Scientists Peer into the Mind's Psi

New evidence supporting the existence of what most folks refer to as telepathy — and what parapsychologists call "anomalous processes of information or energy transfer" — boasts a rare distinction: It passed muster among skeptical peer reviewers and gained publication in a major, mainstream psychology journal.

Suspicion of research into peculiar and unexplained forms of communication, known as psi effects, runs deep among psychologists. For a century, reports of psi and other psychic phenomena have often dissipated in a mist of poor experimental design, wishful thinking about chance statistical results, and outright cheating.

"I used to be a skeptic," says Daryl J. Bem, a psychologist at Cornell University and coauthor of the new report with the late Charles Honorton of the University of Edinburgh in Scotland. "But we met strict research guidelines and the results are statistically significant. We hope the findings prompt others to try replicating this effect."

Bem and Honorton describe studies of the ganzfeld ("whole field") procedure in the January PSYCHOLOGICAL BULLETIN. Honorton died in November 1992, before the article was accepted for publication.

The ganzfeld procedure tests for telepathic communication between a "sender" and a "receiver." Honorton directed 11 studies between 1983 and 1989 that avoided the methodological problems of previous ganzfeld experiments. Bem — also a magician who knows how people can simulate psi effects — visited Honorton's laboratory in 1983 as one of several outside consultants who evaluated the project. Shortly thereafter, the two scientists joined forces.

Honorton first showed volunteers around his lab to make them feel comfortable. A receiver and sender then sat in separate, acoustically sealed rooms. Each receiver had Ping-Pong ball halves taped over his or her eyes and heard a steady humming noise through headphones. A red floodlight illuminated the chamber. After performing relaxation exercises, the receiver described all thoughts and images aloud for 30 minutes.

At the same time, the sender concentrated on a randomly selected target — one of 80 still pictures (including art prints and advertisements) or one of 80 short video clips (such as a scene of a tidal wave).

Receivers later sat at a computer displaying a random sequence of the target image and three decoys. They rated the degree to which each of these images corresponded to those experienced during the ganzfeld period.

The researchers labeled as a "hit" any session in which a receiver rated the target as most like the ganzfeld image.

Bem and Honorton statistically combined ganzfeld data from 11 studies involving a total of 100 men and 140 women. Overall, receivers obtained a hit about every third session. Compared with an expected random hit rate of one in four, this represents a modest, statistically significant effect, Bem and Honorton argue.

One study of 29 music, drama, and dance students yielded a hit rate of one in two, one of the highest reported for a ganzfeld session. Creative or artistic ability may somehow boost ganzfeld performance, the researchers contend.

Belief in psi and an extroverted personality also showed links to increased hit rates by receivers.

The ganzfeld procedure may dampen bodily and external sensations and allow receivers to detect normally weak psi-mediated information, Bem suggests.

No scientific consensus exists to explain how psi-ganzfeld effects could occur, although some parapsychologists propose a mechanism based on quantum theory (SN: 1/11/86, p.28), Bem notes.

"Bem and Honorton's article is very sophisticated statistically and you can't dismiss their findings," holds Robert Rosenthal of Harvard University. "They haven't shown that we go around reading each other's minds, but there's a phenomenon here that requires explanation."

Rosenthal and three other psychologists served as referees for the ganzfeld paper. Each referee recommended it for publication, but two cite lingering concerns about the data.

Although Bem and Honorton conducted "experiments of high quality," the results differ in curious and unexplained ways from previous ganzfeld findings, writes Ray Hyman of the University of Oregon in Eugene, in an accompanying comment.

For instance, only video clips produced significant psi effects in the new studies, but pictures yielded good performance in Honorton's ganzfeld experiments prior to 1983, Hyman says. In another departure from earlier projects, psi effects did not increase when receivers and senders were friends, he adds.

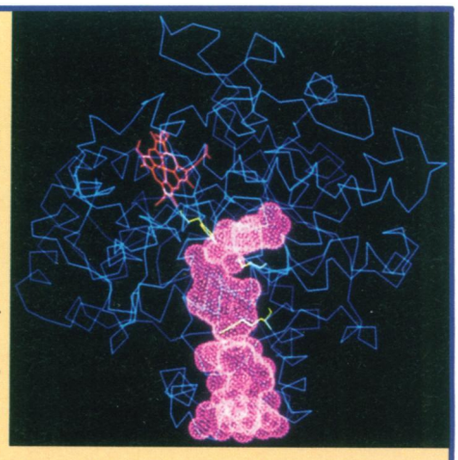
And for some reason, hit rates increased mainly for targets that appeared in more than one session, Hyman argues.

Moreover, of the 11 ganzfeld studies, smaller samples displayed larger hit rates than larger samples, notes Lee D. Ross of Stanford University. "If the effect is real, this is the opposite of what you'd expect," he contends.

Subtle factors influencing the results may still be eluding the researchers, Ross adds. Only a single, large-scale replication can shed light on Bem and Honorton's results, according to Ross.

Four ganzfeld studies, including one directed by Bem, are under way. These samples should be pooled into one large study, Hyman asserts. — *B. Bower*

Picturing aspirin's targets



Patrick J. Loll/NATURE

Researchers have used X-ray crystallography to create for the first time an image of the structure of prostaglandin H synthase-1 (PGHS-1), one of the enzymes that aspirin affects. The finding may help them design an aspirin with fewer side effects, they report in the Jan. 20 NATURE.

Scientists had known that aspirin operates by inhibiting the activity of PGHS-1 and PGHS-2, but they understood little about the structures of those enzymes, says coauthor R. Michael Garavito of the University of Chicago. The enzymes help convert fatty acids into prostaglandins, which are involved in inflammation, clotting, and other processes. Whereas PGHS-1 acts as a housekeeper, regularly controlling stomach acids, for example, PGHS-2 primarily responds to injuries, Garavito says.

The blue line in this photo sketches a skeleton of atoms in the enzyme. The aspirin lodges itself in the cyclooxygenase active site channel (pink), which lies within that skeleton. The aspirin modifies the amino acid serine 530 (located where the yellow-green line meets the channel, below the heme, in red). Aspirin adds new atoms to serine 530, thereby preventing essential fatty acids from reaching it. This destroys PGHS-1, says Garavito.