Reframing the Relationship of Psychoanalysis and Neuroscience

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I was invited to speak recently at a conference sponsored by the Jung Society of Chicago on the topic of my book, *Healing the Soul in the Age of the Brain* (www.healingthesoul.net). I sent the other presenters the latest version of my standard book talk and asked for suggestions about how to make the talk more relevant for the intended audience. The first was that I expand my discussion of psychiatric medications and their impact on psychotherapy, to talk more broadly about the impact of modern neuroscience generally. Does neurobiology research help or hinder our efforts to find meaning in emotional suffering? Does it support or undermine the practice of dynamic psychotherapy? That's a very important question and I have a lot to say about it.

The second suggestion was that I talk a bit about Jung. Considering the occasion, this one was a no-brainer...sort of the opposite of the first suggestion. The only problem is that I am a Freudian analyst so I can't claim any expertise about Jung. But I do talk about the soul without putting quotation marks around it. And I did write a chapter in the "Cambridge Companion to Jung." Admittedly, that was only because the editor was my friend, Polly Young-Eisendrath, and she needed a token Freudian contributor. I wrote my chapter as an imaginary debate between myself and Polly on the merits of Freud versus Jung. It's entitled "Me and my anima."

Anyway, I welcomed the suggestions that I incorporate something about neuroscience and something about Jung into my talk. But when I actually sat down and tried to do it, I discovered it wasn't such an easy task. In fact, it felt a bit like being drawn and quartered. It pulled my thinking in opposite directions. How was I going to rearrange and re-organize the talk to accommodate the competing, contradictory lines of thought these topics inspired, *and* do it in a way that enhanced rather than distracted from the original point of the talk. It felt impossible.

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[1]This article is a minimally edited version of remarks I made at the Chicago Jung Institute's "Founders Day Symposium" on March 28, 2009

I found myself wishing I were one of those people who don't need a prepared text, who can stand up without notes and fire off an hour-long sequence of complete sentences that are not only entertaining and creative, but follow logically from one to the next until they add up to a coherent well-organized presentation. Then I would simply start talking and be confident that just the right sentences about neurobiology and Jung would come naturally to my lips at just the right point in my spontaneously flowing sequence of sentences. But unfortunately, I'm not one of those people, so I went to wishful thinking, plan B. I started wishing I were one of those more ordinary people who are good at Power Point presentations, who can organize their thoughts into bullet-pointed slides that segue logically from one to the next, doing little off-the-cuff riffs on each slide, never meandering too far into diversionary trains of thought. Then I could simply incorporate Boris's suggestions into a couple of new slides and my only problem would be figuring out where in the sequence to insert them.

But alas, I'm not one of those people either. Linear thinking just doesn't come naturally to me. In fact, most of the time it doesn't come to me at all. You might say I'm sequentially challenged. The very thought of using index cards gives me indigestion, and there's about as much chance of my working from an outline as there is of Dick Cheney letting someone else be in charge.

In Jungian terms, I'm tilted heavily towards feeling over thinking, and toward intuition over sensation. In neurobiological terms, I'm tilted heavily toward right brain over left brain. No matter how hard my left brain tries to impose linear order on my ideas, my right brain quickly dissolves every logical sequence in a whirlpool of non-linear interconnections. So when I write a paper, I never know where I'm going until I get there and I usually don't even know what my main point will be until I get near the end of the paper and everything seems to fall mysteriously into place.

For example, did you notice what just happened? I started off feeling it would be impossible to integrate both neurobiology and Jung into my talk, and the very next thing that came to mind was an explanation of *why* it felt impossible that actually did integrate both neurobiology and Jung. The polarities in Jung's compass of ego functions correlate perfectly with the polarities of right brain—left brain. Of course that still doesn't answer the question whether knowing about such correlations, and knowing about neurobiology generally, can benefit psychoanalysis. I could start by asking whether it benefits me in understanding why I can't do linear thinking. But I'll hold off on that and just try to answer the question directly , as simply and linearly as possible.

The first thing to understand about neuroscience is that it can provide knowledge only about what is observable using the methods of laboratory research. The experimental methods of neuroscience are designed to observe only the impersonal electrical and chemical workings of the brain, processes that can be seen and measured, either with the naked eye or with instruments that provide a visual readout. Such methods specifically exclude the inner world of conscious personal experiences from their field of observation. That's where psychoanalysis comes in. Our observational methods, introspection and empathy, are specifically designed to observe the inner world of consciousness that neuroscience can't see. So neuroscience can provide information about unconscious activity in the brain, and about neurological correlates of certain conscious experiences, but it can't tell us anything about conscious experience itself. In fact, if it relied only on its own methods, neuroscience wouldn't ever know that a conscious experience was happening. To know that, it must rely on the observational methods of psychoanalysis, introspection and empathy.

So neuroscience and psychoanalysis are very different ways of observing human experience. Neuroscience observes the neurological conditions of human experience. Psychoanalysis observes human experience itself. So psychoanalysis has a considerably larger view. It's like the difference between studying the Mona Lisa with an appreciation of its beauty and its artistic and cultural meaning versus analyzing the paint pigments and brush strokes that were used to create it. Psychoanalysis sees the whole forest; neuroscience at best can see only a few trees at a time. Of course, neuroscientists do know about the forest. They

understand that the impersonal neurological events they study are part of a larger personal human experience, but that understanding doesn't come from neuroscience. It can only come from an independent source of knowledge outside neuroscience, a source like psychoanalysis, that used the methods of introspection and empathy.

For example, neuroscience could never have defined the difference between right-brain and left-brain thinking without knowledge borrowed from psychologists and psychoanalysts who knew already through introspection about the dualities of non-linear versus linear logic, feeling versus thinking, intuition versus sensation, primary process versus secondary process. The scientists wouldn't have had the language to interpret their evidence unless other disciplines had already developed the necessary concepts through purely introspective investigation.

So to put it simply, neuroscience depends on the methods used by psycho-analysis. Psychoanalysis does <u>not</u> depend on the methods used by neuroscience. If neuroscience didn't exist, psychoanalysts would still know what we know about human experience, and we would still be able to make new observations and acquire new knowledge about human experience, including the kind of automatic, reflexive or compulsive emotional and behavioral responses that obviously require some kind of neurological explanation. That's where neuroscience has the potential to help us fine tune our model. But it can help us only because we know enough already through introspection about these neurologically driven responses that we can develop our own hypothetical neurological models, the way Freud and Sylvan Tomkins did, and we can then *tell* the neurscientists what *needs* fine-tuning.

What I've just told you is pretty basic, so it's surprising how few neuroscientists and psychoanalysts today actually understand it. This may not be the case with Jungian analysts, but the trend nowadays among Freudian analysts is to believe what the neuroscientists tell them; that introspective knowledge is valid only if it can be verified using neuroscience research methods. The truth is quite the opposite: neuroscience wouldn't even be possible unless it could rely on the independent validity of knowledge gained through introspection. So if neuroscience is to be of genuine help to psychoanalysis, there needs to be a reversal of the current trend. Instead of psychoanalysts believing they should turn to

neuroscience to find out what's legitimate for us to think, neuroscientists should be turning to psychoanalysis to find out what's useful for them to do research on. When that happens, it could be the beginning of a beautiful friendship.

Now let's get back to the more personal question whether neuroscience can help me understand my inability to do linear thinking. Let's compare two alternative explanations; one, that my right brain simply works better than my left brain so it tends to dominate on a purely neurological basis; the other, that my left brain works perfectly well but is repressed or inhibited by an unconscious psychological conflict. For instance, I may unconsciously associate linear thinking with an arrogant phallic aggressiveness that produces anxiety or guilt in me. But if I use warm and fuzzy right brain thinking I feel less powerful, less dick-headed, so I have less to be anxious or guilty about.

Neuroscience by itself can't decide between these alternatives. My PET scan would probably show the same imbalance in brain activity whether my left brain was constitutionally weak or whether it was weakened by a psychological conflict. Much the way PET scans of OCD patients show the same changes whether their symptoms respond to psychotherapy or to medication. So neuroscience can show us brain acivity but it can't tell us whether or how that activity is related to psychological experience.

The good news, as I mentioned earlier, is that psychoanalysis *can* give us *introspective* knowledge about the brain-m,ind relationship. In this case, for example, I know through introspection that, under either explanation of why I can't think straight, the limitation on my thinking is neurological. My conscious mind is being controlled or restricted in what it can do by something—either a deficiency or a conflict—in my unconscious brain. I also know that in either case, the limitation is not absolute. If my left brain is weaker on a purely neurological basis, I can strengthen it through exercise, for example by disciplining myself to use index cards whether I like it or not. Or, if my left brain is inhibited by conflict, I can work to discover and resolve the conflict in psychotherapy. Or I could always just decide to stop worrying about my left brain, accept myself as I am and embrace the joys of right-brain thinking. The point is that, either way, I know I have a degree of choice. I have free will.

From the limited perspective of neuroscience, it appears that free will is an illusion, that we can do only what our brains make us do and then rationalize that we *chose* to do it, much the way a person who has been given a post-hypnotic suggestion to open his umbrella at 3 o'clock will do it automatically but will tell himself that he *decided* to do it because it looks like rain. The idea here is that to believe we are nothing more than complex automatons—completely controlled by neurological forces outside our awareness—-makes human beings too anxious, so we need to relieve our anxiety by telling ourselves the story that we have free will.

On the other hand, if we accept the evidence of introspection, then free will seems like a pretty obvious fact of life. So the neuroscientist's idea that free will is just an illusion—a comforting story we tell ourselves— might itself be a rationalization. Perhaps human beings are completely free to do and think whatever we choose, and what makes us too anxious is the moral responsibility that comes with this absolute freedom. We then relieve *that* anxiety by telling ourselves the comforting story that our thoughts and actions are determined by our brain chemistry, a kind of a universal Twinkie defense.

Well, in fact, I feel confident that neither one of these theories is correct. Because that's simply not the way it feels to me. I can perfectly well tell the difference between a direct experience and a rationalization of that experience—and so can everyone; that's why we have the word "rationalization" in the dictionary—and I know from the immediacy of my unrationalized experience that certain aspects of my thinking and behavior happen outside my control, while others clearly depend on my conscious intention. The experience I've been trying to explain, for example—my spirit being willing but my left brain being weak—includes both aspects, my conscious intention impeded by something outside my control. The experience of rationalization itself also includes both aspects. It begins with a feeling of anxiety that happens outside my control, followed by a moment when I have a choice either to accept the anxiety and allow myself to feel it, or to tell myself a story to make the anxiety go away. In that anxious moment of choice, I know—because I can feel it—that I am of two minds, a mind that my brain controls, and a mind that I control. One is unconscious and automatically reactive, like a software program running on a computer.

The other is conscious and intentional, like the guy sitting at the keyboard who decides to open and use a particular program at a particular time.

According to Freudian theory, there is a conflict between these two minds that is inherent in human nature. We have an unconscious mind, controlled by the neurophyiology of the brain, that doesn't have free will, bumping up against a conscious mind directed by an intentional self that does have free will. Freud called these two minds the id and the ego or, properly translated, the It and the I. I think of the It and the I as two dimensions of the soul, or two levels of experience, the biological and the personal, the brain and the self. In a state of inner conflict we have disturbing unconscious emotions—operating at the biological level—that are threatening to become conscious at the personal level, but are unacceptable to the conscious self so we have to repress them, disown them. Healing the soul means resolving this inner conflict, reconnecting with our disowned unconscious emotions—getting in touch with them as fully conscious feelings, attitudes, and desires that we accept as part of ourselves, part of being human. In doing so, we transform the biological into the personal, making the unconscious conscious, and thereby expanding the range of free will. Freud described this transformation in a compelling aphorism, "Where It was, there shall I become." It's like the Pinocchio story: Getting in touch with our disturbing emotions, making the unconscious conscious, transforms an It into an I, a biological puppet into a fully human being.

If I understand Jung correctly, this transformative process that I call healing the soul is precisely what Jung called individuation. It's a dialectically evolving transition from the condition of being controlled by unconscious emotions in the brain—the archetypes and complexes of the ego, the Shadow, and the animus or anima—to becoming aware of and able to act intentionally on the feelings, the values, the goals, aspirations and the vocation of the self.

I'll have more to say about how this happens but the essence of it is that by paying attention to the inner experience of disturbing emotions, we bring them from the domain of the unconscious brain where they control our reactions automatically into the domain of the conscious self where we can recognize what we're feeling and decide what to do about it, in

other words, from the domain of determinism into that of free will, from the domain of neuroscience into the domain of psychoanalysis.

Now I realize that in equating the unconscious with the brain, I'm making it sound less mysterious, less powerful, and more localized in the individual, than it really is. In reality the unconscious has biological, spiritual, and transpersonal dimensions, but I'm only talking about the dimension that neuroscience can see.

And my point is that, in the scientific study of human experience, neuroscience stops where consciousness and free will begin. That's why I can be quite certain that free will exists simply because "That's the way it feels." Because the introspective or empathic discernment of "the way it feels" is the only evidence we can ever have, not only about free will but about pretty much all the most important experiences in life. That's how we can know what love is, for example, and how we can know the difference between right and wrong, logic and illogic, science and superstition, rationalization and reality. If they can't be seen or measured, we can know about them only by discerning the way they feel.

Which means that neuroscience can be helpful to psychoanalysis, but not nearly as much as you might have thought. And it can also be harmful. In promoting the specious idea that introspective knowledge isn't valid or reliable unless verified by laboratory research, neuroscience is undermining not only to psychoanalysis but to the human spirit. Here's a quote from a recent *Newsweek* article that describes how:

> The public and the press are infatuated with brain images. It is not so much the specific findings they absorb (people don't go around saying, "Uh-oh, my anterior cingulate is really active; I must be feeling social rejection"). It is something deeper. Brain activity is perceived as more real than subjective experiences, feelings or thoughts. When scans show that addicts' brains "light up" when they see drug paraphernalia, people view addiction as more real, more biological, than if addicts just say they get a craving when they see a bong.
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> Brain images also convey the erroneous message (and here the press is deeply culpable for reporting the studies so uncritically) that thoughts, feelings and reactions are hard-wired and unchangeable. That profoundly shapes how we view ourselves and others—in particular how we think of free will and individual responsibility.

The irony, of course, is that the validity of the brain scan interpretation depends on the validity of the researcher's introspective knowledge of what addiction is, and on the validity of the addict's introspective knowledge that he is experiencing a craving at the moment he is being scanned.

It's a real problem that neuroscience can't recognize or acknowledge its reliance on introspective knowledge. But it's downright inexcusable that it denies the validity of introspective knowledge and claims that only what can be seen and measured is real. In doing so, it fosters a dehumaizing trend in our culture: an overvaluing of the physical and the external, and a devaluing of the inner life.

That's why psychoanalysis is so important to us, both as individuals and as a culture. It affirms the validity and the irreplaceable value of inner experience. And that's why psychoanalysts and neuroscientists need to get our facts straight about the nature of our relationship. Neuroscience is a profound way of understanding a very limited aspect of human experience. Psychoanalysis is a profound way of understanding human experience as a whole. Once we agree on that, psychoanalysis can claim its rightful place as a general science of human experience, with neuroscience as a helpful adjunct in understanding one layer of that experience.