Thank you so much to the American Medical Writers Association, to all the wonderful people in your administration, and to all of you for being here.

In this short time, we have an opportunity to talk about not only the experience of writing but also the experience of writing for professionals, for people in the clinical world, for scientists, for people in organizations, and for the public. And we're in an incredibly important moment in our experience as part of humanity, in which writers have a very important role to play in terms of how human beings come to understand themselves, the way they relate to their inner life, the way they relate to other human beings, and the way they relate to all of nature, the planet. And in many ways, that perspective of how you relate, how you communicate, how you understand, how you connect with those 3 things—the inner world, the interpersonal world, and, if you will, the intranature world—has everything to do with where we've come as a modern society.

Writers play an incredibly important role in shaping what a person (whose name I can never pronounce because I don't speak French, but it's “Pierre Teilhard de Chardin”) wrote about something called the noosphere, which is the atmosphere of knowledge, of information. And this atmosphere of knowledge, the noosphere, is the way we know things, from, I believe, the Greek. So, noesis is the Greek term for how we know things, gnos is the Greek term for how we believe things, and this noetic view of how we come to know things in culture has everything to do with where we've come as a modern society.

At breakfast this morning with your wonderful leaders, I was mentioning that recently I was asked to go to 2 schools that happen to be literally across the street from each other. One was a high school and one was a medical school. In both cases, the students in those schools were killing themselves (literally—jumping in front of a train or using other ways of ending their lives), and so I was asked to do an intervention independently at Stanford Medical School and at Palo Alto High School across the street from Stanford University.

On our website (www.drdansiegel.com), if you go to Resources and go to the videos, you can see the video that the students made of the intervention (I have their permission to use it) talking about what's happening in modern culture, in which we have higher rates of suicide than we've ever had. And if you look at the recent reports from the Mayo Clinic and related organizations, of physicians in human medicine and also animal medicine (veterinarians), more than half have serious clinical levels of depression, anxiety, and suicide.

So, at Stanford at the medical school within the nursing department—and also within the nursing school there—we talked about what is going on that leads to this problem. And I didn't go to Stanford for medical school; I went to Harvard, the
Stanford of the East. (I shouldn’t say that, but my mom graduated from Stanford, so whatever they do is their rah-rah thing.) I’ll just say this: they have this same issue where they asked me to come to speak.

These are the questions I’m going to try to address in this short period of time. I have a bunch of slides that I’d love to show you, primarily because my daughter did the drawings, and she’s a graduate student now in environmental science, and I’m so proud of her. We may get to a few of them that are in the book, Aware, but usually the shortest talk I give is about 8 hours, so this is really a challenge to give a short 20-minute talk. We’re going to try to define what the mind is—what is a healthy mind, and how can we cultivate a healthy mind and a healthy world? And I’ll invite you to consider that the important work you do as medical writers, whether it’s for organizations on regulation or whether it’s actually writing for the professional audience of physicians or scientists or translating that for public consumption, is all about these questions.

Basic Questions:
What is the Mind?
What is a Healthy Mind?
How can we Cultivate a Healthy Mind and a Healthy World?

You might be shocked to find (and this is now addressing more of the “looking at what it means to be a writer”) that, for me, after I was trained in research but before I had ever written anything really, I was asked to be the training director in child and adolescent psychiatry at the University of California, Los Angeles. It was the beginning of the Decade of the Brain, 1990, and I was done with all my training—I was board-certified in this and board-certified in that—so I was finished, and now they were asking me to run the educational program. At that time, it was the largest training program for anyone working clinically with children and adolescents, so I felt really responsible because I had gone through that training.

But then when I was starting to take on that role, I realized something was missing, and if you look at this first question, that’s what was missing. I was board-certified in everything you could be board-certified in, and this is about psychiatry and the psyche. *Psyche* is the Greek term for the soul, the spirit, the intellect, or the mind; it’s the specialty of medicine that deals with the mind. So, you would think that a specialty focusing on the mind would know how to say what the mind is, wouldn’t you? Yes or no? Yes … at least that’s what I thought.

And I went, “Whoa, hold on! No one’s said what the mind is!” So I brought 40 scientists together from all over the campus, because I had been an interdisciplinary research fellow through the National Institute of Mental Health, and I brought all of my teachers who were now my colleagues together, and it was the beginning of the Decade of the Brain, and we said, “What is the connection between the brain and the mind?” And I wrote a whole book on this 1 set of meetings we had, and the book is called *Mind*—that’s it, just *Mind*.

Because this is the weird thing…the field of psychiatry does not say what the mind is, the field of psychology does not say what the mind is, the field of education that helps minds develop does not say what the mind is, and even the field of philosophy (which includes the branch of philosophy of mind) not only doesn’t say what the mind is, but it also says you should never say what the mind is. These are my dear friends! I said, “Well, why shouldn’t I say what the mind is?” They said, “Because it’s a philosophical error.” I asked, “Well, how’s that an error?” And they replied, “Because if you say what it is, you’ll limit your understanding of it, because words never really do the thing.” So, then, I guess we should all just stop writing and just be quiet, silent.

Okay. So, the point of all that is when you’re a writer like you are, it’s important to realize that words are both limiting and liberating, and being humble about that as a writer is very important. Now, this was before I ever became a writer, but it was when I was an educator—which is similar to being a writer—and I decided that I wasn’t going to do to my students what was done to me, which was only to talk about disorder and dysfunction, kind of like the whole field of medicine.

This issue of the mind is very interesting, because, of course, Hippocrates (the grandfather of modern medicine) defined the source of our joys and sorrows in a book on epilepsy called *The Sacred Disease;* what did he say—does anyone know from 2,500 years ago? Because he did offer a definition of the mind, basically. He said it just has to do with the activity of your brain. And he made the point in that book of saying ONLY the activity of your brain. So, for 2,500 years, the field of medicine has used the word “mind,” based on Hippocrates’ writings anyway, as a synonym for brain activity. And then in 1890, William James, the grandfather of modern psychology, affirmed what Hippocrates had said thousands of years earlier.

If that’s true, if the field of psychology and psychiatry are really the study of brain activity, why in the world would we need a separate word? We should keep things as simple as possible; let’s just say it for what it is: brain activity.

Well, one reason is because we have this really amazing thing called subjective experience. And when I was a biochem-
istry major in college looking for the enzyme that lets salmon go from being hatched in fresh water to surviving in salt water, and we found the enzyme, I was so interested in that. But at night, I would work on a suicide prevention service, and I was taught as a young adolescent that the way you tune into the subjective experience of another person—their despair, their sadness, their memories, the way they are having intentions of killing themselves or not—makes the difference between whether they actually commit suicide or not. If I were on the phone with a person on the suicide prevention service and said, “You know something, I think your serotonin levels in your prefrontal cortex are probably lower than the average when you statistically calculate how many people have that serotonin level. You ...” boom, they would end their life.

Identifying the neural processes that are correlated with mental subjective experience is an exciting area of research, and a lot of my friends do it, and I think it’s awesome, but to equate neural firing patterns with subjective experience is a scientific error that has been made for thousands of years and continues to dominate a certain ... attitude—let’s just use that diplomatically—within academia.

So, when I was in medical school—I was telling this story this morning at breakfast—before I dropped out of medical school, a patient of mine had died, and my resident came to get me as a student. We went to sit by the corpse, and we were both crying with the nurse who had helped to take care of Mr Smith for all those weeks until his dying day. The attending says to me afterward, “You left rounds, why did you leave rounds?” I said, “Oh, Mr Smith died; we were taking care of him for 6 weeks, it was really sad, and we wanted to take some time and just collect ourselves as we said goodbye to him.” And this chief of oncology at Harvard Medical School says, “There’s no time for tears.” So, for the next 6 weeks of this very important rotation, my emotional life disappeared from my awareness, and I learned how to be a robot like him. I got the highest mark, he told me, in the whole rotation, which was useful for my resume and horrible for my psyche.

The socialization process of medicine is to tell you that there’s no time for tears, there’s no time to accept the feelings you have, to see that death is actually a part of life. But instead, what you do when you aren’t aware of the emotional meaning of that, the subjective experience of that process—hear the static you get? This is the static that happens in medical socialization, seriously, because in the background, you have the emotions of someone’s life. Imagine that professor saying to a young student, “There’s no time for tears.” We now know years later that, in fact, physicians who attend to the subjective experience of the patient even if they’re coming for a common cold—this is a controlled study that you can see was published in 2011—have patients who get over their cold a day sooner and have a more robust immune process.

It’s malpractice, you could say, to have a physician who’s not in tune with the emotional life of others, and the way we know that from neuroscience is you need to be aware of what’s happening inside of you. So when you create an entire profession—not in every program but in the vast, vast majority of them—in which a person isn’t aware of their internal world of subjective experience, including emotion and meaning, the research shows that they burn out faster and they’re more likely to be depressed, anxious, and suicidal. Whether you consider veterinarians, who now have the highest suicide rate of any profession, or physicians, who also have a very high rate—more than half of them are clinically disturbed mentally—we have a serious problem.

The simple thing to say from this first point of this slide is that by not saying that the mind includes subjective experience that distinguishes it from the brain, we are actually mistreating trainees in the field of medicine. It is a travesty that a medical, caring profession has more than half of its people in massive amounts of suffering. Not only is that bad for the physician, but think of how bad that is for their patients.

At the Mindsight Institute, we actually offer a definition of the mind, unlike the philosophers or psychiatrists or psychologists. We actually say what we think the mind is; it’s a definition from 1992, so it’s been around a long time. Then from that definition, we offer a definition of a healthy mind. And then from that definition we ask, “How do you cultivate that healthy mind, and how is it that a healthy mind might actually make a healthier world?”

That’s why usually these talks are 8 hours long, so we’re not going to get into all that. But I do want to look at a couple of fundamental issues.

The field of interpersonal neurobiology that began in that 1992 meeting basically says that if you brought all the fields of science together—math, physics, chemistry, biology (including neuroscience and genetics), psychology, sociology, linguistics, anthropology, and everything in between—and you made one framework that built on the beautiful, hard-earned findings from the independent disciplines, what would that look like? We call that— I had to think of a name, so I named it—interpersonal neurobiology. If I had to do it all over again, I would absolutely not use that name, but now with the 70 textbooks under that name, no one’s going to let me change the name. And the
reason I would change the name is because it’s not actually neurobiology. And since then, a new field has come out called social neuroscience. And people think they’re identical, and they’re not at all. Social neuroscience is a branch of neuroscience, which is a branch of biology; interpersonal neurobiology is just 2 words that indicate a framework embedding all the sciences into 1 perspective.

So, in that view, the fully embodied brain is the inner part of your life, and the relationships are your connections with other people on the planet. And one take-home message from this slide is that modern culture—including science, including medicine, including everything you write about—has had a word, mind, that, whether you know it or not, has been made a synonym for brain activity. And one of the products of the mind is the self, and that limited perspective of “mind equals brain activity” means the self only comes from inside your body. Let’s just name that with a word: the “separate self” or the “solo self.”

You, as medical writers, have an opportunity to actually change the course of life on Earth, and here’s how you can think about it and see whether this fits with what feels real to you or not. One way of understanding what’s happened on Earth is that contemporary culture has equated the self with the body. That separate self may be not only from a scientific point of view, a limited view—that’s a really diplomatic way of saying it. A little bit less diplomatic way of saying it is that it’s a partial truth, an even less diplomatic way of saying it is that it’s wrong, and an even less diplomatic way of saying it (that’s probably more accurate) is that it’s a lethal lie. You choose how you want to describe it.

Why is this limited perspective a lethal lie? It’s a lie because it’s not true and people are saying it as if it is true: “the mind is the brain” or “the self is separate.” And it’s lethal because of the way human beings are treating each other across racial divides.

Racism, in America, is based on this idea that self is only this body or people who have bodies like this with the same skin color, or the same religious belief, or like that. Racism is based on this lethal lie of a separate self.

Look at climate change issues. Look at a deep analysis of the ecology of climate change on this planet, the excessive differentiation of human beings thinking they are not a fundamental part of nature, that they’re separate. The key thing to do before you die, to have meaning in your life, is to get as many toys as possible. To get those toys, I need to earn a lot of money—I think I’ll make a factory. Okay, I’m going to build a lot of stuff and get people to think they need to buy the stuff I build, so they can then give me the money, so I can get more toys and then give those to my kids, so then I’m going to feel like I had a meaningful life. And now I take my factory, and I don’t care about the ocean around the factory or the forest around the factory—just burn it down and pollute it. Who cares, because I got a lot of toys? Does that sound familiar?

The pathway of contemporary culture with that kind of mentality is about to destroy life on Earth. As Edward O. Wilson, a professor emeritus at Harvard, says in a book called *The Meaning of Human Existence*, part of the problem is that human beings, as a species, rely primarily on 2 sensory inputs: sound for hearing and light for seeing. Wilson says that this reliance is such a sensory limitation that it gives us the illusion of separation. And years before Wilson wrote that, a separate scientist, someone you know named Albert Einstein, wrote that the problem with humanity is that we have—and these are his words—“an optical delusion of consciousness” that we’re separate from the rest of nature. So, whether you call it a delusion, which is a psychotic belief, or you call it an illusion, which is an inaccurate perception, either way it’s wrong.

Here’s what I’m suggesting we consider: that in our work and in our lives, we challenge the error of modern living—which says that the self is separate or the mind is the brain—in a loving and gentle and supportive way, realizing this just like I did when I was in medical school (when I didn’t grab my professor and say, “You aren’t recognizing the mind!” Maybe I should have, but I didn’t), and slowly trying to introduce new ways of thinking so that people can embrace them.

This hidden lie of a separate self is actually making individuals profoundly stressed. If you look at your own burnout, or you look at the veterinarians or physicians who have a high suicide rate, what do they describe? They describe not belonging; they describe not feeling connected; they describe feeling isolated. The problem with that is that we are a profoundly social species. So, the linguistic term self, like any linguistic term (you probably know this), is the surface level that has an iceberg beneath it of concepts and categories that are usually not reaching the light of consciousness.
Let me just get to one more thing; I want to make sure you have something useful, not just conceptually but for your personal life, because I was told there’s a lotta, lotta stress.

Now, you’re not the only ones who are being stressed. I just did an immersive weekend conference on emotional resilience teaching with Dr Elissa Epel. And you probably know Elissa’s beautiful book, called *The Telomere Effect*, that she wrote with her colleague, the Nobel Prize winner Dr Elizabeth Blackburn. So, in that intensive weekend, Elissa and I dove through the science of resilience and what the participants could do—and you can look at our work and you can see what we do. But in the evening, the retreat center asked us to do a public event on climate resilience, which isn’t related to what we’re doing. What do you do with your emotions on this?

So, one of the things we talked about are in these slides, and this is how I’ll end the short talk. Wilson has a great term that you probably know from his 1998 book *Consilience*—*consilience* is a word for when you find common discoveries across independent pursuits. When you look through a long line of reasoning, gathering all these fields of science together, you come up with 2 shared views—2 consilient findings—across all the different disciplines. Number 1 is that to have change, you need to invite consciousness to participate. When people read your writings, hopefully they are conscious of what they’re reading, and so you have an opportunity in your writing to actually invite change. That’s number 1: consciousness is needed for change.

Number 2 is when you ask the question. Now, there’s a whole book called *The Developing Mind* (it’s a textbook for graduate school), from which I’ve reviewed more than 2,000 papers to support what I’m about to tell you. But if you look at that book, it says—and this is the second consilient idea—that health emerges from a process we can call integration. Integration is simply defined as aspects of a system, whether it’s your brain or your body, or your relationship with your spouse or your kids, or a society or a planet. Aspects of that system are differentiated and then linked to each other. When you balance that differentiation with the linkage—there’s no name in math for that but we’ll call that integration—integration looks like it is the fundamental mechanism of health at any level of system analysis.

Now, if that’s true, if you combine the 2, how would you then take “consciousness is needed for change” and “integration is health” and actually in your personal life after this talk today try to integrate consciousness?

There is a table in our office; it has a glass center and an outer rim. I would bring my patients into the office back in the early 90s, and I would say, “Let’s integrate consciousness and see if we can get something happening with that.” They’d say, “What are you talking about?” I would say, “Well come on, come off the chair, off the couch, walk around this table. Let’s place the knowing of being aware, the knowing of consciousness.” For example, if I say, “good morning,” how many of you know I said “good morning”? Right, raise your hands. So, you have the sound “good morning”—we’ll put that on the rim of the table as a sound. But then you also have the “knowing” of it, and we’ll put that “knowing” in the hub. The hub represents the knowing of consciousness, the rim represents the knowns, and a metaphoric spoke, which is the thing holding up the table, is the focus of attention.
So, I worked with my patients to differentiate all the knowns from each other and from the knowing, and then we explored the knowing. In doing so, mild-to-moderate depression got better, anxiety got better, and trauma was helped a lot. People with life-threatening diseases could face their diseases with more equanimity. People who were burnt out at work stopped being burnt out. It was remarkable.

Then I taught my students who are therapists. They themselves found improvement with it; their clients got better. So, then I said, “Okay, well now I’ll try to do it with people who don’t know me as my patients or my students—I’ll try it with workshop participants.” And so, I did it, and because I’m a scientist, I recorded all the results. I did the first 10,000 people, had them say what it was like, and then I had to try to find a scientific explanation.

You can find the explanation in a book from years ago called *The Mindful Therapist*. (They wouldn’t let me put it in a book called *Mindsight*; they said it was too weird.) But over the course of the years, once these kinds of things became accepted, people actually stopped telling me what I could or couldn’t do. So, then I put it in a book called *Mind*, and then the deepest discussion of it is in the last book, called *Aware*. (You can go to my website, for free; go to Resources.)

The bottom line of all that is that if you do this practice, which integrates consciousness, you get these 3 things that are built into the practice, fortunately, that science has shown give you positive effects in your life. You’re going to strengthen your capacity to focus attention; you’re going to open up your awareness as you build up that hub of the mind. So instead of your consciousness being the size of an espresso cup when life dishes you out a challenge like a tablespoon of salt to absorb, now you’ve cultivated and expanded your consciousness to like 100 gallons in size, so when life dishes out a tablespoon of challenge, it’s diluted in that expansive consciousness.

And then you build kind intention. And here’s what I want to inspire you with, which is this last slide we’re going to show. This is the Three Pillar Practice. Those are usually done on separate kinds of practices, but the good fortune of the Wheel is that it has all 3 in one practice, which we can’t find in any other practice. But the research that’s actually been done to show the findings in this slide are in peer-reviewed journals of the highest caliber in the world; the Wheel just happens to have 3 of the 3 that are shown to be needed.

So, what does it do? Number 1, if you do Three Pillar Practice—and the Wheel hasn’t been studied like this, but it has all 3 in it, so it should work—but if you do Three Pillar Practice, you will change the structure of your brain.

How? You will grow integrative structural changes; for those of you who like brain areas, the corpus collosum will grow, the hippocampus will grow, the prefrontal cortex will grow, and your connectome will become more interconnected. Don’t worry about all that. The bottom line is that anything you’re going to regulate—like attention, emotion, mood, thought, memory, morality, relationality—is all related to integration of the brain.

If you look at Smith et al., integration of the brain is the best predictor of well-being, of any measure of well-being they could find. Integration of your brain is the best predictor of your well-being. And now I’m telling you that there’s a Three Pillar Practice that science has demonstrated to integrate your brain.

If this were a pill that did this, you would take it in a heartbeat. And it doesn’t even have negative side effects; you just have to do it. So that’s amazing!

And then the final 5 things are physiological changes. If you told me 15 years ago that I’d be up here showing you peer-reviewed scientific journals publishing these 5 findings, I would say you’re out of your mind (now that we’ve defined the mind, we can say you’re out of it). But it turns out you’re in your mind. These are from time and practices. So, if you
start doing Three Pillar Practice after this talk on a regular basis—just like brushing your teeth regularly will preserve your teeth—you do the Three Pillar Practice, and you will reduce stress; you will enhance immune function (these are literally blood tests to see if your immune function will be better; Richie Davidson’s lab and other people have done that); you will improve your cardiovascular risk factors (lower cholesterol, lower blood pressure, and, in fact, make the heart communicate with the head in a more balanced way, which you can measure with heart rate variability coherence); and you will reduce inflammation in your body and your brain by altering the non-DNA molecules—the epigenetic regulators like histones and methyl groups—that change the configuration of part of the gene that regulates inflammation. (What you do with your mind will literally change the epigenetic controls to reduce inflammation. I’m not kidding about this.) And, if you do these practices, the research suggests you are very likely to optimize an enzyme called telomerase (this discovery earned Elizabeth Blackburn the Nobel Prize). You will optimize an enzyme that repairs and maintains the tips of your chromosomes—the ends, the telomeres.

When I sent the manuscript of Aware for Elissa Epel to just review it, she wrote me back, saying, “Dan, did you send it to the printer yet?” Now, as a writer you know what that feels like. And I said, “Elissa, in 2 days it’s going to the printer, what’s up?” She said, “You left something out.” And I said, “Oh! Oh my god, not another chapter I have to write?” She said, “No, not another chapter. Everything you said is accurate, everything is very accurate, but you left something out.” I asked, “What did I leave out?” She said, “You have to say it slows the aging process—the Three Pillar Practice.” I said, “That’s audacious, how can I say it?” But this is Elizabeth Blackburn, the world’s expert within aging, right? She said, “Because we’ve proven that; you need to say that.” So, I put it in because she told me I had to. So, you will slow the aging process, probably by accumulation of all these things: reducing inflammation, improving cardiovascular functioning, enhancing immune function, reducing stress, and optimizing regulation because you’re integrating the brain and changing the structure of your brain.

Let me ask you something. Do you care enough about yourself, as inner and inter as that may be, to start doing this on a daily basis? Do you care enough about your teeth to brush your teeth every day? Just like you know 100 years ago people didn’t brush their teeth and their teeth fell out, and now you are brushing your teeth every day, if we can get you to mobilize yourself to do a practice like the Three Pillars or other ones (in the Wheel you get them all in 1 practice, so it’s a useful way of doing it), the research shows are very likely to get these positive results.

The final thing I’ll say is that if you integrate all of this into your life, what people have described is this—without it being a goal, without it being something that’s trying to be achieved—the reports are something like this:

You know, I feel much clearer. My burnout has gone away. I’m not anxious. My depression has subsided. I feel really alive; I feel vital; I feel energized. And something else has happened: my feeling—it’s just a feeling of who I am, of what my self is—is not just isolated and disconnected; it’s not just in me. I’m a part of other people, I feel a part of nature, and I even feel a part of life that happened before I was born and life that will exist afterward, so I have a deeper sense of meaning and purpose in life that goes beyond the time I get to live in this body.

Now, what’s the word we use for that kind of relational self? So, you don’t want to get rid of the inner self, you want to sleep your body well, exercise your body. But that’s a “me.” But in addition to the “me,” you’re also a “we.” So, the fun way that we’ll end this talk is with that: we can integrate me plus we, because in integration you don’t lose the elements; you bring them both together: me plus we equals “MWe.” And when people start living in an integrated self as a me plus we equals MWe, then the world becomes more meaningful, more connecting, and together MWe can see ourselves as writers in the world, as educators to support humanity finding a more integrated way of being compassionate and kind and seeing our way through the challenges ahead.

Thank you so much for your kind attention.

Author declaration and disclosures: The author notes no commercial associations that may pose a conflict of interest in relation to this article.

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References