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## Entrepreneurs' Brains are Wired Differently

by Peter T. Bryant and Elena Ortiz Terán | 11:00 AM December 19, 2013

Windows of entrepreneurial opportunity can open unexpectedly and briefly, typically under conditions of risk and uncertainty. Founder entrepreneurs must therefore be alert, tolerant of ambiguity and able to respond quickly when opportunity knocks. But does this mean that founders' brains work differently, compared to other people, when detecting and choosing opportunities? Our research suggests that they do.

To learn more about the way founders think, we conducted a laboratory experiment that measured brain activity during a simple decision-making task. A group of 30 founder entrepreneurs, as well as 30 non-entrepreneurs, participated in a classic experiment called the Stroop Test

([http://www.bbc.co.uk/theoneshow/images/getinvolved/stroop\\_test.jpg](http://www.bbc.co.uk/theoneshow/images/getinvolved/stroop_test.jpg)) . In this experiment, people are shown a series of images on which the names of colors are spelled in discordant colors. For example, the word red may be written in a blue color. Participants must then distinguish between the word itself and the color used to print it.

We measured brain activity over multiple cycles of the task, each cycle lasting one second. The brain activity of founder entrepreneurs was significantly different, compared to the non-entrepreneurs. In the initial stage of brain activation, when people first recognize the problem, founders were quicker to respond and were less inhibited. They quickly absorbed and embraced the problem, despite its ambiguity. In contrast, the non-entrepreneurs were slower during this initial phase. They tried to resolve more of the ambiguity before continuing.

In the later stages of problem processing, also within a split second, the founder entrepreneurs were different again. They dedicated more brain resources—in terms of information processing and speed—to resolve residual ambiguities. In other words, the entrepreneurs thought more intensely about the problem after they had already embraced it. In contrast, the non-entrepreneurs used less brain resources during this latter phase, presumably because they had resolved more ambiguity during the initial stage of the process.

These results are surprising and novel from the perspective of neuroscience. But does split-second decision-making in a lab say anything about how entrepreneurs really think? Evidence suggests it does. Quick responses matter. Imagine a potential founder who is scanning for opportunities — maybe there are early signs of new customer needs in the mobile e-commerce market. If she or he is not ready to embrace and explore this ambiguous problem, the opportunity will go undetected. Or consider a founder who is confronted with an urgent problem that must be tackled immediately. There is no time to resolve ambiguity and uncertainty. In fact, it may not be possible to do so. Instead, the founder must embrace the problem and move forward. In practice, we observe this kind of behavior often. Entrepreneurs frequently dive into a challenge without fully analyzing it. Deeper understanding evolves over time as they experiment and discover more about the market and customer, as in the Lean Startup approach to venture creation: embrace the problem, discover the customer, experiment and prototype, be ready to pivot and if necessary fail fast. We believe we are seeing this process sped up. And for the first time, we show that the brain is fundamentally involved.

Another study confirmed our thinking. This time we interviewed founder entrepreneurs about their decision-making processes. Founders were clearly more inclined to quickly grasp an opportunity, using a set of simple tests: did the opportunity fit their core strategy; did they already know the market; could they trust the other parties involved; did they have a good gut feeling; and finally, was the worst case scenario not too bad. A negative answer to any question could be a reason to stop. In this fashion, the entrepreneurs used simple criteria to rapidly embrace or reject opportunities. As one entrepreneur explained: "I think often I'll make a tentative decision on gut, and I could do that almost immediately. I might within two minutes have the information that I'll think, yes, this is worthwhile. Then I'll go

and hunt around for information that will help me to decide if that's the right decision." Just as in the first experiment, this entrepreneur responded quickly to the problem and was happy to delay the resolution of ambiguity and uncertainty until later stages of decision-making.

When combined, our studies add new evidence to support the view that founders think differently in decision-making, especially about problems and opportunities. Similar to the Lean Startup approach, founders embrace ambiguous problems more quickly, using simple rules to move forward, then dedicate more effort to resolve ambiguity and uncertainty during later stages of decision-making. In these respects, it appears that founders' brains are wired differently. We expect this difference will be explained by a combination of factors: a genetic component, early development and learning, and adult experience in problem resolution and decision-making. The brain is not hard wired, it is richly complex. For us, this is good news. Change and variety are part of being human, and so we shouldn't be surprised that entrepreneurs' brains are a little bit different.