

The Biology of Belief

TIME



By **JEFFREY KLUGER** Thursday, Feb. 12, 2009



Nigeria

At the Synagogue Church of All Nations in Lagos, Pastor T.B. Joshua absolves a woman of her sins, part of an effort to cure her of skin disease. People come to the church from all over Africa to seek treatment for afflictions like AIDS, cancer and infertility.

Albania

A boy touches a rock in the town of Lac that is believed to heal sickness. The rock's powers are linked to a Christian pilgrim named Shna Ndo, who passed through the town during a pilgrimage to Jerusalem and performed miracles.





Russia

Shamans in the remote Tuva region of Siberia are believed to have the power to see the invisible world and communicate with spirits. In this photo, the shaman, right, works with a client at a clinic in the city of Kyzyl.

India

In some sects of Islam, the verses of the Koran are thought to have healing properties. In Srinagar, the capital of the Indian-controlled section of Kashmir, a spiritual healer treats a man suffering from temporary blindness with prayers and restorative Koranic verses.





Cambodia

A nun holds a terrapin to the mouth of a villager in Kandal province, near Phnom Penh. The animal's touch is believed to cure rheumatism and other bodily ailments.

Sudan

In a refugee camp in Chad, Sudanese refugees prepare the mihaya, a traditional healing drink. Verses from the Koran are written on wooden plates like these with a special ink and pen, the plate is then washed with water, and the holy fluid is drunk by the sick.





Introduction

- A growing body of scientific evidence suggests **faith may indeed bring us health.**
- People who **attend religious services** have a lower risk of dying
- People who **believe in a loving God** fare better after a diagnosis of illness than people who believe in a punitive God.

A skeptic view

- You live longer if you go to church because you're there for the cholesterol-screening drive and the visiting-nurse service.
- Your viral load goes down when you include spirituality in your fight against HIV because your levels of cortisol go down first.

Prof. Richard Sloan

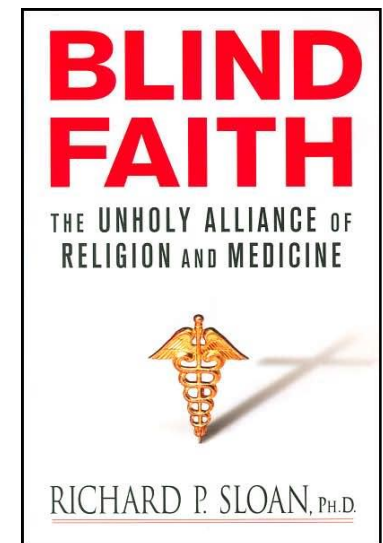
Behavioral medicine,
Columbia University Medical Center.



"Science doesn't deal in supernatural explanations,
Religion and science address different concerns."

Blind Faith: The Unholy Alliance of Religion and Medicine.

- Sloan does not dispute the fact that religion can bring a sense of comfort in times of difficulty.
- Nevertheless believes and proves that there is no compelling evidence that faith provides an actual cure for any ailment.



Positive Impact of Religion on health

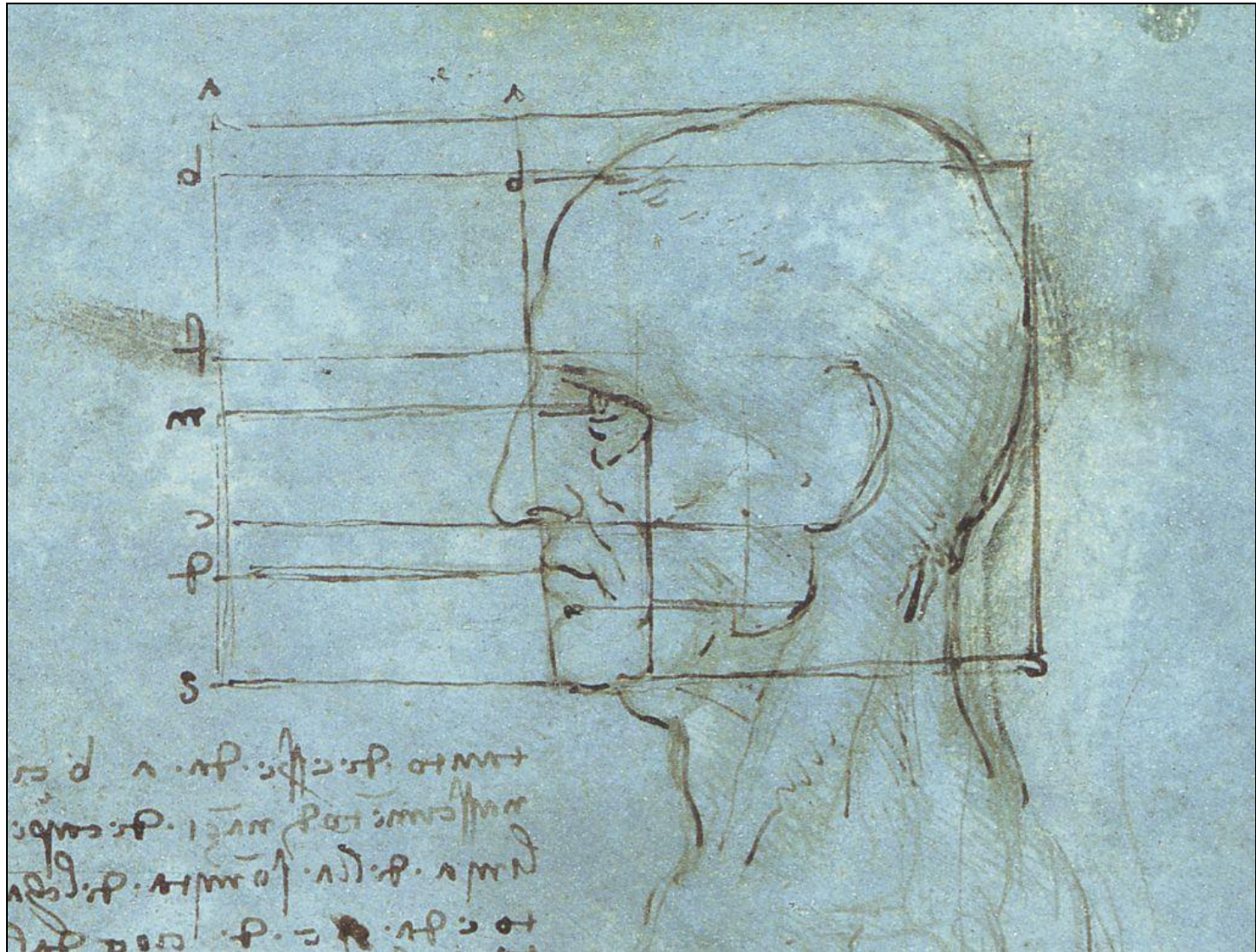
■ Dr. Andrew Newberg

professor of radiology, psychology and religious studies
at the University of Pennsylvania



"The way the brain works is so compatible with religion and spirituality that we're going to be enmeshed in both for a long time."

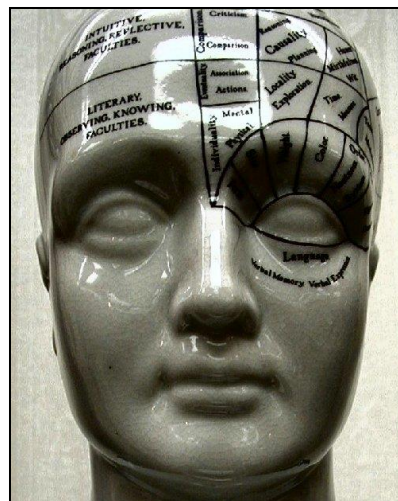
It's All in Your Head



How God Changes Your Brain

Prayer

- Improves memory.
- improve the aging brain.
- Can interrupt the devastating effects of depression, Alzheimer's disease, and a host of stress-related disorders.

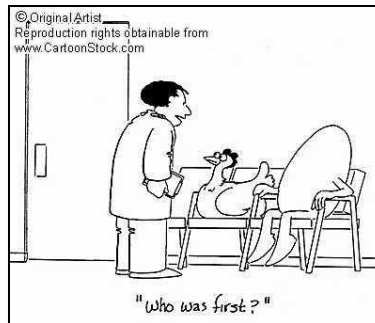


THE NEUROSCIENTIFIC STUDY OF RELIGIOUS AND SPIRITUAL PHENOMENA: OR WHY GOD DOESN'T USE BIOSTATISTICS

by Andrew B. Newberg and Bruce Y. Lee [*Zygon*, vol. 40, no. 2 (June 2005).]

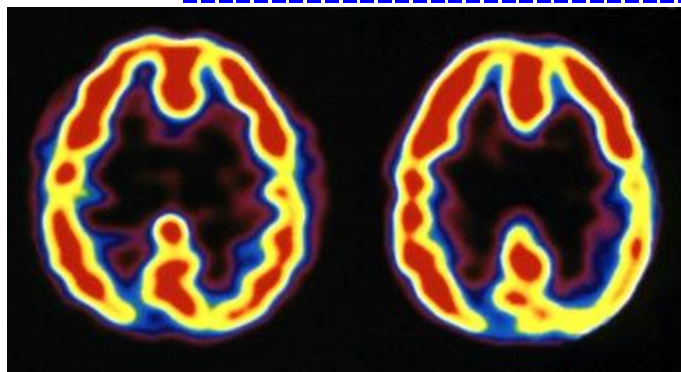
- Pray and meditate enough and some **changes in the brain** become permanent.
- Long-term meditators appear to have **thicker frontal lobes** than non meditators.
- People who describe themselves as highly spiritual tend to exhibit an **asymmetry in the thalamus**, a feature that other people can develop after just eight weeks of training in meditation skills.

Which came first?



Biologically driven to find meaning in our lives

- Frontal lobes govern focus and concentration.
- During very deep prayer, the parietal lobe powers down, which is what allows us to experience that sense of having loosed our earthly binding .



Compared with the brain's normal state (left), brain scans by Andrew Newberg of a buddhist in meditation (right) show decreased activity in the Parietal lobes.

conclusions of the study:

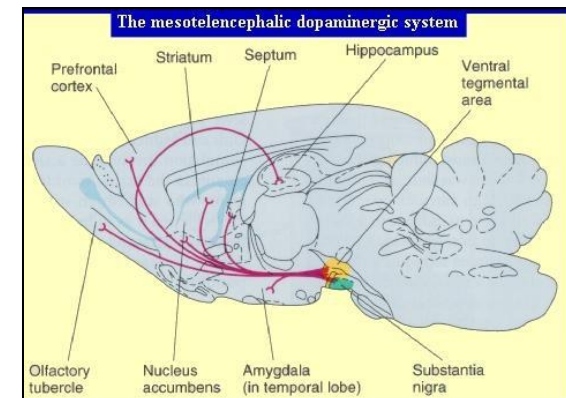
- This field of research is still in its early stages. Many methodological issues face this field.
- Pursuit of such projects may ultimately pay **large dividends** both for science and religion.
- From the religious perspective, the results of such studies may help toward a better understanding of the human experience of religion.
- From the scientific perspective, such research may shed new light on the complex workings of the human brain as well as **the relationship between brain states and body physiology**.
- May contribute to theological and philosophical dialogue.
- Better-functioning frontal lobes help boost memory:
Newberg scanned the brains of people who complained of poor recall before they underwent meditation training, then scanned them again after.

As the lobes bulked up, memory improved.

Reward, Religiosity, and the Brain

The relationship between religiosity and the brain's dopaminergic reward system is a strong one.

- Rapid evolution of the human dopaminergic system has resulted in the transference of earthly reward-seeking into **heavenly reward-seeking**.



The Stargazer Rat



- **hyper-dopaminergic activity has moved this rat's field of vision towards upper space.**

F. Previc (2006) The role of extra personal brain systems in religious activity. *Consciousness and Cognition* 15 (2006) 500-539.

Faith and health overlap

Fasting

- One of the staples of both traditional wellness protocols and traditional religious rituals.
- **purge toxins = purge sins.**

Jews - Yom Kippur.

Muslims - Ramadan.

Catholics - Lent.

Hindus - 18 major holidays.



statue of the Fasting Buddha at the Wat U-Mong temple Chiang Mai, Thailand.

- **Done right**, these fasts may lead to a state of **clarity** and even **euphoria**.

This, in turn, **can give practitioners the blissful sense** that whether the goal of the food restriction is health or spiritual insight, it's being achieved.

Dr. Catherine Gordon:

"There are very real changes that occur in the body very rapidly that might explain the clarity during fasting.

The brain is in a different state even during a short-term fast."

"Biologically, that's not good, but **the light-headed sense of peace**, albeit brief, that comes with it **reinforces the fast and rewards** you for engaging in it all the same.



Endocrinologist
Children's Hospital
Boston.

chemical deception at work

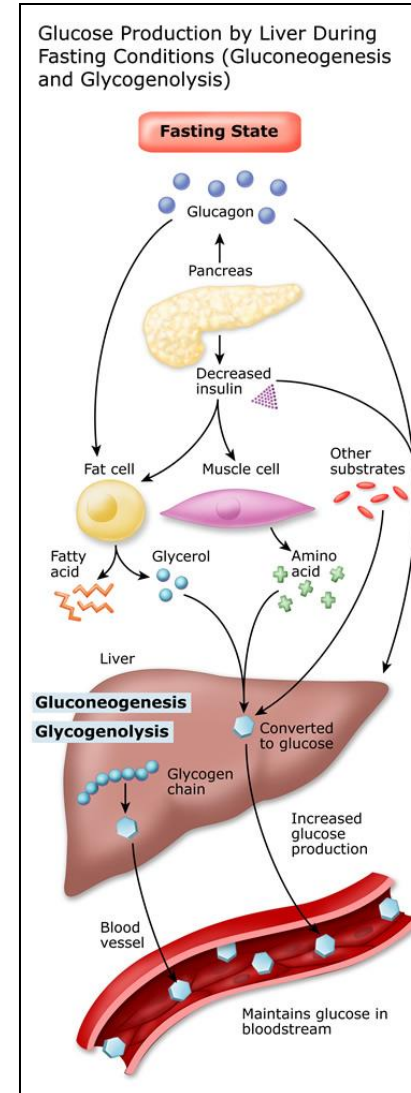


Energy-intensive organ.
Requires a lot of calories.

Food intake is cut
↓
Liver steps into the breach
↓
Gluconeogenesis

The liver's reserve lasts only about 24 hours, after which, cells begin breaking down the body's fats and proteins.

As this happens, the composition of the blood, including Hormones, neurotransmitters and metabolic by-products changes.



Putting to use our spiritual wiring

- Even if there's a scientific explanation for every strand of it, that doesn't mean we can't put it to powerful use.

If one of those uses can make us well, shouldn't we take advantage of it?



How Powerful Is Prayer?



Intercessory Prayer

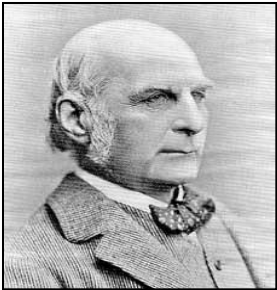
- For most believers, the element of religious life that intersects most naturally with health is prayer.
- Very serious theologians believe in the power of so-called intercessory prayer to heal the sick.
- some very serious scientists have looked at it too, with more than 6,000 published studies on the topic just since 2000.

Intercession, in both [Christianity](#) and [Islam](#), is a prayer to God on behalf of another person.

The nature of intercession in [Judaism](#) is [disputed](#).



God Save The Queen



1822 -1911, Francis Galton

The man behind eugenics and finger printing, reckoned that **monarchs should live longer** than the rest of us, since millions of people pray for the health of their King or Queen every day.

His research showed just the opposite..

No surprise, perhaps, given the rich diet and extensive leisure that royal families enjoy.



God Save Us

- 1988 study by cardiologist **Randolph Byrd** of San Francisco General Hospital found that heart patients who were prayed for fared better than those who were not.
- A larger study in 2005 by cardiologist **Herbert Benson** at Harvard University challenged that finding:
 - complications occurred in 52% of heart-bypass patients who received intercessory prayer and 51% of those who didn't.

- **Richard Sloan**

Nathaniel Wharton Professor of Behavioral Medicine,
Department of Psychiatry,
Columbia University Medical Center:



"attempting to find a scientific basis for a link between prayer and healing is a 'fool's errand' — and for the most basic methodological reason.

**"It's impossible to know how much prayer is received," he says,
"and since you don't know that, you can't determine dose."**

one thing on which both camps agree

It matters a great deal whether subjects
know they're being prayed for.

First described in the medical literature in
the 1780s, **the placebo effect** can work
all manner of curative magic against all
manner of ills.





The placebo effect :

- Parkinson's disease

- Mr. Wright

- Newberg:

"The brain appears to be able to target the placebo effect in a variety of ways".



- There's no science proving that the intercessions of others will make you well. But it surely does no harm — and probably helps — to know that people are praying for you.

Faith and Longevity



Put to the test

If **belief in a pill** can be so powerful, **belief in God** and the **teachings of religion** — which touch devout people at a far more profound level than mere pharmacology — ought to be even more so.

Robert A. Hummer

Professor of Sociology,
Population Research Center,
The University of Texas at Austin



Has been following a population of subjects since 1992:

- Those who never attend religious services → twice the risk of dying over the next eight years as people who attend once a week.
- People who fall somewhere between no churchgoing and weekly churchgoing → fall somewhere between in terms of mortality.

Robert A. Hummer, Richard G. Rogers, Charles B. Nam, and Christopher G. Ellison,
“Religious Involvement and U.S. Adult Mortality,”
”*Demography*, Vol. 36, No. 2 (May 1999), pp. 273– .285

Faith - Cost Effectiveness: meta-analysis study

Daniel E. Hall, MD, MDiv

Department of Surgery
University of Pittsburgh Medical Center
Pittsburgh, PA



Background:

meta-analysis.

Demonstrates association between weekly religious attendance and longer life.

Methods:

Age specific.

Actuarial death rates were modified according to published odds ratios to model the additional – years of life attributable to: (1) weekly religious attendance.

(2) regular physical exercise.

(3) statin - type lipid-lowering agents.

Secondary analyses estimated the approximate cost for each additional year of life gained.

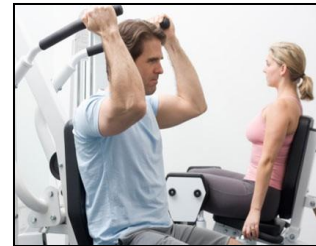
Religious Attendance: More Cost-Effective Than Lipitor?

Daniel E. Hall, MD, MDiv

The Journal of the American Board of Family Medicine 19:103-109 (2006)

Results:

- Weekly attendance at religious services: additional 2-3 life-years.
- Exercise: additional 3-5 life-years.
- Statin-type agents: additional 2.5-3.5 life-years.



The approximate cost per life-year gained:

\$2,000 - \$6,000 for regular exercise.

\$3,000 - \$10,000 for regular religious attendance.

\$4,000 - \$14,000 for statin - type agents.



Conclusions:

- ✓ **Regular religious attendance is comparable to commonly recommended therapies.**
- ✓ **further research is needed**
- ✓ **Doctors and researchers might want to think of religiousness as a demographic factor.**

Not just for the mind

Ted Kaptchuk,
Professor of medicine
Harvard Medical School :



"**Religious belief** is not just a mind question but **involves the commitment of one's body as well**"

Sensory
Tastes
Smells
Sounds
Music
Architecture



The very act of coming into a hospital exposes a patient to sights and smells that are thought to **prime the brain and body for healing**, so may the act of walking into a house of worship.

African-American churches

- have been especially good at maximizing the connection between faith and health.
- Earlier in American history were the only institutions American blacks had the freedom to establish and run themselves

Prof. Ken Resnicow

Health and behavior education
University of Michigan

"The black church is a different institution than the synagogue or mosque or even the white church,
It is the center of spiritual, community and political life."



North Carolina Black Churches United for Better Health

- obesity,
- hypertension
- lifestyle ills

Marci Campbell
professor of nutrition
University of North Carolina



The WATCH Project
(Wellness for African
Americans Through
Churches)

four-year trial: 50 churches with a goal of helping the 2,500 parishioners:

Improving nutrition.

Physical activity.

Regular colorectal cancer screening.

The measures taken:

- Having pastors preach health in their sermons.
- Getting churches to serve healthier foods at community events.



Body and Soul project

The program was so successful that it has been
Renamed and rolled out nationally.

(complete with literature, DVDs and cookbooks)

**In collaboration with: The National Cancer Institute.
The American Cancer Society.**

Joining Hands





Team work for the patient

A woman given a diagnosis of breast cancer.

She is offered the services of an oncologist, a psychologist and a reconstructive surgeon.

why shouldn't her doctor discuss her religious needs with her and include a man of spirituality in the mix if that would help?

Dissociation

- Churches are growing increasingly **willing to accept** the assistance of health-care experts.

- Doctors and hospitals have been **slower to seek** out the help of spiritual counselors.

The fear has long been that:

Patients aren't interested in asking such spiritually intimate questions of their doctors, and the doctors, for their part, would be uncomfortable answering them.

Breaking The Ice

Jean Kristeller

Professor of Psychology

Center for the Study of Health, Religion, and Spirituality

Indiana State University



Oncologists survey

Doctors didn't know how to raise the topic and feared that their patients would take offense.

Patients insisted that they'd welcome such a conversation but that their doctors had never initiated one.

Kristeller, Zumbrun, & Schilling. (1999). "I would if I could:" How oncologists and oncology nurses address spiritual distress in cancer patients. *Psycho-Oncology*, 8, 451-58.

Medical providers called upon to address a wide range of psychosocial issues
Spiritual/existential distress was one of 18 issues covered in the survey.

oncologists (n=94)
oncology nurses (n=267)

- **Oncologists (37.5%) and nurses (47.5%)** identified themselves as primarily responsible for addressing spiritual distress in their setting.
- **Over 85%** of both felt that ideally **a chaplain should address such issues.**
- When ranking spiritual distress as important to address in comparison to 17 other issues, **only 11.8% of MDs and 8.5% of RNs ranked it in the top three** for the poor prognosis vignette, with yet lower values with better prognoses.
- For the poor prognosis, **younger MDs** were **more likely to address** spirituality, anxiety, depression and family distress.
- results suggest that spiritual distress experienced by cancer patients may be under-addressed due to:
 - Time constraints
 - Lack of confidence in effectiveness
 - Role uncertainty.

Patient-centered care

A clinical way of saying doctors should ask questions then clam up and listen to the answers.



Health-Care Chaplaincy

- An organization of Christian, Jewish, Muslim and Zen Buddhist board-certified chaplains affiliated with more than a dozen hospitals and clinics in the New York City area.
- The group routinely provides pastoral care to patients as part of the total package of treatment.
- The chaplains, like doctors, have a caseload of patients they visit on their rounds.
- The chaplains can also refer patients to other care providers, such as social workers, psychologists

Not limited to believers.

In the service of health

Rev. Walter Smith.

president and CEO of the chaplaincy
and an end-of-life specialist.



Smith: "What patients need is a person who can make a competent assessment and engage a patient's spiritual person in the service of health."

Sloan: "I think that a chaplain's job is to explore the patient's values and help the patient come to some decision. I think that's absolutely right."



To conclude

- Few people think of religion as an alternative to medicine.
 - The frontline tools of an emergency room will always be splints and sutures, not prayers.
- Well-applied medicine along with smart prevention will always be the best ways to stay well.

Help comes in a whole lot of forms. It's the result, not the source, that counts the most.

