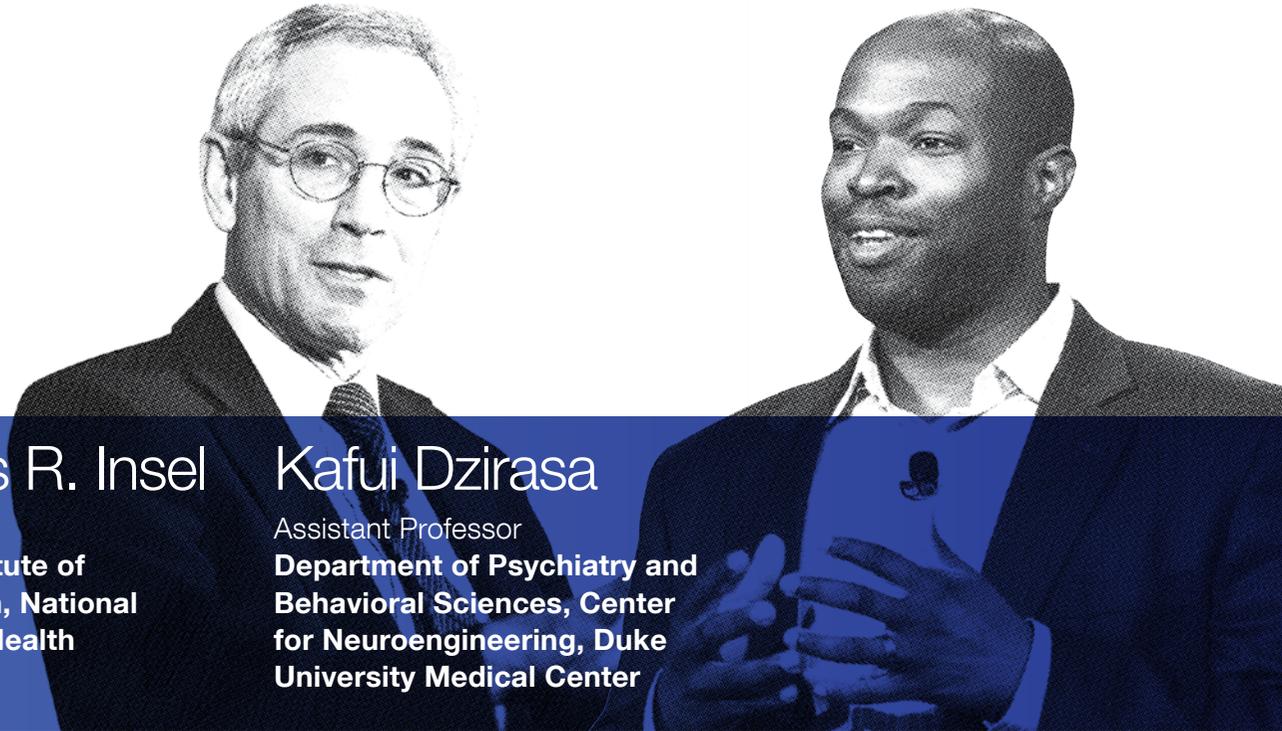


# Redefining Mental Illness



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**Insel and Dzirasa  
are challenging the  
way we think of  
mental illnesses.**

Every day, Thomas Insel and Kafui Dzirasa see mental illness rob people of who they are, devastate families, and ruin communities. And yet, Insel, who leads the agency that supports most of the world's behavioral health research, and Dzirasa, a physician-scientist who focuses on understanding how changes in the brain produce mental illness, remain optimistic. They share poignant thoughts on reframing mental illness, leveraging technology, and training the future mental health workforce.

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Where do you see real opportunities to make a significant change in the way we manage mental health?

**Thomas:** We need to reframe mental illness as a health problem — not a personal failure nor a moral

problem. In some ways, depression or schizophrenia are not different from heart disease and cancer. And yet, so much of what we think of as care for those with mental illness is outside the healthcare system. Reframing mental illness as a brain disorder pushes us to find solutions that come out of healthcare, instead of exclusively social services, where so much of the response resides.

**Kafui:** The more we understand about the brain's function and circuitry, the more we discover that treatment approaches are not pharmacological therapies alone. For example, transcranial magnetic stimulation uses focused magnetic fields to therapeutically change electrical properties in particular brain regions. I think we will be seeing more and more engineering solutions address the complexity of mental illness as well.

**Q: At a time when technological advances are redefining our daily lives, how do you think they can impact the way we deliver mental health care?**

**Thomas:** Smartphone technology could transform mental health care because the core of every diagnosis is abnormal behavior. There's no better way to get continuous, precise, and objective measures of behavior than what you can pull off a smartphone.

Additionally, we can leverage technology to deploy interventions in the form of cognitive behavior therapy or other forms of psychotherapy. This includes collecting standardized information from sensors that monitor behavior. This kind of closed loop approach, with technology providing the

sensors and the interventions, can have a big impact, both on the number of people being treated and the quality of care that they receive.

**Kafui:** You can imagine a world in which Siri is a first line tool for doing cognitive behavior therapy—where technology would analyze multiple stories and provide guidance, feedback, and information on behavioral strategies to improve mental health. A tool like this could one day be a powerful “therapist” that could provide insights never conceived in our current framework and could shape other new forms of scalable treatments.

You can also start to imagine having a kind of codex, or a Rosetta Stone, that will enable us to map out changes in different parts of the brain where we're seeing problems in brain cell communication. We can start to develop “neural

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prosthetics”—electrical devices that act something like pacemakers do in the heart, putting energy back into the brain—to fix gaps in communication across brain areas.

**Q: With these latest advances in technology, how do we train the next generation of mental health professionals?**

**Thomas:** Training for psychiatry is going to become very different. Perhaps the field itself will be rebranded as clinical neuroscience, reminding people that these are in fact disorders of brain circuits and that our diagnostic and therapeutic approaches will have to include monitoring and manipulating brain circuitry.

**Kafui:** Psychiatry in a lot of ways reflects where our society is. Now that we are in the midst of the technology revolution, we are starting to think about mental illness as disorders of brain networks and computations. Psychiatry is increasingly drawing people from different backgrounds, and the field will have to adapt to accommodate them. We're seeing more people with backgrounds in engineering,

mathematics, and computer science, and understanding how changes in the brain lead to mental illness will require people who are used to thinking about large, complex systems. For example, the question no longer becomes whether you have too much or too little dopamine but focuses more on how do increases in dopamine cause these large scale brain networks to work differently.

**Q: What systemic changes can be put in place to improve the way we deliver better mental health care?**

**Thomas:** For people with schizophrenia, we need to detect the early phase of their illness, ideally before they become psychotic. If they do start showing signs of symptoms—hallucination, paranoia, and very disabling symptoms—we must treat within two weeks, not within the 74-week timeframe that a recent U.S. study found was the period of untreated psychosis.

**Kafui:** We must make it a national priority to protect younger brains throughout the developmental stages. The prefrontal cortex is part

of the brain that is developing during adolescence—it's the latest to mature continuing through your early 20s. This is the part that determines judgment, impulse control, decision-making, and long-term planning.

**Thomas:** We need to create a learning healthcare system. Instead of thinking about how do we do research and implement it in practice, we need to actually go out and make sure families, patients, and practitioners are part of the process. Having a learning healthcare system moves practice into research. It uses data from care to identify what works and what doesn't, and optimizes those interventions to improve outcomes.

**Kafui:** Mental illness is one of the unique illnesses in that it takes away the ability of the person who's sick to advocate for himself or herself. Families and communities need to be part of the process, and we must figure out a better way to engage them early and often. They will be affected and are also the frontlines of defense. Mental illness robs people of who they are. Consider the years of productivity lost. If we can galvanize our nation, we might have a better shot at this.

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