

I know how you feel—I think

The attempts of a psychotherapist to experience a patient's feelings and perspective can contribute invaluablely to successful therapy. But according to University of Cincinnati researchers, a therapist's opinion of his or her ability to "empathize" with a patient may differ from the opinion of the patient or a clinical supervisor. And the patient's perception of empathy, they say, best predicts how much the patient will improve.

Psychiatrist Noel K. Free and his colleagues followed 59 individuals who received up to 12 weekly sessions of "psychodynamic" psychotherapy in an outpatient clinic. In this approach, therapists concentrate on a patient's current problems and how they relate to past experiences and to the patient-therapist relationship. The 13 therapists in the study were psychiatric residents who regularly discussed cases with two experienced supervisors.

Three outcome measures were obtained at the beginning and end of therapy: The patients filled out a checklist of psychological symptoms, and therapists specified major symptoms based on patients' chief complaints and rated patients on a scale of psychological functioning. After the third and sixth sessions, therapist empathy was rated by patients, therapists and supervisors. Each group was asked, among a number of related questions, whether the therapist appreciated what the patient's experiences meant to him or her.

There was no significant agreement among patients, therapists and supervisors on therapist empathy, report the investigators in the August *AMERICAN JOURNAL OF PSYCHIATRY*. Patients who felt their therapist was more empathic reported a significant reduction of hostility on the checklist at the end of therapy; these patients also had markedly better interpersonal relationships, according to their therapists. But empathy ratings by therapists and supervisors were not associated with any measures of patient improvement.

It appears, say the researchers, that a patient's positive perception of therapist empathy is vital for progress to be made. They were "a little humbled" that the empathy ratings of experienced clinical supervisors were not related to patient improvement. Supervisors may have been swayed, say Free and co-workers, by residents who were able to relate most comfortably to them during clinical presentations.

The investigators suggest that patients' perceptions of therapist empathy might best be plumbed by using audio- or videotapes of sessions to supplement presentations and clinical notes.

Therapy for posterity

Psychiatrist Norman E. Zinberg of Harvard University recently showed a videotape of himself interviewing a patient to a conference of several hundred people. Almost all of them, he says, wanted more depth from the interview and believed they would have done a better job. This ego-thumping experience got him to thinking: What is the difference between psychotherapy behind closed doors and therapy open to inspection?

The awareness that an interview will be seen or heard by others, notes Zinberg in the August *AMERICAN JOURNAL OF PSYCHIATRY*, tends to shift a therapist's focus from the patient to a concern about how the session will look to an audience. The suspension of ordinary social rules that takes place in therapy can be sidetracked, he says, if the potentially public nature of the situation provokes defensiveness in the patient and therapist. Even in group therapy, videotaping can be intrusive and disorienting, notes Zinberg.

Taped interviews, he observes, are approximations of the "real thing." To assume that public and private interviews are the same, says Zinberg, "would sharply reduce the value of taping as a teaching device and would invalidate it for research purposes."

Canteen for a young lizard

Some desert lizards are born equipped with a temporary supply of fresh water, report scientists at the University of Arizona in Tucson. During research on lizard reproduction, Carol A. Beuchat noticed that if the 2-inch-long baby "Yarrow's spiny lizards" were held a little too tightly they would leak a large drop of clear fluid. She was surprised, because the adult Yarrow's spiny lizards have no urinary bladder and excrete a nearly dry form of waste. Beuchat, David Vleck and Eldon Braun have subsequently discovered that baby lizards of this and other desert species have an internal sack, or bladder, containing pure water. By a month after birth this bladder shrivels up and becomes a vestigial organ in most species.

The water in this newly discovered "canteen" comprises about 10 percent of the newborn lizard's weight. (Unlike most lizards, Yarrow's spiny lizard bears live young.) Vleck says, "... the bladder is essentially a reservoir, and the babies use its water [at least in the laboratory] during periods of dehydration to maintain blood and other body fluids at normal volumes and concentrations."

The role of this bladder in the lizard's natural environment has still not been determined. Vleck says that baby lizards, which have a high surface-to-volume ratio, tend to dry out faster than do adults. But he thinks it most likely that the bladder evolved originally as a means for reptilian eggs to promote water uptake from the soil. Water moves across the shell of a reptilian egg from the side with the higher water concentration to the side with the lower concentration. But if the embryo could temporarily hide some of its water in a canteen, under dry conditions the egg could continue extracting water from the soil, rather than allowing the water to flow out of the egg.

"There is an advantage to having your 'canteen' full at birth," Vleck says. But he argues that its early withering is advantageous to the adults, since a full canteen would be likely to slow a fleeing lizard.

Animals at the hydrothermal vents

Eight years ago, biologists were startled by the discovery of large communities of animals, including clams, crabs, mussels and worms, at hydrothermal vents deep under the ocean at the Galápagos Rift (SN: 4/30/77, p. 279). These animals are nourished not by photosynthetic food sources but by microbes that efficiently use chemicals modified by geothermal energy. Since then at least four additional vent communities have been found. So far, more than 30 newly discovered species in 16 previously unknown families have been observed at the vents. J. Frederick Grassle of the Woods Hole (Mass.) Oceanographic Institute describes in the Aug. 23 *SCIENCE* similarities in the distribution of animals at vent communities in the Pacific Ocean and in the Gulf of Mexico, including the intriguing "co-occurrence" of a clam, a mussel and a vestimentiferan, or tube, worm at widely separated sites.

The vent communities are at least 200 million years old; yet the life span of a vent is at most a few decades. Therefore the animals must repeatedly colonize new vents tens and occasionally hundreds of kilometers away. "Under these circumstances, one would expect that there would be strong selection for rapid growth, the ability to produce many offspring, and an efficient means of dispersal," Grassle says.

He reports that the rates of metabolism, growth and fecundity are higher in organisms living at the vents than in other deep-sea organisms. The metabolic rates of the largest vent animals are similar to those of shallow-water relatives, and many times higher than those of deep-sea relatives. "Studies of the vents," Grassle says, "have laid to rest the idea that constraints of pressure and temperature alone limit the activities of deep-sea organisms."