

The Physics of Emotion:

Candace Pert on Feeling Go(o)d

By Joshua Freedman

Even before she was Chief of Brain Biochemistry at the National Institutes of Health, Candace Pert made a breakthrough discovery that changed the way scientists understand the mind-body connection. She found the opiate receptor, the mechanism by which a class of chemicals (peptides) alters the mind and body. Her research led her to an understanding of the way emotions function as a regulatory system in the body. Since that discovery she's been focused on developing an AIDS treatment using peptides, first at the University of Georgetown Medical Center, and now as scientific director of RAPID Pharmaceuticals (see www.candacepert.com for more).

Because of her work on emotions, Dr. Pert was featured in the film, *What the Bleep Do We Know*, and frequently speaks on the role of emotions in the mind-body. Pert's work helped shift the paradigm from "emotions as neuroscience" to "emotions as biology." In her new book, [*Everything You Need to Know to Feel Go\(o\)d*](#), she's taking the science of feeling a step further to present "emotions as physics."

Emotions, Pert explains, are not simply a chemical in the brain. They are electrochemical signals that affect the chemistry and electricity of every cell in the body. The body's electrical state is modulated by emotions, changing the



world within the body. In turn, Pert finds emotional states affect the world outside the body.

"I've always kind of known that the energy you emanate from within attracts the situations and people that you need," Pert explains. "I've always known that but wasn't quite walking my talk. You would have thought I could have figured this out by now. But it's really only in the last few months since the book came out that I've been able to really live this."

I asked Pert to explain how emotions have such a powerful effect. "We're not just little hunks of meat. We're vibrating like a tuning fork -- we send

out a vibration to other people. We broadcast and receive. Thus the emotions orchestrate the interactions among all our organs and systems to control that.”

As Pert explained in her earlier book, *Molecules of Emotion*, neurotransmitters called peptides carry emotional messages. “As our feelings change, this mixture of peptides travels throughout your body and your brain. And they’re literally changing the chemistry of every cell in your body.”

This is all mainstream science, but it doesn’t explain how one person’s emotions can affect another person and the larger world. “You’re still thinking about this as chemistry,” Pert chides. “Of course it is chemistry, but it’s also physics and vibrations.” Neurotransmitters are chemicals, but they carry an electrical charge. The electrical signals in our brains and bodies affect the way cells interact and function.

“You have receptors on every cell in your body. They actually are little mini electrical pumps.” When the receptor is activated by a matching “molecule of emotion” the receptor passes a charge into the cell changing the cell’s electrical frequency as well as its chemistry.

Pert says that just as our individual cells carry an electrical charge, so does the body as a whole. Like an electromagnet

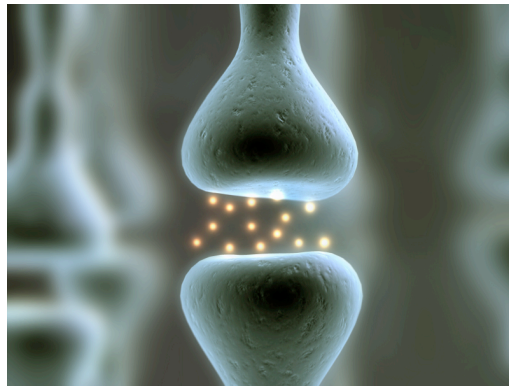
generating a field, Pert says that people have a positive charge above their heads and a negative charge below. “So we’re actually sending out various electrical signals – vibrations.”

“We’re all familiar with one kind of vibration: When we talk, we send a

vibration through the air that someone else perceives as sound. As I explain in the book, we’re also sending out other kinds of vibrations. It’s a basic law of physics that when you are close to an energy source it has a greater effect and that diminishes as you move further away. But when you are far away there is no effect.”

“It’s not something you can say in 25 words or less. It is a whole new paradigm shift that basically leads you to realize you’re not alone. You are connected to everybody else. Your emotions are key. And you are leaving a wake, changing the world around you in a huge way.”

Pert’s earlier book, *Molecules of Emotion*, is part science, part autobiography as she tells the story of her process of discovery and learning. *Everything You Need to Know to Feel Go(o)d* follows a similar vein, with the



Electrochemical messages are passed between brain cells. Similar signals are passed to every cell in the body. Each is studded with “receptor sites,” a kind of “mail box” for these electrochemical messengers.

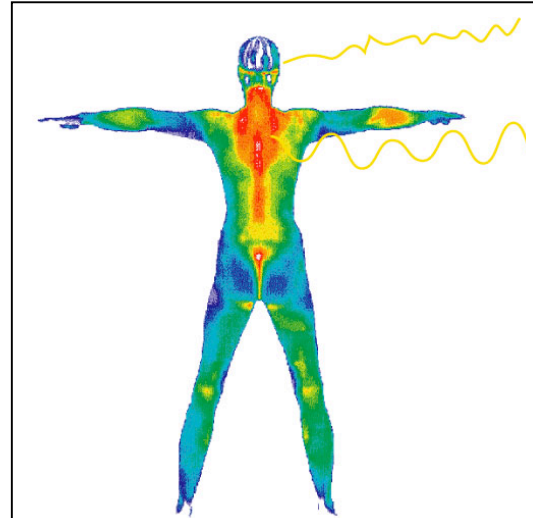
stories of personal growth and scientific discovery woven together. Pert said that one theme of the book is her relationship with her son Brandon and the challenge of being a mother while driven to complete the work on the AIDS drug she invented called Peptide “T.”

Brandon happened to call during our interview with wonderful news about a new job. Pert offers this as an example of how an emotional change affects other people.

“In a way, Brandon was a kind of victim of my work, of me putting Peptide “T” ahead of him. He recently graduated from Cal Arts and this has been going on since he was in the first grade. I remember going into his second grade classroom to talk about how to cure AIDS.”

Perhaps all scientists who break new ground have to be driven, even obsessed with their work. For much of her career Pert struggled to balance the drive to discover with her genuine wish to be a good parent and partner, which led her to try and be controlling at home.

In the last few years working on the book and meeting wonderful coaches and people involved in personal growth, Pert says she’s turned a corner. “I learned to just be more in balance with the kids, all three of them. And I hope I’ve stopped being a typical overbearing Jewish mother.” As a result, Pert says, she and Brandon have been able to communicate in a way that enabled him to ask for help finding the new job.



The molecules of emotion, a kind of neuropeptide, change the chemistry and electricity of every cell in the body and mind. Feelings literally alter the electrical frequencies generated by our bodies producing a nonverbal communication.

Pert says her biggest change came from practicing the ideas she writes about. “I was waiting for the book to come out. In a way I thought that the whole world would change when the book came out. Everyone got to read it and they would get it. They would understand about Peptide “T” and they would change.”

Yet for years Pert has been espousing that real change comes from the inside out – that the goal isn’t convincing others, but fully living the idea. “I’m just completing that step. It’s still a journey and I need to keep growing, but this is a major leap. Maybe it’s just what happens with a book. I wrote about how I wanted to be, so it became like the future talking back to me. So the book came out and now, finally, I am the person I was pretending to be when I started writing.”

The book’s title, *Everything You Need to Know to Feel Go(o)d*, makes an

implicit link between feeling good and connecting to God. Pert admits this is an unusual view for a hardcore scientist. “I’m mad at all these rabid atheist scientists who write books where they’re calling God a delusion. Any good scientist knows that it’s almost impossible to disprove anything. You can only prove something.” At the same time, Pert acknowledges that as a scientist, the metaphysical makes her uneasy.

“My ‘scientific persona’ is very strictly logical. So I do question the supernatural. It makes that part of me twinge. Yet in working on this AIDS vaccine, both worlds came together, my scientific world, and a world where amazing things happen. It’s just impossible to think that it is an accident that I was able to make this invention. It’s just totally amazing to me. I still can’t get over the miracle of it.”

At a neurological level, Pert continues, the feeling of being connected with God, of feeling blessed, is an important part of the brain. “Blessing and bliss come from the same root. We are hard wired to be in bliss. It’s normal and it’s natural. There is a straight

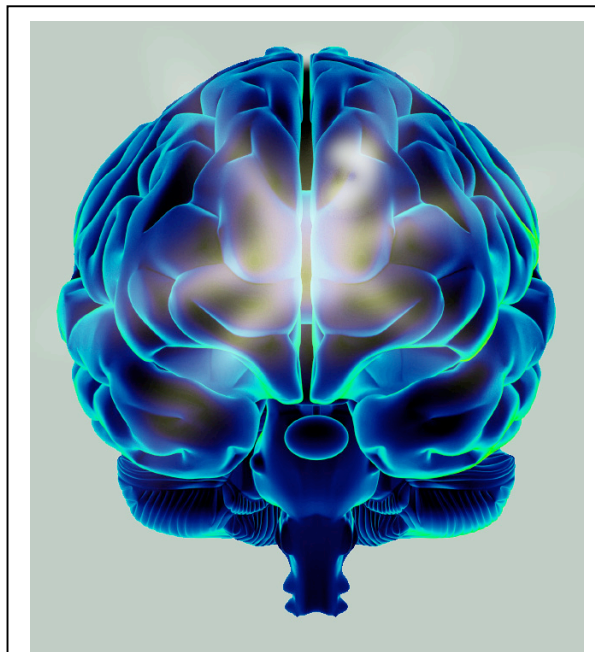
evolutionary argument for this function -- any creature that could not experience bliss would have just died and become extinct 200 million years ago.”

The “bliss response” is closely connected to Pert’s original work on the opiate receptor. Just as the receptors for other neuropeptides trigger a cellular response, opiate receptors pick up the presence of a neurotransmitter for euphoria. The naturally occurring “bliss chemicals” are called endorphins, and they are released in the brain and body in response to emotional states and to physical activities (including exercise and nursing).

Pert says the way endorphins work is evidence of bliss as an evolutionary necessity. “That’s why endorphins are

such highly conserved molecules. It’s the same in simple one-celled creatures and in humans. In the new book I talk about the evolution of the opiate receptor and how it’s in our frontal cortex, the most advanced part of our brains.”

“It’s like we’re designed to make choices around pleasure. The very highest, most intelligent part of our brain is



The prefrontal cortex is responsible for complex, evaluative decisions. This part of the brain is loaded with opiate receptors – so structurally, our most sophisticated reasoning is linked to bliss.

drenched in receptors to make us use pleasure as a criterion for our decisions. So it's okay to feel good – God is good.”

While it's clear that the “bliss receptors” are centered in the prefrontal cortex, the part of the brain that makes evaluative and complex decisions, there isn't a clear reason.

“Scientists can never ask why. They can only ask ‘what’ and ‘how.’ But we know that the vibration in these receptors mediates, or leads, to the whole organism feeling bliss. And then I talk in the book about how that endorphin vibration is really the bliss of union and divine union.”

So when we create that kind of resonance internally, we are in line with that divine self. True bliss represents an optimal state of functioning. “This state is the natural function, but our society interferes. You don't have to teach this to native peoples. Most of us have lost touch with that reality. Most of us seem

to be locked in a grim struggle constantly rushing off to the next thing. So while it may be natural to be in bliss, we have to learn again to feel our natural state of bliss, to feel the spiritual nature of everything around us, every moment. This doesn't have to do with church. It doesn't have to do with whether you were bad or good. It's about feeling good.”

Faced with an uphill struggle to finish the Peptide “T”-based vaccine, test it, and get it manufactured, Pert is committed to sticking with acting from that bliss of goodness. It is leading to great improvements in her family and personal life as well as her work with AIDS. Just after our interview Pert released an important two page précis at the request of the Global Aids Alliance outlining a path to cure AIDS, a breakthrough opportunity. Why now? “I'm into trust and surrender, believing that God is just not going to give me this enormous invention without giving me the wherewithal to carry it through.”



An audio interview accompanies this article at www.6seconds.org/pod/

Candace Pert is the Scientific Director at RAPID Pharmaceuticals and a member of the Advisory Board of Six Seconds EQ Network (www.6seconds.org). Her new book is [Everything You Need to Know to Feel Go\(o\)d](#), her web site is www.candacepert.com

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