

Cognitive Creativity



Do you work in a creative industry? In the digital age, the answer is ‘yes,’ whatever your profession. All you need to do is understand your potential – and then unlock it.

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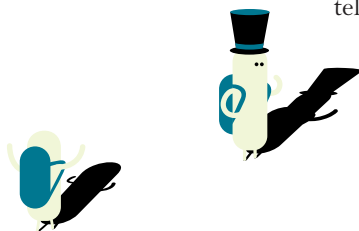
The digital revolution has popped the cork on creativity. Filmmakers no longer need to rely solely on studios to release their movies when YouTube and Vimeo reach an audience of millions. Writers can choose traditional publishers, or newer options like Amazon and eBooks. Musicians can skip six months in a studio for five minutes in a bedroom with a laptop. We have more outlets for creativity than ever before, but how do we harness the tools at our fingertips to make the most of our potential? Does it take a certain type of brain to produce these results, or can we learn to be creative, no matter what field we work in?

Dr Robert Root-Bernstein, a professor in physiology at Michigan State University, is the co-author of *Sparks of Genius: The 13 Thinking Tools of the World's Most Creative People*. He reckons creativity can be taught.

“Creativity isn’t about problem-solving,” he explains. “Once a problem is well defined, the solution often follows rather directly. In fact, the most creative people are actually the ones who point out where the problems are in the first place, but we don’t teach people how to do this.

“Creativity isn’t restricted to types of profession – it appears in every discipline,” Dr Root-Bernstein continues. “Look at lawyers and accountants. Why did we have the Enron scandal? Why are we having these problems with banks? This is people being creative, looking for loopholes and trying to push boundaries.”

In his book, Dr Root-Bernstein describes the creative process as requiring 13 tools that include observing, abstracting, imaging, and kinesthetic (i.e. multi-sensory) thinking amongst others. “Like carpenters’ tools, you have to learn when it’s appropriate to use each one,” he says. “Everybody has these tools to some degree but none of them are taught in any curriculum. Observation is key. If you don’t interact with the digital world and you don’t observe what’s going on, then you have no data to work with. Abstracting involves sifting out what’s important and what isn’t. Imaging is remembering what you’ve abstracted out. Kinesthetic thinking involves feeling what a system is like and putting it muscularly into your body. People talk about finding problems by how you ‘feel.’ While sitting in a meeting, something might not feel right and you get a knot in your stomach – that is your body telling you that something doesn’t fit together. ➤





People who are creative tend to feel that explicitly. Learn to pay more attention to how your body feels about a problem.”

No matter what profession you work in, by applying these tools you can reap rewards. For example, explains Dr Root-Bernstein, “within the field of engineering, research shows that the best quality for success is visual rather than mathematic ability. But when we train engineers, very few get formal imaging training.”

Currently, the internet offers problem-solving platforms such as Bill Gates’ Grand Challenges in Global Health initiative, which fosters scientific innovation and invites us to solve key health issues in the developing world. However, Dr Root-Bernstein believes that the next phase of digital creativity will move us from problem-solving to open-source problem-*finding*. “Grand Challenges involves experts inventing problems to solve. I would love to see online forums where people start debating what the problems are and offer criteria as to why Gates is not addressing the right problem for a disease in Africa. I think we will have progress much more quickly [that way].”

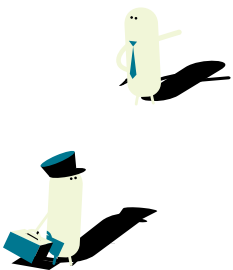
[lead to] more creative [discussion].”

According to Dr Kaufman, the impact of new digital tools on our creativity is akin to a second cultural ‘big bang,’ one that is reshaping not just our world, but also our minds. “The big bang of cultural explosion 10,000 years ago wasn’t a result of bigger brains evolving, but the ability to use new tools,” he explains. “Currently, we are seeing another cultural big bang. Due to the use of technologies that allow unprecedented levels of collaboration we can now utilize diverse kinds of minds in ways that we have never seen before. [For instance,] autistic people are currently not well served in traditional education systems, but they have great value to society in terms of their very detail-orientated thinking and a way of seeing the devil in the detail that most other people won’t.”

But it’s not just autism. “Schizophrenics possess great synthesizing abilities. New research shows that the combination of a schizophrenic frame of mind, coupled with the ability to shift to another mode of thought – such as analytical mode – to test those ideas is crucial to creativity. Developments in the digital age will soon allow people who are not served through



“Technology isn’t dumbing us down. It is adding to our repertoire. It gives us empowerment over our creativity.”



Bringing together many minds for discussion is an idea endorsed by Dr Scott Barry Kaufman, a professor of cognitive psychology at NYU, and co-founder of The Creativity Post, a non-profit web platform that features quality content on creativity, innovation, and imagination.

“Technology allows a lot more people to contribute to a single pie,” he explains. “A creative person is someone who is curious, open-minded, and on the lookout for new patterns of thought. The simple idea is that putting 10 minds with 10 views about something together in one place will immediately

regular routes to use these technologies on their own.”

Developments like the work of Google data artist Aaron Koblin [see p.66], whose open-source visualizations allow multiple users to contribute to a single project, tapping into the creativity of individuals regardless of their background. “He shows how we can use interfaces to get everyone involved,” Dr Kaufman explains. “It allows people with autism or schizophrenia to let their own unique abilities shine without anyone having negative expectations based on the label of their disability. [Koblin] has demonstrated how putting together lots of different individual voices can produce a wonderful final product.” ➡



There's still the niggling riposte that technology is dumbing us down, making us lazy, and dependent on machines to do our thinking for us. When the argument is put to him, Damon Horowitz, Google's in-house philosopher and Director of Engineering, laughs. "Technology itself isn't dumbing us down – though some of the things we build with technology have that effect," he says. "Technology is adding to our repertoire. It gives us empowerment over our creativity: Not just in terms of computer graphics, animation, and visuals, but what is available to us now are languages for expressing complex processes. We didn't have that before the digital age.

"Consider a field like urban planning," Dr Horowitz continues. "It's one thing to develop theories about, say, new ways that traffic might flow through a city, roughly based on precedents from previously observed systems. But, prior to digital technologies, we lacked a language that could express in great detail exactly how a complex system would work. In the past few decades, we've gained the ability to program models and run simulations, which often reveal unanticipated effects of our choices. And today, with the ease of prototyping and distributing lightweight applications, we can see how people actually behave if given new tools – so we can iterate on our ideas instead of just guessing."

Drs Root-Bernstein, Kaufman, and Horowitz are all quick to dismiss the distinction between so-called 'creative' and 'non-creative' industries, but agree that the most creative people tend to be the most passionate. Dr Root-Bernstein emphasizes that the key thing is to explore beyond your comfort zone. "Be curious about things you don't know anything about. Find an interest and develop it. Engage in lifelong learning. The most creative people are scared all the time. Jump off a cliff and have faith that you're not going to crash." ©



CREATIVITY IN ACTION

Dr Jay Parkinson is a pediatrician based in New York City committed to using digital technology to unlock the creative potential of healthcare. Here he explains how.

Doctors are not only uncreative but 'anti-creative.' On day one of medical school you realize that there's a militaristic hierarchy, so you don't question anything.

I've always been interested in technology – I started a business during my residency in 2003 taking people's CDs and converting them into MP3s to load onto their iPods. And in 2007 I started a new, more creative kind of digital practice.

I only accepted people from two Zip codes, Williamsburg and Greenpoint. Patients had access to my Google calendar so they

could see when I was free, then they'd tell me what their symptoms were, and send me their address. I'd get an iPhone alert, make a house call, and take payment via PayPal. Then we'd follow up by videoconference or email. I had to hack things together to make it work but it was doable enough for a guy like me with no programming training.

The response split into two camps: Traditional, old-fashioned doctors were, like, 'Get this punk outta here.' But then I made the cover story of the industry's trade magazine and there was this sense of, if they're legitimizing me, maybe it's okay.

Today, I have a design firm called The Future Well, which uses creative design and technology to improve health. Our latest initiative is called Sherpaa, and it launched on January 31st with Tumblr. Tumblr's employees get access to a network of doctors manning phone lines and email. We can use technology to keep an eye on the resources that are available to us: Who's on call? Who doesn't have a patient and can get on the phone with us right now? We're creating a microsystem of healthcare as it should be.