


merly a biology professor (and Roman's adviser) at Harvard, probed mitochondrial DNA samples of humpback, fin, and minke whales from the North Atlantic. DNA contains a record of genetic mutations that provides a sort of timeline to a species' history. The researchers expected to find a low level of genetic diversity, which would indicate mutations accumulating slowly over time in populations that were relatively small. Instead, Roman and Palumbi found that, despite small modern populations, the whales showed remarkably *high* genetic diversity, with numerous mutations that could have accumulated only from huge earlier populations. Prewhaling numbers were "strikingly large," Roman says. "Certainly the genetic data suggest that we decimated whale populations to a far greater degree than we thought."

Scientists estimate that about 10,000 humpback, 56,000 fin, and 149,000 minke whales now cruise



the North Atlantic. Conventional estimates have put the prewhaling humpback population at around 20,000; fin whales are said to have numbered between 30,000 and 50,000 individuals. But

Roman and Palumbi concluded that up to 240,000 humpbacks and 360,000 fins—about 12 times as many as estimated—lived in the North Atlantic before the harpoons started flying. Past minke whale populations were also underestimated by several thousand individuals, the researchers say.

Such huge numerical differences have enormous political implications. Traditionally, scientists estimated prewhaling populations using historical data from ships' logs and captains' diaries. The International Whaling Commission (IWC), the London-based body that regulates whaling for its 51 member states, used these estimates to shape a 1986 treaty banning commercial whaling. (Iceland, a member of the IWC, resumed the hunt under a special exemption that allows whaling for "scientific" purposes.)

According to the treaty, member nations agreed to ban whaling until whale populations rebound to 54 percent of their prewhaling levels. Some species are approaching that mark, but given the new data, Palumbi has said that certain whale populations may not reach the IWC's 54-percent threshold for 70 years or more—far longer than originally predicted. "Humpback whales are certainly not ready for hunting," says Roman. "Neither are fin whales, for that matter. I think it probably is too early to start hunting commercially again. I think we're forgetting now how close whales came to extinction."

Critics charge that the new estimates are far too high. Others doubt historical

records could be so imprecise. Roman anticipated such criticism: he and Palumbi used very conservative methods in their calculations. As for the accuracy of the logbooks, Roman says that they offer only pieces of the puzzle: "The big question is, how much whaling was done *before* the records were kept? How many records were lost?" The next population studies, he says, will use refined genetic techniques, and they'll revisit the dusty records themselves. "I think there's a future looking at the logbooks again," he explains. "A lot of these species, with the exception of humpbacks, haven't really been looked at."

Roman doesn't predict the return of industrial-strength whaling. While cash-hungry Yankee fleets once nearly annihilated many species, most nations have since lost their taste for whale blubber. The huge mammals now fuel a different industry: tourism. (In Iceland, up to one out of four tourists arrives to go whale watching.) Roman says their study provides a snapshot of an ocean from long ago that he hopes will offer a vision for the future. "The history of whaling really is about exploiting and moving on. This is the way it happened for a lot of other species, too," he says. "When we go out on a whale watch, it's hard to imagine what the ocean looked like a few hundred years ago...and how much better a place it could be given good management."

~NEIL SHEA

JOSEPH ROMAN E-MAIL ADDRESS:
jroman@oeb.harvard.edu

ENTRANCED TISSUE

Hypnosis Heals

LONG CONSIDERED BY MANY the stock in trade of charlatans, hypnosis in fact can relieve the anxieties of patients in the midst of difficult treatment or about to undergo surgery, according to a sizable database of cases. A new study takes those benefits one step further, suggest-

ing that hypnosis can actually speed the healing of damaged tissue.

"The first thing you have to do is get past the myths and misconceptions about clinical hypnosis," says Carol Ginandes '69, Ph.D., clinical instructor in psychology in the department of psychiatry and the lead investigator of the study.

"It's not used for entertainment. There are no Svengali-like figures in power-dominant relationships. It's not a sleep state or something that someone can make you do. It's a state of heightened, focused attention that we can all shift into very naturally."

According to Ginandes, an attending psychologist at McLean Hospital, people can reach this hypnotic state by concentrating on just about anything: a sound, a photograph, the feel of your muscles. Hypnotherapists make appropriate hypnotic suggestions to clients in this receptive

LEAVITT & PEIRCE

Great gifts for the Harvard grad who has everything!



JOHN HARVARD BOOKENDS. Antiqued brass over zinc. 7"H x 24¾"W x 4"D. Over 5 pounds each. \$150⁰⁰ per statuette (plus \$7⁰⁰ s&H), \$295⁰⁰ per pair (plus \$10⁰⁰ s&H). U.S.A.-made exclusively for Leavitt & Peirce.



HARVARD COLLEGE recaptured in this famous tercentenary map by Edwin J. Schruers '28. Painstakingly reproduced on quality "antique" stock (33⅞" x 24¼"). \$39⁹⁵ (plus \$7⁰⁰ s&H), unframed.

We accept VISA, MC, AMEX, and Discover.

LEAVITT & PEIRCE,
120 years at 1316 Mass. Ave.,
Cambridge, Mass. 02138.
617-547-0576 FAX: 617-547-4576

Right Now

frame of mind. "We don't yet understand the mechanisms by which these suggestions are transplanted by the mind into the language of the body," says Ginandes, "but let's say someone is a smoker. When he's in a hypnotic state, I could suggest that perhaps he's going to find himself craving cigarettes less and less over a period of time. If he's ready to quit smoking, that suggestion will be planted at a deep level in his mind, like seeds planted beneath the soil rather than scattered over the top, helping him tap into some useful physical and psychological resources."

Ginandes's first clinical trial of tissue healing took place several years ago, when she tested whether hypnosis could accelerate the healing of broken bones. Reasoning that many fracture victims would be otherwise healthy people, free of treatments or medications for other conditions, she found 12 patients with nondisplaced fractures, screened them to exclude those with pre-existing conditions that might affect bone healing, and divided those who remained into two groups. All the patients received casts and standard orthopedic care, but six also received a series of hypnotherapy sessions, which included suggestions meant to target and accelerate their particular stage of healing, and audiotapes to take home that reinforced the sessions. When the study's radiologist—who did not know which patients had received hypnosis—reviewed the X-rays, the hypnotized patients showed more rapid healing. Six weeks after fracture, the hypnosis



Mesmeric healing, circa the 1790s

group had healed to an extent that would normally take eight and a half weeks.

Ginandes's second study, carried out with Patricia Brooks of the Union Institute and published this year in the *American Journal of Clinical Hypnosis*, took 18 women, all of whom were having medically recommended breast reduction surgery (again, a population of otherwise healthy people who had received no other treatment for their condition) and divided them into three groups of six. The first group received eight hypnotherapy sessions, employing a complex array of suggestions that targeted specific aspects of the healing process at different stages, like decreasing inflammation, repairing wounds to soft tissue, and avoiding scar tissue. The second group had an equal number of sessions with a psychologist who gave emotional support but no hypnotic intervention. The third group received only standard postoperative care.

Nurses examined the surgical wounds over seven postoperative weeks, without

knowing to which of the groups patients belonged. They judged that the surgical wounds of the group receiving hypnosis healed faster than those receiving only supportive attention, who in turn healed faster than the group with only standard postoperative care. Statistically, the differences were so large that they would have occurred by chance less than once in a thousand cases. A team of doctors who studied digital photographs of the wounds made judgments in the same direction, although not at a statistically significant level.

“This is still just the beginning of the story,” says Ginandes. “The bottom line is that the field of hypnosis is lagging in clinical trials far behind what we know to be true clinically. There’s a lot of anecdotal evidence that mind-body healing is a true phenomenon, but the challenge is to prove it in a scientifically acceptable way.”

~JERRY SHINE

CAROL GINANDES E-MAIL ADDRESS:
carol_ginandes@hms.harvard.edu

FLASKS OF CASH

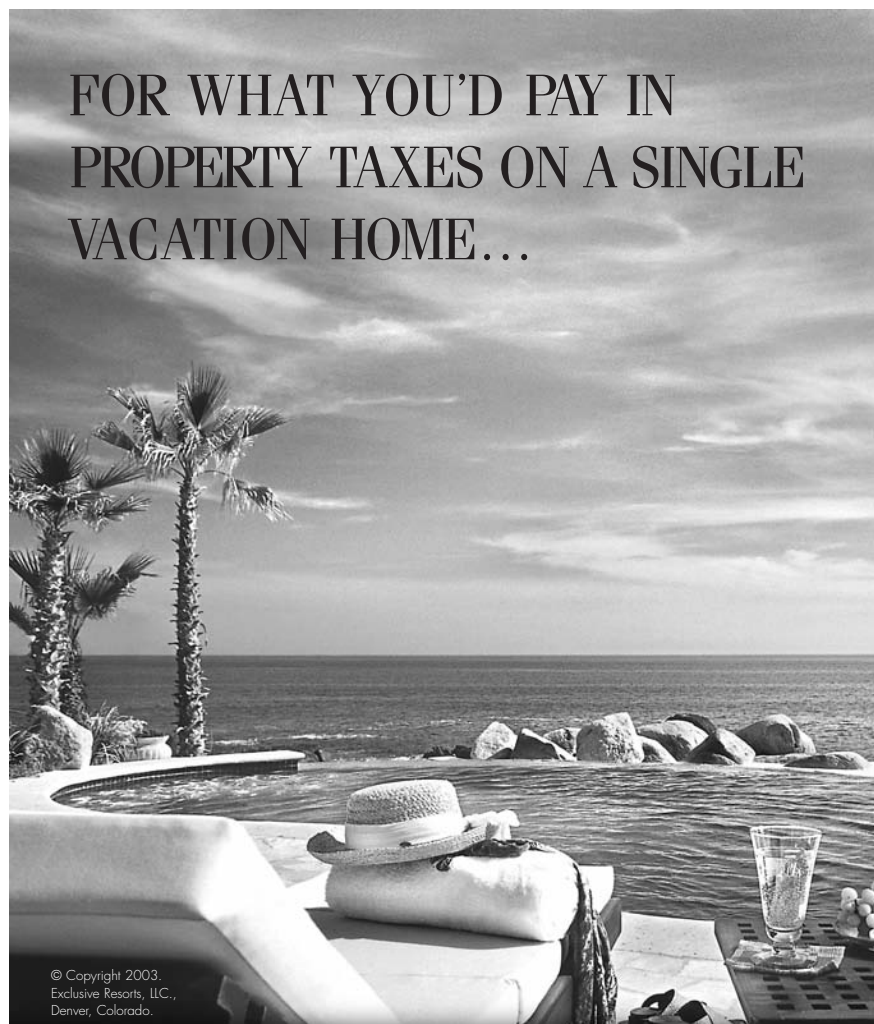
Doctored Research?

THE NEWS, reported in the November 14, 2002, issue of the *New England Journal of Medicine (NEJM)*, sounded startling. C-reactive protein (CRP), detectable by an obscure, cheap blood test that measures inflammation in the body, seemed to predict cardiovascular disease better than cholesterol. Among 28,000 women followed for eight years, the 20 percent whose levels of CRP were highest were 2.3 times as likely to develop cardiovascular illness as those in the lowest quintile. The conclusion: identifying people with elevated CRP could allow “optimal targeting of statin therapy,” since the statin drugs commonly used to lower cholesterol might also help those with high CRP readings. Enthusiastic reports followed in the *New York Times*, *Boston Globe*,

and *Washington Post*, as well as in *Time* and *Newsweek*.

Careful dissection of the research, however, such as that provided in a recent *Nieman Reports* article, “Medical Reporting in a Highly Commercialized Environment,” by clinical instructor in ambulatory care and prevention John Abramson ’70,

M.D., offers a less vertiginous view. The *NEJM* article, for starters, reported only differences in *relative* risk (2.3 times greater), omitting the benchmark of *absolute* risk. It turns out that the lowest-risk women developed about one episode of cardiovascular disease annually per 1,000 women. Hence those in the highest-risk



© Copyright 2003.
 Exclusive Resorts, LLC,
 Denver, Colorado.

You can have an 8th, 9th, 10th...

Exclusive Resorts club members enjoy *guaranteed* and *unlimited* use of dozens of multi-million dollar resort and urban residences in the world’s greatest destinations. Why rent? Why own? Instead, travel whenever, wherever. Luxuriously. Effortlessly. To learn more about membership in this very private club, call or visit us online.



EXCLUSIVE
 RESORTS

A Lifestyle Investment.™

800.447.8988
exclusiveresortsllc.com