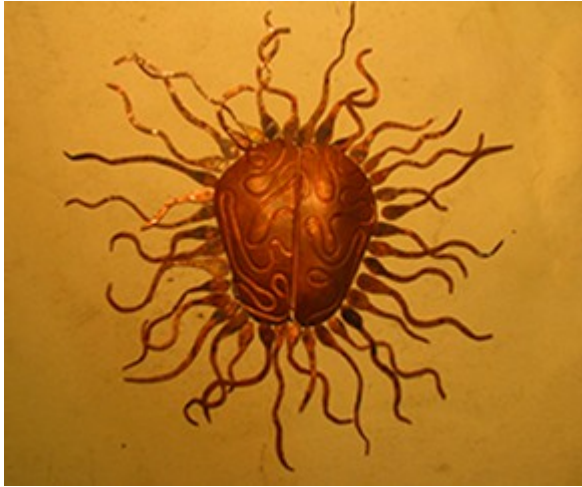


Wired together: How our brains are connected

by [Andrew Root](#) in the [April 3, 2013](#) issue



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She'll go down in history—at least in our family history—as the best babysitter ever. “Ms. Jess,” as my kids called her, was wise, patient and fun. My kids loved being with her, and we loved leaving them with her because we were more than confident that Jess could not only handle emergencies but just as importantly could see our children and respond to them as persons. She had that gift, and that gift now makes her a wonderful pastor.

But according to my son Owen, her gifts were more mystical, even magical. One day after returning from prekindergarten, like a teenager Owen began rummaging around the kitchen looking for something to eat. Jess, recognizing it was snack time but knowing he should ask before taking anything, questioned him, “Owen, what are you doing?”

“Nothing,” he returned.

“Are you hungry?” she asked.

No response.

Owen then went to the refrigerator, opened it and began peering intently, before pulling open the bottom drawer and searching for something. Ms. Jess then asked more directly, “Owen, are you looking for an apple? Are you hungry for an apple?”

Owen froze, his eyes got big. He turned to Jess, looked at her intently and asked in wonder and apprehension, "How did you know? Can you read my mind or something?"

As human beings we do have the innate ability to read each other's minds and for others to be on our minds. It is not magic, but it is mystical. Jess was able to attune herself to Owen, to recognize his need, to observe his actions and to interpret his (limited) discourse. Jess was able to recognize Owen as a person and in so doing was able to read him. (She also knew where we kept the apples.)

Our brains are wired to allow us to read each other's minds, to feel each other's person. Neuroscience has been looking intently at the brain for decades now, even locating neurological operations of empathy. But before we look at those findings, let's look at empathy's evil twin, schadenfreude, which means "to take joy in another's misfortune."

Schadenfreude is imaginative, but not for the purpose of feeling another; it doesn't seek to indwell another but rather to be compared with another. Schadenfreude takes joy in the failures or pain of another because these are sure signs that the other is losing, making you the winner. Schadenfreude hopes that the interests of another aren't met, and thus we can feel better about ourselves. We take joy in another's misfortune, giving us a stance over against them as opposed to with them.

Schadenfreude is the ugly outgrowth of individualism, because individualism fundamentally connects people through competition. In the hot glare of competition empathy is wilted, for persons are no longer focused on their relationships but on the ability to get what they want. And whoever has more of their wants met wins. Competition has no desire for sharing. And because there is no sharing we cannot see each other as persons. Everything becomes an object to compete for. Without sharing, the love of persons is deeply maimed.

As Søren Kierkegaard said, there can be no love in comparison, because comparison breaks the empathic bond of feeling into another, of feeling a relationship, and instead defaults into heated competition.

Matthew Boulton in *God Against Religion* comments that the first murder, the killing of Abel by Cain (Gen. 4:8-10), was motivated by comparison, which led to the competition of worship offerings. When comparison and competition are at their height, fear becomes the driving feeling that sets the terms for our actions. The

great warriors of competition in our time, such as baseball pitcher Jack Morris, often say things like: "In my career I was so good because I was motivated by the fear of failing. I hated losing more than I loved winning. Every time I took the mound I worked so hard because I was terrified of failing."

This may be an appropriate attitude for a professional athlete, but it becomes diabolical in our everyday lives. Comparison that breeds competition becomes the damp conditions necessary for fear to grow like mold on the material of relationships. And the mold of fear quickly makes relationship uninhabitable to persons. This is so because fear always refuses to indwell another, to be with another; fear pushes away from relationships, even deceiving us into ending relationships so that we might be "safe."

Fear believes that the point of human existence is safety, is self-fulfillment, is your own interest. (Anecdotally, this may be why our greatest warriors of competition have been such miserable people and so bad at relationships; think for instance of Ted Williams and Mickey Mantle, beloved ballplayers who couldn't stay married or ended up estranged from their children.)

Fear inevitably leads to loneliness, to seeking to live outside of relationship. Fear keeps us from allowing others to indwell us and vice versa. Jesus continues to tell his followers to fear not (John 14:27), for fear and personhood cannot coexist. Sin serves death; it perpetuates separation and attacks sharing by seeing others as objects of competition and fearing their very presence.

Empathy is to love your neighbor as yourself (Mark 12:31; Luke 10:27). Empathy is the spiritual ability to feel our way into another's place, to feel our way into another's person. It is a spiritual reality with biological/ neurological foundations, but nevertheless it is what persons as spirit do. Empathy is the reflex-like jolt that sends us into another's person, to indwell the other, to be our relationships. It has neurological evidence but is spiritual, as scientists are revealing.

The social and hard sciences have had quite a reunion in the last decade or so. So often at odds, these siblings have found reason to engage in a conversation, to put down their opposition and to look, at least for the moment, at something together. And that something is the mind.

Through MRI scans of the brain and psychological case analysis, these social and hard scientists are exploring how our minds work. A strong case has been made that

human beings, having large brains, are distinctly wired to read each other's minds. And our minds are not just large rational calculators but centers of feelings, where certain stimuli affect different parts of the brain, releasing different chemicals. But these releases and affects are the result of encountering other minds. Our brains are wired for the ability to indwell others' minds, recognizing their feelings and responding with actions and discourse that connect one mind to another. Science writer Daniel Goleman explains in *The New Leaders*:

Scientists have begun to [explore] the *open-loop* nature of the limbic system, our emotional centers. A closed-loop system such as the circulatory system is self-regulating; what's happening in the circulatory system of others around us does not impact our own system. An open-loop system depends largely on external sources to manage itself. In other words, we rely on connections with other people for our own emotional stability.

And this is the point of our distinct ability to read each other's minds: it is for the purpose of putting us in relationships, of giving us the antennas to indwell each other. Psychiatrist Daniel Siegel, author of *Mindsight*, states, "Relationships are woven into the fabric of our interior world. We come to know our own minds through our interactions with others."

Unlike almost all other creatures, the human being spends most of life either being a child or raising children. Not only is our survival dependent on learning, on our large brains, which give us heads we can't hold up until we grow, but also because we are never to be without other minds. Our minds are social organs; we have a mind when it connects with other minds. Our heads are so big and our childhood so long because our brains need the nourishment of other brains. We are to live our lives in relationship.

Evolutionary theorists think that the human strategy to survive is the linking of mind to mind, of person to person. Other creatures thrive in a cutthroat world of natural selection by running, attacking or changing colors. But *Homo sapiens* survive by using the mind to read the mind of others, not only to discern if other *Homo sapiens* are friend or foe, but to bind their lives with others to use their collective brain power to survive the natural world.

Our brains are wired to connect; our brains only work, these scientists tell us, when we are connected. Synapses fire when they encounter the actions and

communication of other minds. Science reveals that there is no such thing as an individual, independent mind; our brains are social organisms that only work when we (when our minds) are in relationship.

This natural/organic reality shows the fundamental importance of relationships to our very ontological form. It shows the very embodied reality of personhood, an embodied reality with spiritual ramifications. The hard sciences have shown that the brain adapts to stimuli—and no stimuli more than human relationships. They have discovered that “synapses that fire together, wire together.” In living in relationship our brains literally connect; they wire together, shaping each other. Empathy, these scientists agree, is a particularly powerful feeling, formed in the brain to allow us to connect our minds to others. Empathy may be formed in the brain, but it is nevertheless spiritual because it sends minds to indwell, to connect to other minds.

The implications of this phenomenon, comments Richard Restak in *The Naked Brain*, is that “you can activate my brain if you can attract my attention enough to get me to watch what you’re doing, and vice versa. Thanks to the mirror neurons in each of our brains, a functional link exists between my brain and yours.”

That our brains are created to indwell other brains is a spiritual reality, a uniquely human capacity given to us because we are spirit, so that we might be spirit. These scientists believe that the more we are together the more we share in each other’s mind.

I had such an experience when my wife Kara and I were newly married and had the great privilege of traveling around the world for six months. While that sounds exotic—and at times it was—it was also filled with excruciatingly boring days and hours. Since we were living on a strict budget, sometimes when we were too tired to continue walking around the city we were in we could do nothing but rest in a modest hostel room.

But often on the trip one of us would say something randomly, and the other would respond, “Weird, I was just thinking that.” We were sharing so deeply in each other’s lives that some of our random thoughts would pop into the other’s head. Through the experience of indwelling each other, of being so deeply our relationship, our minds were wired together.

The neurological location of this ability to mind read, to indwell others, is in what the hard scientists call mirror neurons. These scientists have actually found a group of

neurons in our brains that mirror the actions and feelings of others. It seems to start with simple mimicking.

Advanced studies have been done showing that in conversation persons will, almost as a reflex, mimic each other. If one person's hands moves, the other's hand will almost match it but in reverse, like a mirror. This mimicking is located in these mirror neurons, and scientists think it exists for the purpose of sharing. We begin mimicking each other as a way of sharing. We mimic to read each other's minds. We believe that people are really hearing us, feeling us, when they communicate with their actions by mimicking us—nodding as we nod, looking where we look, opening their eyes as we express emotion. According to Giacomo Rizzolatti and Corrado Sinigaglia in *Mirrors in the Brain*, “when we listen to others, our motor speech brain areas are activated as if we are talking.” Without the simple operation of mimicking, shared action and communication becomes nearly impossible.

For human beings these mirror neurons do much more—they also allow us to feel, to actually participate in another's feelings. When our mirror neurons are fired by watching another, we are moved to feel what the other feels. Seeing another cry, laugh or yawn, I find myself, if I'm not careful, doing the same. Says Louis Cozolino in *The Neuroscience of Human Relationships*:

Mirror neurons and the neural networks they coordinate work together to allow us to automatically react to, move with, and generate a theory of what is on the mind of others. Thus, mirror neurons not only link networks within us but link us to each other. They appear to be an essential component of the social brain and an important mechanism of communication across the social synapse.

Our brains are social organs, part of an open-loop system that seeks relationships. This means not only that we can feel empathy. It means that we can pollute each other, thrusting anxiety and fear into each other. Ministries that seek empathy and that yearn for the sharing of persons will need to manage toxic emotions or else an emotional contagion will pervade the community.

*This essay is adapted from [The Relational Pastor](#). © 2013 by Andrew Root. Used by permission of [InterVarsity Press](#), P.O. Box 1400, Downers Grove, Illinois.*