

## IN AWE OF THE HEART

Paul Pearsall, PhD

**Paul Pearsall, PhD, is an adjunct clinical professor at the University of Hawaii at Manoa, Honolulu, and a member of the Board of Directors of the Hawaii State Consortium for Integrative Medicine. He has authored several books, including *The Heart's Code* (New York: Broadway Books; 1998) and *The Last Self-Help Book You'll Ever Need: Repress Your Anger, Think Negatively, Be a Good Blamer, and Throttle Your Inner Child* (New York: Basic Books; 2005).**

*The heart of creatures is the foundation of life, the Prince of all, the sun of the microcosm, on which all vegetation does depend, from which all vigor and strength does flow.*

—William Harvey, MD, 1628

### TAKING A HEARTFELT MOMENT

At the highest level of delight, yet on the edge of terrible dread, is our most neglected but transcendent emotion—awe. I feel awe for my heart whenever I take the time to feel it count out the cadence of my being, a slower and steadier rhythm than that which characterizes the ever-accelerating pace of our hyperculture. Like the rest between two musical notes, the silence between my heart's contractions reminds me of how little time I seem to have for quiet calm contentment in my daily life and that I have too much on my mind to pay attention to what's in my heart. That intermittent cardio-silence also results in my dread that hearts always end up in a painful, permanent silent stillness like that I recently experienced, when my young son Scott's heart stopped beating forever.

That's how awe feels—an overwhelming sense of the highest fascination and deepest fear happening all at the same time. I am fascinated by the fact that, if I look carefully and long enough, I can actually see my heart beating anywhere on my body as its energy drums out to connect with other hearts, but I feel terrible fear for the times when that cardio-connection is no longer possible. I feel guilt for having taken my own and other hearts for granted, viewing them as pumps to be maintained by diet and exercise with no regard for their loving energy. I know that the heart generates energy that travels within and is stored in our every cell, but it is also sent outside our bodies as a form of information that—because energy cannot be created or destroyed—exists forever. (For a complete discussion of energy as information, see *The Living Energy Universe*. Charlottesville, Va: Hampton Roads Publishing Co; 1999.) I'm in awe that I never have to tell my heart what to do and that it always does its best to

adjust to whatever my busy brain asks of it, even if it sometimes puts its own life in jeopardy trying to keep up with what my brain asks of it.

As it often does, my awe brings tears to my eyes as I reflect on how I've allowed my busy brain to exploit and abuse my heart. If I sit and connect long enough with my heart, I'm in awe when I realize that I've been going through most of my life under the direction of only half of my mind, my selfish brain that too quickly mistakes an intense personal life for a shared and meaningful one.

I have the chills and tears that come with awe as I remember when my wife and I first heard our son Scott's heart beating to announce his life, and I sob often now when I can't avoid the ghostly image of that terrible night when we found our son with his heart stopped forever. Our son died of a broken heart left struggling in futility to send its info-rhythm past the filter of other people's busy brains and into their hearts. His heart tired of the effort to get past narrow-minded brains that had time only to see his cerebral palsy and not his loving heart. Congenital brain damage to an area in his brain no larger than the head of a pin resulted in many people seeing only the result of the damage in Scott's brain and not the loving cardio-wisdom he had to offer. I'm in awe of Scott's heart's effort to connect with other hearts and in deep grief that Scott's heart died trying to make that connection. I wonder how many hearts are killing themselves right now in that same frustrated effort.

Research and personal experiences have made me realize that our brain is wrong when it thinks that it is our mind. We have surrendered too much of our life to the brain-half of our mind, and whether that highly esteemed brain is willing to acknowledge it or not, it is only a partner with its heart in forming the mind that directs our life and gives it meaning. If you will take some time today to ask your brain to be quiet for a few moments while you more fully connect with your own and others' hearts, I think you might be as much in awe of the heart as I am.

### A TRIBUTE

This essay is a tribute to the heart, but it is also a warning from a scientist who sees the data about the sentient heart being ignored. It's a call from a grieving father who witnessed what happens when a heart is ignored, neglected, abused, and exploited. Despite the many metaphors we use to refer to our heart and phrases such as "my heart goes out to you" or "I feel a heart-to-heart connection," or "my heart aches for you," do we really believe what we're saying, or are these just stained-glass rote platitudes we use when the brain is not able to find words to

express what the heart is feeling? Do we really honor our heart and think that it a source of loving energy that can “go out” to others? Science shows that the heart is sentient and a source of this energy, but we don’t often behave in terms of these facts of life. We’ve become too cerebral-centric to pay attention to what our metaphors about the heart are trying to tell us about this miraculous rhythmic organ.

Research shows that the heart does in fact literally think, feel, and remember; is formed and nurtured; by and connects with other hearts. The heart’s thousands of neurons work exactly like the ones in our brain and communicate with our brain’s neurons every moment of our existence. As poets and indigenous cultures have been telling us over the millennia, the heart does think and feel and send out energy. It is to the detriment of our health, happiness, and the world that we moderns have become increasingly heartless.

So this is my tribute to the heart. It may sound too personal, romantic, “soft,” or “irrational” to the brain and even cause the brain to reject this tribute as not practical or “real,” but that’s because the heart’s way of thinking is so different from that of our brain. The brain is a fast thinker, with a primary mission of enhancing itself and the body on top of which it sits. The heart thinks slowly and connectively and prefers to contemplate beauty, love, and other hearts not from the “top” but from the center of our being. The brain is consumed with identifying and protecting what it sees as “boundaries,” but the heart sees all boundaries as illusions of consciousness.

#### HEART TRANSPLANTATION AND CELLULAR MEMORIES

I share my findings on the awe response as elicited by the heart because I am now more in awe of the heart than when I first began to study the cases of heart transplant recipients who reported receiving memories, behaviors, dreams, habits, and food and other preferences from heart donors they had never met and could never have known.<sup>1</sup> The startling cases Drs Gary Schwartz, Linda Russek, and I published indicated an above-statistical chance correlation between heart recipients’ reports regarding their feelings about their donors and reports from heart donors’ families, and we were left in awe of the mysterious powers of the heart.

As an example of the mysteries about the heart and why I pay tribute to it here, I share one of the cases from my interviews of donors’ families, transplant recipients, recipients’ families, and medical staff members. Considerable controversy arose when we first shared our findings regarding cellular memory and transplantation, and the controversy continues today. The ideas that any cells other than those in the brain or the immune system could learn, store memories of what they learned, and pass them on to another body have continued to bother confident brains unwilling to honor psychologist William James’ caution that, “if you wish to upset the law that all crows are black, you musn’t seek to show that no crows are; it is enough if you prove one single crow to be white.”<sup>2</sup> Gary, Linda, and I feel we have encountered many white crows and are in awe of what questions they

raise and what they have to teach us. Here’s just one “white crow” excerpted from my many audiotaped interviews. I leave it to you to assess the meaning and significance about the heart based on the following verbatim reports.

Here is case 9A-2001, as published in several different journals. The heart donor had died from a fall while reaching for a Power Rangers toy sitting on the cement ledge just outside a high hotel railing. The recipient was a 5-year-old boy with an uncorrectable septal defect and severe cardiomyopathy.

**Donor’s mother:** *When I met the recipient family and little Daryl (the recipient) at the transplant meeting where donor and recipient families meet, I broke into tears and—if my husband hadn’t of caught me, I would have fallen to the floor. I saw it right away. Daryl smiled at me exactly like Timmy (the donor) always did. He had a very crooked smile and sort of looked at me sideways as if he was teasing me. It was that exact slanted smile. We sat and talked with Daryl, and it was uncanny how I could feel in my own heart my son’s heart seeming to call out to mine. Like our dog wags her tail when she recognizes us, my heart began to race with glee. I asked if I could put my head to Daryl’s chest and listen and I could have done that for hours. My son’s heart and mine seemed to fall into sync and Daryl loved it and kept showing the slanted smile the whole time. What Daryl (the recipient) told left us in total awe.*

**Heart recipient:** *I gave the little boy who gave me his heart a name. I called him Timmy and I could tell he was just a little kid younger than me. I could feel that I had been hurt real bad by falling a long way. I can sometimes still feel the thump that killed him. He liked Power Rangers a lot like I used to, but he was probably too little to know what they really are. Sometimes at night I get woken up by my whole body jumping and I can feel Timmy’s heart like it felt when he fell—like a heavy thump. I wonder what happened to my old heart. It was broken but it did its best to take care of me and I feel sorry for it sometimes and I cry.*

**Recipient’s father:** *We never really knew until today how old Daryl’s donor was. We knew he had fallen, but that’s all. I guess Daryl got Timmy’s age right by a lucky guess and they needed a small child-sized heart for the transplant. I’ll never know how he got his donor’s name right. Maybe it’s just chance because Daryl used to watch Tim the Tool Man Taylor on the television show Home Improvement. I do have to say that the crooked smile Daryl started having after his transplant always did bother me a little and now I can see where he might have gotten it from the donor. I don’t know how, but I’m sure he did because he never smiled that way before.*

**Recipient’s mother:** *Are you going to tell them the real “Twilight Zone” thing? Daryl used to love collecting and playing with his Power Rangers. When we brought him some after his transplant, he threw all of them in a box and said he never wanted to see them again. He hasn’t looked at them again.*

I felt awe when I first heard this story, and I felt my heart racing as if it was a child trying to point out something it found remarkable and felt that everyone just had to see. I still feel that awe for the strange but real power of the heart, and it increases daily. As I've come to focus on the awe response itself, I am learning that awe happens when something occurs that causes our heart to somehow manage to free itself from the dominance of our brain and to cause us to feel profoundly connected with the world in new, challenging, and sometimes frightening ways.

## HEARTS AND POWERS

The heart is hundreds of times more electromagnetically powerful than the brain. It takes dozens of carefully and specifically placed electrodes to try to capture the energy of the brain (an electroencephalogram, or EEG) and even then, accuracy and reliability of measurement can be a problem. However, only a few electrodes placed anywhere on the body can measure the heart's energy. Leave just one wire dangling free when trying to conduct an EEG and the test is ruined, but the heart's energy might even be picked up and measured by the exposed unattached lead.

In human development, the heart comes first. Before the 25th day of life and long before there are any signs of the brain, a swirling, pulsating, energy vortex begins to form in the embryo. In a few hours, the tiny mass of energy morphs into a tiny clump of cells that begin to beat in unison and to establish the rhythm of our life that will resonate until the day we die. The heart's tissue will eventually become the same tissue that makes up the brain, so the heart comes into existence long before the brain and in a sense gives birth to it. Before the brain is formed, the tiny new heart is already pumping blood throughout the fetus.

Unlike any other muscle in our body, unless it is afflicted with disease, the heart muscle doesn't seem to weaken much with age. The heart's relative physical strength surpasses that of all known mechanical pumps that the smartest brains have been able to construct. Place a heart cell next to another heart cell, and they will eventually beat together in a shared rhythm. Place several heart cells together, and they will eventually arrive at a shared rhythm. Hearts near one another can influence one another's rhythm, and although I've never placed two brains side by side, I doubt that they would pay much attention to one another if I did.

Even if the brain dies, the heart can keep beating. A heart removed from the body remembers how to beat and can continue beating for several minutes on its own. The heart can "live" without the brain, but whether it is willing to acknowledge it or not, the brain can't live without the heart. You would think that fact alone would cause the brain to show the heart a little more respect.

The heart's energy can be measured from several feet away from the body, so when people say they are connecting "heart to heart," they are being energetically accurate. The heart transports about one hundred gallons of blood per hour through a cardiovascular network that, if extended, could be wrapped around the earth two and one half times. A cardiologist in Japan

recently wrote to me saying that his research shows that the heart acts not like a pump at all but more like a throbbing "swing" that uses the energy of the cells passing through it to "slings" blood cells through the body like a loving parent swinging his or her child. Regardless of whether this cardiologist is correct, it is clear that the heart more than holds its own when it comes to energetic comparisons to the brain.

## GENTLE HEART, SELFISH BRAIN, LOVING MIND

I was recently honored by being invited to speak at the first Heart-Brain Summit at the Cleveland Clinic June 15-17, 2006. Due to the creative genius, boundless energy, and limitless generosity of Dr Earl Bakken, the founder and now director emeritus of Medtronic, Inc, Minneapolis, Minn, the Cleveland Clinic has established the Heart-Brain Institute. The Institute's mission is to investigate issues like those I've raised here about the heart's communications with the brain. Its focus is on the physiological and molecular relationships between the heart and the brain and to translate these findings into strategies to improve the treatment and prevention of heart disease.<sup>3</sup>

Among rigorously researched papers dealing with topics like the neurophysiology of "heartache," cognitive and emotional changes related to heart disease and surgery, broken heart syndrome, depression and heart disease, the psychophysiology of negative emotions and how these feelings can literally make us "sick at heart," my contribution was to suggest a field of contextual cardiology based on the idea that we have an interpersonal cardiovascular system that we share with those around us.<sup>4</sup> I based my ideas on the new field of interpersonal neurobiology, which shows that our interactions with other people have a profound impact on the development, structure, and function of the brain. (The founder of this field and a leader in the integration of neurobiology and affective neuroscience is Daniel J. Siegel, MD. See his book, *The Developing Brain: How Relationships and the Brain Interact to Shape Who We Are*. New York: Guilford Press; 1999.) I proposed that like the brain, the heart is made to be influenced by our interactions with other people and that studying hearts interacting with one another rather than only the functioning of an individual heart could be a productive research and clinical approach to cardiology.

I shared one recent example of a contextual cardiology approach. It is a study of 150 married couples aged 60-70 years with no prior history of heart disease. The study took place from 2002 to 2005 at the University of Utah.<sup>5</sup> Two days after analyzing a 6-minute sample of communication about a topic about which the spouses disagreed, the researchers performed computed tomography of the spouses' chests. The more hostile the communication, the more likely calcification of the arteries showed up on the scans. More specifically, hostile words resulted in more calcification in women's arteries but not in the hearts of their spouses. The use of controlling words during disagreements led to calcification in men's hearts but not women's.

While more research is needed to clarify what was going on in these couples and why the effects of conflict-oriented commu-

nication differed for men and women, this study indicated that a “hard” marriage can lead to hardened arteries. I proposed the idea of mutual electrocardiography to assess patterns of heart interactions within couples and taking “communication” samples from couples as a part of cardiovascular workup. I suggested taping patients to assess the ratio of personal pronouns (“brain talk”) to interpersonal pronouns (“heart talk”).

### THE “IN BETWEEN”

In summary, I remind you that the brain is not the mind. I suggest that what we call “mind” is actually a manifestation of the flow of energy between the brain and heart, and that our heart-brain mind is continually developing and influenced by all of our interactions with everyone and everything.

Throughout my career as a researcher and clinician, I’ve often wondered if we’ve been too quick to defer to the brain and to accept that whatever problems and strengths we have rest “within us.” I’ve come to think that all suffering is due to some form of disconnection on some level and that we should be looking “between” and not “within” for the path to a healthier and more loving life. The heart is the organ that reacts quickly and intensely to events that take place at the “in between.”

It’s my view that we are in desperate need of a science of everyday living. Despite the more than 500 forms of registered psychotherapies today, we’ve largely failed to find that science. (I discuss this issue at length in my book due out in January 2008 titled *500 Therapies: Discovering a Science of Everyday Living*. New York: Basic Books; 2008.) I think therapy often deals primarily with what the brain has to say, and less attention has been paid to the heart’s view of things. The essentially self-assertive brain can literally end up “breaking” the much more sensitive heart and by exploiting it, can end up killing the golden goose that helps sustain it and can enlighten it.

We have two thinking, brilliant, wise organs, each with its own cognitive style and life-sustaining imperative. I suggest that it would be helpful in our research, therapy, and personal and interpersonal lives to draw from the research in fields like neuro-cardiology, cardio-immunology, interpersonal neurobiology, affective neuroscience, and energy cardiology that are showing not only that we are wired to connect, but to connect not just brain to brain but heart to heart.

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