. Jeffrey Bishop wrote an article in *Archives of Internal Medicine* in which he urged his colleagues to see prayer as “a thread in a fabric of beliefs about a meaningful world” which cannot be “extricated from those beliefs for the purposes of scientific study” without becoming “a pale, weak and meaningless image” of prayer that is “not identifiable by anyone of faith as prayer.”⁵⁹ *Academic Medicine* also addressed

⁵⁶ Ibid.

⁵⁷ Ibid., 2535.

⁵⁸ For information about the demographics of the physician workforce over time, see <http://www.aamc.org/workforce/>.

⁵⁹ See Jeffrey P. Bishop, “Prayer, Science, and the Moral Life of Medicine,” *Archives of Internal Medicine* 163 (2003): 1405–8, 1408.

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this topic through two articles outlining the advantages and disadvantages of conducting intercessory prayer studies at academic medical centers.⁶⁰

In perhaps the most humorous critique, Leonard Leibovici published a two-page study in the traditional April Fool's issue of the *British Medical Journal* in 2001 titled "Effects of Remote, Retroactive Intercessory Prayer on Outcomes in Patients with Bloodstream Infection: Randomized Controlled Trial." His stated objective was to "determine whether remote, retroactive intercessory prayer, said for a group of patients with a bloodstream infection, has an effect on outcomes."⁶¹ He selected the names of a random group of patients treated at Rabin Medical Center between 1990 and 1996, gave their names to an intercessor who said a prayer for the well-being and full recovery of the group, and then conducted analyses to determine whether the prayer had any effect on a series of outcomes—it did not.⁶² Letters to the editor and electronic responses poured into the journal until Leibovici published his reply one year later, in April 2002, explaining that the purpose of the article was to ask, "Would you believe in a study that looks methodologically correct but tests something that is completely out of people's frame (or model) of the physical world—for example, retroactive intervention or badly distilled water for asthma?" He outlined three responses to the question before concluding that his article "has nothing to do with religion. I believe that prayer is a real comfort and help to a believer. I do not believe it should be tested in controlled trials."⁶³

Underneath these commentaries and intercessory prayer studies more broadly is one question not tackled by anyone in the debate: why study prayer rather than one or a series of other religious practices? Prayer certainly has a long history in the care for and treatment of the sick. Unlike religious rituals and ceremonies, which differ between traditions, prayer also appears fairly standard and uniform across religious traditions from the perspectives of the researchers and medical doctors, themselves not experts in religion. For physicians familiar with double-blind clinical trials, prayer likely appears to be an ideal religious practice because it is imagined to be relatively straightforward. No particular equipment, leaders, physical space, or training are re-

⁶⁰ See Edward C. Halperin, "Should Academic Medical Centers Conduct Clinical Trials of the Efficacy of Intercessory Prayer?" *Academic Medicine* 76 (2001): 791–97; Brian D. Kavanagh, "Clinical Trials of Intercessory Prayer," *Academic Medicine* 77 (2002): 109.

⁶¹ See Leonard Leibovici, "Effects of Remote, Retroactive Intercessory Prayer on Outcomes in Patients with Bloodstream Infection: Randomised Controlled Trial," *British Medical Journal* 323 (2001): 1450–51, 1450.

⁶² *Ibid.*

⁶³ Leonard Leibovici, "Author's Reply," *British Medical Journal* 324 (April 27, 2002): 1038–39.

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quired, there are no financial costs for the prayer or the intercessors, and the distance between the intercessors and people being prayed for is not an issue. Prayer is an ideal “intervention” in these studies because it is imagined to be pan-religious (and therefore inclusive) and because it has been constructed instrumentally in a way that fits the practical scientific needs of research teams.

CONCLUSIONS

Much like the controversies generated around John Tyndall and the prayer gauge debate in nineteenth-century Victorian England, the clinical trials of intercessory prayer described here provide a unique glimpse into the intersections between religion and medicine in the late twentieth-century United States. Unlike traditional clinical trials that test a new drug or revised treatment protocol that might change clinical practices and improve the health and health care of the public, the reasons intercessory prayer studies began and continued over forty years remain murky. Findings from studies that showed intercessory prayer to influence patients’ health did not lead large numbers of physicians to prescribe intercessory prayer, just as negative findings likely did not stop many people or religious groups from praying for the health of unknown others. From a research design perspective, these studies were flawed from the start, as the will of intercessors and the character of a higher power are difficult or impossible to measure, just as it is not feasible to actually regulate the amount of prayer directed toward an individual by named intercessors, their families or friends, and/or the millions of Americans who offer general prayers for health and healing in religious services weekly.

Symbolically, however, these studies reveal much about how one small group of medical scientists and their critics constructed prayer and the evolving religious and medical scientific factors that shaped their evolving understandings. Early researchers tested Protestant framed Christian prayers that imagined a deity that is nonsectarian and omniscient, does not favor the prayers of religious leaders over lay-people, and values improvised rather than ritual prayers. Later researchers attempted to expand these narrow constructions. By the 2000s, intercessory prayer researchers were divided into three groups. The first group continued to test largely Protestant informed constructions of prayer. The second group attempted to expand prayer constructions beyond Christian and Jewish intercessors but ultimately failed to do so because of their own deeply held assumptions about prayer and the requirements of clinical studies. The third group ac-

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tually constructed prayer in a way that included people from multiple religious traditions, albeit mixed together. By 2000, a group of critics simultaneously argued that prayer simply cannot be studied using the clinical trial as a research tool. Differences in the religious backgrounds, training, epistemology, and institutional contexts of researchers since 2000 likely influenced which of these approaches to intercessory prayer studies individual researchers adopted. Broader cultural shifts related to increased attention to religion and spirituality in medicine, increased religious diversity in medicine and in the United States more broadly, the continued funding of intercessory prayer studies, and greater standardization and inclusion of people in clinical trials allowed these studies to continue and the forms of prayer tested to shift with the norms of their medical and religious contexts.

While religious and medical leaders, institutions, and ideas have often overlapped or vied for cultural space or jurisdiction over particular issues in American history, this case study illustrates one way that religion and medicine interfaced in late twentieth-century America.⁶⁴ Through their coverage in the *New York Times* and in other high-profile newspapers and medical journals, these studies attracted more popular attention than their numbers may have warranted over these forty years and also raised questions, among researchers and the public, about broader studies of health and religion, such as those investigating the health effects of personal prayer or meditation. Medical researchers invested in building a body of research about the relationship between religion and health increasingly called for the end to these studies in the 2000s, while hospital chaplains and others concerned with religious and spiritual aspects of medical care tried to educate health-care providers about the long list of ways religion/spirituality may be important for health-care provision quite apart from intercessory prayer.

The understandings of intercessory prayer represented in these studies further illustrate hybrid and shifting constructions of prayer, as a proxy for religion more broadly, based on the theoretical and epistemological assumptions of the individuals doing the study.⁶⁵ While these particular constructions of prayer likely seem quite foreign to scholars of religion, the importance of epistemology they illustrate and the role of individual, institutional, and cultural contexts in shaping researchers' underlying assumptions are similarly relevant. While it is much

⁶⁴ See Porterfield, *Healing in the History of Christianity*; Rosenberg, *The Care of Strangers*; Risse, *Mending Bodies, Saving Souls*; Barnes and Sered, *Religion and Healing in America*; Shorter, *From Paralysis to Fatigue*; Lutz, *American Nervousness*.

⁶⁵ See McGuire and Maduro, "Introduction"; Klassen, "Ritual Appropriations and Appropriate Ritual"; Hall, *Lived Religion in America*.

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easier to cast this analytic lens on others rather than on ourselves, this case study provides an ideal opportunity to investigate on our own or in conversation with students and colleagues how our backgrounds, training, and institutional contexts shape our theoretical and epistemological assumptions about prayer and religion more broadly. To fully turn the analytic lens on ourselves, we might ask what a researcher analyzing journals in religious studies would similarly conclude about understandings of prayer represented in the pages therein.

Appendix Research Methods

In this study, I approach medical studies of intercessory prayer and the debates about them on the pages of medical journals as “data,” gathered through a systematic review of medical literature published in English between 1965 and 2006. I located these studies through bibliographic searches of relevant medical, scientific, and religious databases, including Medline, Biological Abstracts, PsychInfo, Web of Science, Sociological Abstracts, Academic Search Premier, ATLA Religion Indexes, Christian Periodicals Index, Wilson Omni, and ProQuest Dissertation Abstracts. The *Cochrane Review*, a highly respected organization that compiles medical studies about specific topics to offer clear medical recommendations, first conducted a meta-analysis about the effects of intercessory prayer on the health of those being prayed for in 1997, which was updated several times between then and 2006. I also examined all of the studies located and analyzed in the *Cochrane Review*. Further, I combed the bibliographies of each of the studies analyzed to confirm that no additional studies were overlooked. I restrict this analysis to published articles (not dissertations) about individuals (other than students in college classes) that attempt to isolate and measure the effect of intercessory prayer offered by strangers at a distance on the health of the individuals receiving the prayers.⁶⁶ While some critics and commentators do not judge all of the studies included here to be “double blind” clinical trials based on strict scientific criteria, their authors describe them as such, they are a part of this growing body of literature, and so they are included in the analysis.

Following the above criteria, I located eighteen articles that the *Cochrane Review* published between 1965 and 2006. Some of the articles report on the same studies, as is evident in table 1. While questions about the study of intercessory prayer are sometimes framed more broadly in terms of “distance healing,” an excellent topic for a separate article, I focus here only on studies

⁶⁶ Several studies focus on the health of the people doing the praying, but I am not examining them here. I also exclude Daniel P. Wirth and Barbara J. Mitchell, “Complementary Healing for Patients with Type I Diabetes Mellitus,” *Journal of Scientific Exploration* 8 (1994): 367–77, because this study does not isolate intercessory prayer but studies intercessory prayer as combined with noncontact therapeutic touch. In a few of the studies examined intercessory prayer was conducted at a distance as well as in person. I focus in those studies on the results gathered from distant intercessory prayer.

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of “prayer” to understand the religious valence and constructions of prayer as an analytic concept.⁶⁷ I examined each study and debate in the medical literature surrounding it as a separate case and coded it using a standard coding schema with particular attention to the arguments made by the authors and critics about the appropriateness of and reason for the study, the evidence gathered and brought to bear, the conclusions reached (and their limitations, if any), and the construction and understanding of prayer. Arranged chronologically, the medical studies examined were:

- Joyce, C. R. B., and R. M. C. Welldon. “The Objective Efficacy of Prayer: A Double-Blind Clinical Trial.” *Journal of Chronic Diseases* 18, no. 4 (1965): 367–77.
- Collipp, Platon J. “The Efficacy of Prayer: A Triple-Blind Study.” *Medical Times* 97, no. 5 (1969): 201–4.
- Byrd, Randolph C. “Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population.” *Southern Medical Journal* 81, no. 7 (1988): 826–29.
- O’Laoire, Sean. “An Experimental Study of the Effects of Distant, Intercessory Prayer on Self-Esteem, Anxiety, and Depression.” *Alternative Therapies in Health and Medicine* 3, no. 6 (1997): 38–53.
- Walker, Scott R., J. Scott Tonigan, William R. Miller, Stephen Comer, and Linda Kahlich. “Intercessory Prayer in the Treatment of Alcohol Abuse and Dependence: A Pilot Investigation.” *Alternative Therapies in Health and Medicine* 3, no. 6 (1997): 79–86.
- Harris, William S., Manohar Gowda, Jerry W. Kolb, Christopher P. Strychacz, James L. Vacek, Phillips G. Jones, Allen Forker, James H. O’Keefe, and Ben D. McCallister. “A Randomized, Controlled Trial of the Effects of Remote, Intercessory Prayer on Outcomes in Patients Admitted to the Coronary Care Unit.” *Archives of Internal Medicine* 159, no. 19 (1999): 2273–78.
- Matthews, Dale A., Sally M. Marlowe, and Francis S. MacNutt. “Effects of Intercessory Prayer on Patients with Rheumatoid Arthritis.” *Southern Medical Journal* 93, no. 12 (2000): 1177–86.
- Cha, Kwang Y., Daniel P. Wirth, and Rogerio A. Lobo. “Does Prayer Influence the Success of In Vitro Fertilization–Embryo Transfer? Report of a Masked, Randomized Trial.” *Journal of Reproductive Medicine* 46, no. 9 (2001): 781–87.
- Matthews, William J., James M. Conti, and Stephen G. Sireci. “The Effects of Intercessory Prayer, Positive Visualization, and Expectancy of the Well-Being of Kidney Dialysis Patients.” *Alternative Therapies in Health and Medicine* 7, no. 5 (2001): 42–52.
- Krucoff, Mitchell W., Suzanne W. Crater, Cindy L. Green, Arthur C. Maas, Jon E. Seskevich, James D. Lane, Karen A. Loeffler, Kenneth Morris, Thomas M. Bashore, and Harold G. Koenig. “Integrative Noetic Therapies as Adjuncts

⁶⁷ For overviews of studies of distance healing, see John A. Astin, Elaine Harkness, and Edzard Ernst, “The Efficacy of ‘Distant Healing’: A Systematic Review of Randomized Trials,” *Annals of Internal Medicine* 132 (2000): 903–10; Neil C. Abbot, “Healing as a Therapy for Human Disease: A Systematic Review,” *Journal of Alternative and Complementary Medicine* 6 (2000): 159–69; Cindy C. Crawford, Andrew G. Sparber, and Wayne B. Jonas, “A Systematic Review of the Quality of Research on Hands-On and Distance Healing: Clinical and Laboratory Studies,” *Alternative Therapies* 9 (2003): A96–A104.

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- to Percutaneous Intervention during Unstable Coronary Syndromes: Monitoring and Actualization of Noetic Training (MANTRA) Feasibility Pilot." *American Heart Journal* 142, no. 5 (2001): 760–69.
- Aviles, Jennifer M., Sr. Ellen Whelan, Debra A. Hernk, Brent A. Williams, Kathleen E. Kenny, W. Michael O'Fallon, and Stephen L. Kopecky. "Intercessory Prayer and Cardiovascular Disease Progression in a Coronary Care Unit Population: A Randomized Controlled Trial." *Mayo Clinic Proceedings* 76, no. 12 (2001): 1192–98.
- Leibovici, Leonard. "Effects of Remote, Retroactive Intercessory Prayer on Outcomes in Patients with Bloodstream Infection: Randomised Controlled Trial." *British Medical Journal* 323, no. 7327 (2001): 1450–51.
- Dusek, Jeffrey A., Jane B. Sherwood, Richard Friedman, Patricia Myers, Charles F. Bethea, Sidney Levitsky, Peter C. Hill, Manoj K. Jain, Stephen L. Kopecky, Paul S. Mueller, Peter Lam, Herbert Benson, and Patricia L. Hibberd. "Study of the Therapeutic Effects of Intercessory Prayer (STEP): Study Design and Research Methods." *American Heart Journal* 143, no. 4 (2002): 577–84.
- Palmer, Raymond F., David Katerndahl, and Jayne Morgan-Kidd. "A Randomized Trial of the Effects of Remote Intercessory Prayer: Interactions with Personal Beliefs on Problem-Specific Outcomes and Functional Status." *Journal of Alternative and Complementary Medicine* 10, no. 3 (2004): 438–48.
- Seskevich, Jon E., Suzanne W. Crater, James D. Lane, and Mitchell W. Krucoff. "Beneficial Effects of Noetic Therapies on Mood before Percutaneous Intervention for Unstable Coronary Syndromes." *Nursing Research* 53, no. 2 (2004): 116–21.
- Mathai, John, and Angela Bourne. "Pilot Study Investigating the Effect of Intercessory Prayer in the Treatment of Child Psychiatric Disorders." *Australian Psychiatry* 12, no. 4 (2004): 386–89.
- Krucoff, Mitchell W., Suzanne W. Crater, Dianne Gallup, James C. Blankenship, Michael Cuffe, Mimi Guarneri, Richard A. Krieger, Vib R. Kshetry, Kenneth Morris, Mehmet Oz, Augusti Pichard, Michael H. Sketch Jr., Harold G. Koenig, Daniel Mark, and Kerry L. Lee. "Music, Imagery, Touch, and Prayer as Adjuncts to Interventional Cardiac Care: The Monitoring and Actualisation of Noetic Training (MANTRA) II Randomised Study." *Lancet* 366 (2005): 211–17.
- Benson, Herbert, Jeffrey A. Dusek, Jane B. Sherwood, Peter Lam, Charles F. Bethea, William Carpenter, Sidney Levitsky, Peter C. Hill, Donald W. Clem Jr., Manoj K. Jain, David Drumel, Stephen L. Kopecky, Paul S. Mueller, Dean Marek, Sue Rollins, and Patricia L. Hibberd. "Study of the Therapeutic Effects of Intercessory Prayer (STEP) in Cardiac Bypass Patients: A Multicenter Randomized Trial of Uncertainty and Certainty of Receiving Intercessory Prayer." *American Heart Journal* 151, no. 4 (2006): 934–42.