

Leading Matters Los Angeles
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Session Notes

Reading Your Brain (or Your Mind?)

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What colors are in the sweater I'm wearing? Is the sound of my voice a tenor or a bass? How does that chair you're sitting in feel? Can you wiggle your big toe?

What does it take to process those simple questions?

Answer: about **a hundred billion** neurons in the human brain.

There's a knowledge revolution under way in neuroscience, and today we are just at the beginning. Much of this revolution is in the tools that we currently have. We can now look more deeply and more precisely than ever before into the workings of the 1 trillion cells that make up the human brain, the most complicated and fascinating human organ. New research tells us that while the brain contains only about 1 to 2 percent of the cells in our body, it uses about 18 percent of the energy. We know now that the brain basically never "turns off," no matter what the rest of our body might be doing.

But most profoundly, we can now "see" the brain work, through sophisticated imaging machines that seem to push new frontiers every day. We can measure blood flow at a microscopic level in specific areas of the brain, from the centers of motor movements, to those controlling speech, to those that register when we feel pain. These are breakthroughs for learning more about how to treat any number of challenges to the human condition—from spinal cord injury, to learning disabilities, to the effect of strokes.

What if by using some of this brain scanning technology, one could determine whether someone was telling a lie? We could easily see how that might help in fighting crime. Or how about if we could tell whether a person is likely to be biased in their judgment about hiring people of a different race or ethnicity or creed? Or how whether they could serve impartially on a jury?

New research is investigating those and other equally provocative possibilities.

I know why you're feeling nervous: Some of this is just plain scary, a little Big Brother-ish. What about privacy? What is the right to think freely? Will there be search warrants for what's in your brain?

Big questions. And right now there are more questions than answers.

All technologies have a bright side and a dark side. Through my work and others', we can hope to know the difference.