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Why America's Top Mental Health Researcher Joined Alphabet

Tom Insel explains why he's ready to give Silicon Valley a try.

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Tom Insel

One of Thomas Insel's most dramatic initiatives as the government's mental-health research czar was to try to throw out the psychiatrists' bible, the*Diagnostic and Statistical Manual of Mental Disorders*, or DSM (see "NIMH Will Drop Widely Used Psychiatry Manual").

It bothered Insel, who has been head of the National Institute of Mental Health in Bethesda, Maryland, since 2002, that unlike AIDS or lymphoma, mental illness is still diagnosed on the basis of clusters of symptoms rather than "any objective laboratory measure" such as a biomarker or readout.

In fact, biological science hasn't had that many successes against depression or schizophrenia, despite the NIMH's $1.5 billion a year in grants and research spending. Psychiatric drugs haven't improved much in recent decades, and searches for the genetic causes of common forms of mental illness haven't yielded clear answers either. Such scientific frustrations may explain why Insel last week said he was jumping ship to join a subsidiary of Alphabet, the tech conglomerate formed in the restructuring of Google. Alphabet's Life Sciences unit is already exploring smart contact lenses, genomics, and cancer detection (see "A Deeper Look at the New Google").

Insel notes the obvious: wealthy tech companies have realized that health care is a bigger

business than software and gadgets (it's about 20 percent of the U.S. GDP), and so it's one they should get into. But he says he also became convinced that a tech approach might be well suited to mental illness, thanks to the "big data" being generated by genomics and medical imaging as well as the promise that personal technology could make health care "patient-centric" and continuous instead of focused on occasional doctor's visits.

‘‘In the future, when we think of the private sector and health research, we may be thinking of Apple and IBM more than Lilly and Pfizer," Insel says. He's not envisioning yet another app for managing diabetes or heart disease. Rather, he thinks smartphones could collect biomarkers of depression or psychosis via speech patterns, and dole out psychiatric interventions as well.

We spoke to Insel about his decision to head to Silicon Valley.

How were you recruited by Alphabet?

I was at a meeting with the person [Andy Conrad] who subsequently became the CEO of this new company. He is quite interested in doing something in mental health, but that is not his background. We were talking about opportunities and it became clear we had similar interests. He asked if I would like to do it at Alphabet rather than in government.

What interests did you have in common?

There are three areas of really clear shared interest. One is trying to figure out a better way to bring data analytics to psychiatry. The diagnostic system we have is entirely symptom based and fairly subjective. A second was a concern over how we approach psychosis—that we could move earlier in the chain to develop a preëmptive approach. And the third was autism and developing biomarkers [to diagnose it].

Those are all very much in the strategic plan of the NIH. It's great to know that a company like Alphabet is also interested.

What would a preëmptive approach to psychosis look like?

It's something that we are also funding at the National Institute of Mental Health. We are developing algorithms to identify and analyze speech as an early window into the disorganization of thought.

Do you think you can do something different in Silicon Valley than in Bethesda, where you oversee such a large research enterprise?

We'll see. I wouldn't be making the move unless I thought there was a chance to have a greater impact from the private sector.

We are at a really interesting moment in time. Technology that already has had such a big impact, on entertainment and so many aspects of our lives, can really start to change health care. If you ask the question "What parts of health care can technology transform?"–mental health could be one of the biggest.

Technology can cover much of the diagnostic process because you can use sensors and collect information about behavior in an objective way. Also, a lot of the treatments for mental health are psychosocial interventions, and those can be done through a smartphone. And most importantly, it can affect the quality of care, which is a big issue, especially for psychosocial interventions.

What do you mean by treating over the phone?

One of the best treatments for depression is cognitive behavior therapy. It's building a set of skills for managing your mood. You can do it with a phone as well as face to face. A lot of people with severe depression or social phobia or PTSD don't want to go in to see someone. This lowers the bar.

Is it possible to diagnose mental illness with a phone?

I'd say you can collect information over the phone that can help people manage their own treatment. Your question rests on a paradigm that is completely shifting. The old paradigm is you go to the doctor and they write a prescription. Whether you call it a diagnosis or just identifying the issue, there is an awful lot that can be done online. There is an attachment

for your smartphone than can see the tympanic membrane, and pediatricians can make a diagnosis [of ear infection] online. It's a world where you want to get the right treatments at the right time for the right people. As a consumer, you are close to the source of the information. All of this is a different paradigm that we are moving into.

Is Alphabet's approach to mental illness going to be primarily technological or biological?

I don't know that. We are going to explore what the opportunities are. We know their sweet spot is in data analytics. What they do really well is figure out how to analyze data. The opportunity is to take that skill and answer biological questions. What that means in terms of what projects the life science team takes on in mental health is totally undefined. Part of my move there is to figure it out.