Is Prayer Clinically Effective?*

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Anecdote and research on prayer's clinical effectiveness has become big news of late. A 1997 Christianity Today cover story (preceding a Newsweek prayer cover story) explains "how the medical community is discovering the healing power of prayer." Although the magazine acknowledges that "petitionary prayer is not 100 percent effective" (imagine if it were), it welcomes the conclusion of Georgetown University internist and prayer researcher Dale Matthews, "that, scientifically, prayer is good for you. The medical effects of faith on health are not a matter of faith, but of science."

Is prayer good for you? No one argues that prayer by those who believe in prayer's healing power might indeed calm the soul, relieve stress, and lead to reduced hypertension, controlled headaches, and strengthened immune functioning. But a sugar pill, offered as if it were a real therapy, can do as much. Such is the power of positive belief (a fact of life that guarantees some successes for the devotees of alternative medicine gurus such as Deepak Chopra and Andrew Weil, regardless of whether their specific recommendations have any intrinsic healing power).

But modern advocates of prayer's power have something more in mind than a placebo effect. Prayers of intercession and petition can change reality, they believe. Did not Jesus say, "Ask, and it will be given you"? Why not, then, pray for health, wealth, parking places, better grades, safe air travel, and even a sunny day for the church picnic? One presumes that Pat Robertson had Jesus' promise in mind when he asked God to steer hurricane Gloria away from his Virginia Beach television headquarters: "I felt that if I couldn't move a hurricane, I could hardly move a nation." General George S. Patton held the same concept of prayer when he ordered that all chaplains pray for an end to the winter rains that in 1944 immobilized his troops:

General Patton: Chaplain, I want you to publish a prayer for good weather. I'm tired of these soldiers having to fight mud and floods as well as Germans. See if we can't get God to work on our side.

Chaplain O'Neill: Sir, it's going to take a pretty thick rug for that kind of praying.

* The last part of this essay is adapted from David G. Myers and Malcom A. Jeeves, Psychology through the Eyes of Faith (HarperCollins, 1997). The illusory correlation box is adapted from David G. Myers, Psychology, 6th edition (Worth Publishers, in press).
General Patton: I don't care if it takes the flying carpet. I want the praying done.

The resulting prayer, which was distributed by the U.S. Army with Patton's Christmas greetings, called upon God
to restrain these immoderate rains with which we have had to contend. Grant us fair weather for Battle. Graciously hearken
to us as soldiers who call upon Thee that, armed with Thy power, we may advance from victory to victory, and crush the oppression and wickedness of our enemies, and establish Thy justice among men and nations. Amen.¹

Testing Prayer

What about the kinder, gentler intercessory prayers for healing? Do they produce cures? faster recovery? decreased mortality? In 1872, an anonymous Britisher proposed a grand experiment that might answer these questions. Choose "one single ward or hospital" for three to five years of sustained prayer by "the whole body of the faithful." Will the healing and mortality rates there beat those in comparable hospitals elsewhere? If they do, so much the better for our belief in intercessory prayer and our associated understanding of God. If they do not, so much the worse for our beliefs.

The very idea triggered a national "prayer-gauge controversy" that raged in Britain during 1872-73.² Should we test the efficacy of prayer as we would test any proposed medical remedy? In the spirit of those Christian founders of modern science, should we approach even our cherished beliefs with such humility that we are willing to check them against the realities of God's creation? Or is the very idea of testing prayer—and God—as outrageous as most Christian leaders of the day assumed?

If experimenting with prayer offends you, said scientist Francis Galton (Charles Darwin's cousin), then why not examine the efficacy of spontaneous prayers? Galton, who loved to quantify everything from intelligence to female beauty, collected mortality data on groups of people who were the objects of much prayer—kings, clergy, missionaries—and found that they lived no longer than others. Moreover, the proportion of stillbirths suffered by praying and nonpraying expectant parents appeared similar.

And there things stood until a century or so later, when several American researchers actually decided to experiment with prayer. Although not the first effort—others are recounted by Larry Dossey in Healing Words: The Power of Prayer and the Practice of Medicine³—the one that did the most to revive interest in such experiments was recounted in Randolph Byrd's 1988 report, "Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population."⁴ Byrd randomly assigned 393 patients admitted to San Francisco General Hospital's coronary care unit to either a prayer or no-prayer condition.
The first names of prayer group patients, along with diagnosis, condition, and occasional updates, were given to three to seven "born again" intercessors. In the tradition of double-blind drug studies, Byrd kept both patients and staff ignorant of which condition any patient was in. (This is the standard procedure in therapeutic experiments for precluding any placebo effect.)

The results? For six of twenty-six outcomes, such as the need for diuretics, antibiotics, and ventilation therapy, the prayed-for patients did better. The widely publicized conclusion? Prayer works. That is good but hardly surprising news to most Americans, according to a Newsweek survey: In that poll, 87 percent of respondents said that "God answers prayers," and 82 percent said that when praying they "ask for health or success for a child or family member." In a Gallup survey, three in ten Americans reported having experienced a "remarkable healing," of whom 30 percent credit their own or others' prayers.

"Not so fast," said the skeptics. For other measures, such as length of hospital stay or mortality, there was no difference between Byrd's prayer and no-prayer groups. Try enough prayer experiments and take enough measures and you can be sure that some results—just by chance—will be statistically significant.

Other experiments on bacteria, plants, and mice as well as on humans have followed. A few have generated publicity. Others, such as a 1997 experiment, "Intercessory Prayer in the Treatment of Alcohol Abuse and Dependence," few have heard about because there was no measurable effect of intercessory prayer.

All these are a prelude to two new prayer experiments (one small, one huge) funded by the John Templeton Foundation. (Although I serve this foundation as an advisor and trustee, I was not involved in its decisions and I report here only on publicly available information.) My challenge to my readers, and to my invited respondents, is to say what results you predict, and why.

In the smaller experiment, Dale Matthews, in cooperation with S.M. Marlowe and Francis MacNutt, assigned forty patients at Clearwater, Florida's, Arthritis Treatment Center to one of two groups—a control group receiving no treatment, and a group that received healing prayer with the laying on of hands over four days. Half of the patients in this latter group were additionally assigned to receive six months of long-distance intercessory prayers. Patients in both the control group and the two prayer groups were examined periodically over the next year, rating their own pain and being rated by clinicians who were blind to the patients' experimental group.

Time to stand up and be counted: What effect, if any, do you predict when Matthews compares the arthritic conditions of the control group and the two prayer conditions?

And then there is the mother of all prayer experiments, the one that so dwarfs all others in both size and credibility that it is destined to be discussed and debated for years to come. Indeed, I expect that, beginning with this issue of the Reformed Review, this experiment will trigger—as did the British prayer-test controversy 128 years ago—much theological and pastoral reflection (not to
mention much discussion in church school classes). The discussion and debate will likely focus on precisely what we Christians should take to be the essence of prayer and of God's relationship to the creation. If anything, thanks to media publicity and to this real life version of what was only hypothetical in 1872, the controversy may be larger.

I call it the Harvard Prayer Experiment because the primary investigator, cardiologist Herbert Benson, is a Harvard Medical School professor (as well as the author of many popular books on the healing power of meditation and relaxation, most recently Timeless Healing: The Power and Biology of Belief). Although it is enormous, the experiment—a greatly expanded and tightly controlled replication of the small Byrd study—is elegantly simple. Each of three conditions engages several hundred patients at five leading medical centers who are about to undergo coronary bypass surgery. (All consent to participation.) Teams of intercessors—people of faith who, one presumes, hope to show the power of prayer while supporting the seriously ill patients—will pray for two of three groups of bypass patients. One group will know it is being prayed for. Patients in the other two groups will either be prayed for by the volunteer intercessors or not, but they will not know which condition they are in. The research is currently underway. Data collection will continue until early 2001, and the announcement of results will occur sometime in 2002.

What, dear readers and respondents, do you predict? Among those who do not know whether they are receiving the experimental prayers, will those who are prayed for recover better and survive longer? A one-word answer please: yes or no?

And a secondary (and theologically less provocative) question: Will those who know they are being prayed for during the experiment recover better and survive longer than those in either of the other conditions?

Why People of Faith Can Be Skeptical about Prayer Experiments

People of faith as well as nonbelievers have reason to be skeptical about efforts to test and calibrate effects of intercessory prayer. I was concerned that to make this statement after the fact might seem like special pleading. So, before the Harvard Prayer Experiment began, I filed a notarized prediction of its outcome. As a person of faith, I said, I have three reasons for predicting that intercessory prayer will not exhibit significant healing power for the cardiac care patients of this experiment. Indeed, along with many other Christians and Jews who worship the God of the Bible, my understanding of God and God's relation to the created world would be more challenged by positive than null results. My three reasons:

(1) The prayer concept being tested is more akin to magic than to a biblical understanding of prayer to an omniscient and sovereign God. In the biblical view, God underlies the whole creation. God is not some little spiritual factor that occasionally deflects nature's course, but the ground of all being. God works not in the gaps of what we do not yet understand, but in and through
nature, including the healing ministries that led people of faith to introduce medicine and hospitals worldwide. Thus, while our Lord's model prayer teaches us to acknowledge our dependence on God for our basic necessities ("our daily bread"), it does not view God as a celestial vending machine whose levers we pull with our prayers. Indeed, would the all-wise, all-knowing, all-loving God of the Bible be uninformed or uncaring apart from our prayers? Does not the presumption that we creatures can pull God's strings violate biblical admonitions to recognize humbly our place as finite creatures of the infinite God? No wonder we are counseled to offer prayers of adoration, praise, confession, and thanksgiving, as well as to ask for what shall (spiritually, if not materially) be given. Prayer, J.I. Packer has written, "is not an attempt to force God's hand, but a humble acknowledgment of helplessness and dependence."5

(2) Even for those who believe that God intervenes in response to prayer, there are practical reasons for expecting null effects:

- **The "other prayers" factor:** Given that 95 percent of Americans express belief in God, all patients undergoing cardiac bypass surgery will already be receiving prayer—by spouses, children, siblings, friends, colleagues, and fellow believers and/or congregants, if not by themselves. Are these fervent prayers a mere "noise factor" above which the signal of additional prayers may rouse God? Does God follow a dose-response curve—more prayers, more response? Does God count votes? Are the pleading, earnest prayers of patients and those who love them not sufficiently persuasive (if God needs to be informed or persuaded of our needs)? Are the distant prayers of strangers participating in an experiment also needed?

- **The doubt factor:** To be sure, some Christians believe that prayers, uttered in believing faith, are potent. But are there any or many people of faith who also believe that prayers called forth by a doubting scientist will be similarly effective? Scientific testing implies doubt. The scientific attitude involves being skeptical but not cynical, open but not gullible. In this doubting yet curious spirit, scientists put contending theories and claims to the test.

- **"God is not mocked":** As Christians recalled during the great British prayer test controversy, Jesus declared in response to one of his temptations, "Do not put the Lord your God to the test." Reflecting on a proposal to test prayers for randomly selected preterm babies, Keith Stewart Thomson questions "whether all such experiments come close to blasphemy. If the health outcomes of the prayed-for subjects turn out to be significantly better than for the others, the experimenter will have set up a situation in which God has, as it were, been made to show his (or her) hand."6 As C.S. Lewis said of any effort to prove prayer, the "impossibility of empirical proof is a spiritual necessity" lest a person begin to "feel like a magician."7 Indeed, if this experiment were to show that numbers of intercessors matter—that distant strangers' prayers boost recovery chances—might rich people not want, in hopes of gaining God's attention, to pay others to pray for them?
The evidence of history suggests that the prayers of finite humans do not manipulate an infinite God. If they could and did, how many droughts, floods, hurricanes, and plagues would have been averted? How many stillborn infants or children with disabilities would have been born healthy? And consider the Bible's own evidence: How should the unanswered prayers of Job, Paul, and even Jesus (in petitioning that the cup might pass) inform our theology of prayer? If the rain falls on my picnic does it mean I pray with too little faith—or that the rain falls both on those who believe and those who do not? Should we pray to God as manipulative adolescents—or as dependent preschoolers, whose loving parents, already knowing their children's needs, welcome the intimacy?

If my prediction of no demonstrable effect of experimental prayers (beyond a possible placebo effect) proves correct, perhaps some good may come of the Harvard Prayer Experiment. The publicity and debate I expect it will generate may stimulate healthy reflection on God's relationship to the natural and human world.

Already we have results in from the arthritis study (which are available as a polished video presentation that includes sample patients). The results: Hands-on healing prayer had very significant effects. Many patients exhibited decreased swelling of joints and reported greatly decreased pain. Although skeptics may call this a demonstration of the mind's own healing powers—a placebo effect—Dale Matthews describes the effect in more spiritual terms. But what about the added effect of distant intercessory prayer? An honest if disappointed Matthews reports simply: "No significant effect from distant prayer was found."

A Biblical Understanding of Prayer

Henri Nouwen once suggested that clearing the decks of some of the false gods of popular religion may prepare our hearts for the God of the Bible. Given our human propensity to what research psychologists call "illusory thinking," superstitious thinking about prayer is probably inevitable. Dozens of recent experiments reveal that we readily

- perceive relationships where none exist (especially where we expect to see them),
- perceive causal connections among events that are only coincidentally correlated, and
- believe that we are controlling events that are actually beyond our control.

The investigations that established these phenomena have been extended to studies of gambling behavior, stock market predictions, clinical predictions of behavior, and beliefs in ESP. In each of these realms, we easily misperceive our behavior as correlated with later events and thus easily delude ourselves into thinking that we can predict or influence uncontrollable events. Moreover, we are predisposed to find order in random events, to interpret outcomes guided by our preconceptions, to search for and recall instances that confirm our beliefs, and to be more persuaded by vivid anecdotes than by statistical reality. I
described these provocative experiments and their applications in *The Inflated Self: Human Illusions and the Biblical Call to Hope* and will explore them further in a forthcoming book on the powers and limits of human intuition. For one example, see the box "Illusory Correlation."

**Illusory Correlation**

A perceived correlation that does not really exist is an *illusory correlation*. When we *believe* there is a relationship between two things, we are likely to *notice* and *recall* instances that confirm our belief. The frequent result is an illusory correlation.

Illusory correlations help explain many a superstitious belief, such as the presumption that more babies are born when the moon is full or that infertile couples who adopt become more likely to conceive. Those who conceive after adopting capture our attention. We are less likely to notice those who adopt and never conceive, or those who conceive without adopting.

Such illusory thinking helps explain why for so many years people believed (and many still do) that sugar made children hyperactive, that getting cold and wet predisposed a cold, and that weather changes trigger arthritis pain. Physician Donald Redelmeier, working with Amos Tversk (a psychologist who specialized in "debugging human intuition"), followed eighteen arthritis patients for fifteen months. The researchers recorded both the patients' pain reports and the daily temperature, humidity, and barometric pressure. Despite patients' beliefs, the weather was uncorrelated with their discomfort, either on the same day or up to two days earlier or later. Shown columns of random numbers labeled "arthritis pain" and "barometric pressure," even college students saw a correlation where there was none. We are, it seems, very, very good at detecting patterns, whether they are there or not, and not so good at testing our hypotheses.

Because we are sensitive to dramatic or unusual events, we are especially likely to notice and remember the occurrence of two such events in sequence—say, a premonition of an unlikely phone call followed by the call. When the call does not follow the premonition, we are less likely to note and remember the nonevent.

Likewise, instances of positive-thinking people being cured of cancer impress those who believe that positive attitudes counter disease. But to assess whether positive thinking actually affects cancer, we need three more types of information. First, we need an estimate of how many positive thinkers were not cured. Then we need to know how many people with cancer were and were not cured among those not using positive thinking. Without all these figures, the positive examples of a few tell us nothing about the actual correlation between attitudes and disease.

Are people's perceptions of the efficacy of petitionary and intercessory prayers immune to these illusory thinking tendencies? Or do they almost
guarantee that, whether our prayers change the course of events or not, we will be tempted to think they do?

If that sounds revolting and heretical, it may be reassuring to remember that warnings about false prayer come from believers as well as skeptics. There was no stronger critic of false piety than Jesus. If it is heretical to think too little of our own powers to call forth God's intervention, is it not more heretical to think of God as a cosmic Santa Claus who grants our wishes if we are good? Is not prayer by prideful humans vulnerable to meeting anthropologist Bronislaw Malinowski's definition of superstitious magic—"acts which are only a means to a definite end expected later on"? Malinowski contrasted such acts with religious acts—"acts being themselves the fulfillment of their purpose." Magic is a manipulative technique; worship is an end in itself; something intrinsically worth doing.

When religion is sold as magic, using exaggerated testimonials that falsely portray faith as a route to problem-free health, wealth, and success, the convert is set up for disillusionment. Exaggeration produces doubts in those who fail to get the results they expect and provokes inferiority in listeners who compare their lives with the glamorous successes of their fellow believers. If we repeatedly hear testimonies saying, "God healed all my woes," but find that our woes remain, we may either feel guilty at our seeming lack of faith or we may begin to wonder if Christianity is a farce.

But surely God does care for us, more than we can ever know. The God of the Bible is a personal being who bids us to ask, that we may receive. Although the Bible does not promise that we will be spared sorrow, humiliation, misfortune, sickness, and death, it does offer a perspective from which to view such events and a promise that God is beside us in our suffering. Through defeat, suffering, and even death we will never be abandoned.

In the biblical view, the "God factor" is not represented by a mere slight deflection in, say, the number of stillborn or handicapped babies born to praying expectant parents. One does not need a sharp natural/supernatural dichotomy or a manipulative concept of prayer to "make room for" God's involvement in the world. God is everywhere and at all times already involved. Thus when the Pharisees pressed Jesus for some criteria by which they could validate the kingdom of God, Jesus answered, "The kingdom of God is not coming with things that can be observed; nor will they say, 'Look, here it is!' or 'There it is!' For, in fact, the kingdom of God is among you" (Luke 17:20b-21).

For those of us who pray—and I am writing this in the St. Columba Hotel after returning from morning prayers at the adjacent Iona Abbey, a spiritual home of prayer-laden Celtic Christianity—what then is appropriate Christian prayer? As illustrated by our Lord's prayer, it is a declaration of praise and thanksgiving for God's infinite goodness and an acknowledgment of sin and the need for forgiveness.

Our Father in heaven,
hallowed be your name,
your kingdom come,
your will be done,
on earth as in heaven.
Give us today our daily bread.
Forgive us our sins
as we forgive those who sin against us.
Save us from the time of trial
and deliver us from evil.
For the kingdom, the power, and the glory are yours
now and for ever.
Amen.

Christ's prayer, the model prayer for Christians, contains no attempt to
manipulate God. It does not attempt to cajole a miserly god into doing what that
god would not have the goodwill and good sense to do anyway. It has the
quality of a confessional statement, affirming God's nature and human
dependence upon God's grace. It therefore prepares one to receive that which
God is already providing. The petitions that God's will be done and that
forgiveness be given for debts seek what is intrinsic to God's nature. The
petition for daily bread views God as gracious parent, humanity as dependent
and anticipating children, and our lives as daily saturated by God's providence.

Prayer is not magic, but it is mystical. In quiet meditation and prayer, we
experience the reality of the living God. As God speaks to us and we to God, we
are changed. Sinking to our knees or bowing our heads remind us of our humble
dependence. Prayers for others make us more aware of their needs. As the
devotional writer William Law once observed, "there is nothing that makes us
love a man so much as praying for him."

Prayer may also be viewed as a response, as an effect rather than a cause, as
a time not of asking

"What will we eat?" or "What will we drink?" or "What will we
wear?" For it is the Gentiles who strive for all these things; and
indeed your heavenly Father knows that you need all these
things. But strive first for the kingdom of God and his
righteousness, and all these things will be given to you as well
(Matt. 6:31b-33).

Paul echoes Jesus' thoughts: "The Lord is near. Do not worry about anything,
but in everything by prayer and supplication with thanksgiving let your requests
be made known to God. And the peace of God, which surpasses all
understanding, will guard your hearts and your minds in Christ Jesus" (Phil.
4:5b-7). Paul urges us to petition God, and we are promised an answer: not that
of scientifically provable effects, but the peace of God that satisfies the deeper
cravings of our being.
Jesus himself prayed that, if it be God's will, the cup might pass. It did not, but his strength was made equal to the burden. In confessing his private longings and his communion with the Father, Jesus found the grace to endure. If our Creator loves us as an all-loving parent loves a child, then we, like children, can communicate with God without ceasing. We can share even the little concerns of daily existence—anything that is worth worrying about—much as a child does with its parents or as two intimate friends with one another. We can surrender every corner of our lives in prayer, not with the superstitious intent of manipulating magical solutions to life's problems, but in the confidence that petitionary prayer is a means of grace whereby we grow and are sensitized to God's presence. To question the use of petitionary prayer is like questioning the use of making music, or skiing, or sharing a meal with a friend. Such activities, like prayer, are inherently worthwhile quite apart from any further purposes they serve.

That said, let us not forget that prayer's purposes are multiple. Through prayer we thank and praise God, we humbly confess our sin and acknowledge our dependence upon God's grace, we express our concerns, we experience relationship with God, and we seek inward peace and the strength to live as God's people.

ENDNOTES