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Is the Internet Killing your Creative Potential?

Lessons from the Art of Paper Airplane Making

By Matt Stefl and Andrew Rohm, PhD

The managers' capacity for true creativity and deep critical-thinking risks being diminished by our 24/7 connectedness in an information-intensive world. In order to investigate this, the authors devised a simple experiment involving the creation of paper airplanes to gauge whether Google search behavior (serving as a proxy for our direct access to information) encourages or inhibits creativity. Our primary research question examines whether outcomes of design thinking taking place without instant access to information via the Internet would be more or less creative?

Cultivating Creativity

Creativity, which the authors define as "the ability to generate unique and novel ideas that are relevant and/or useful," is high in demand and low in supply in today's workforce. This is especially true for marketing and advertising (the fields in which the authors work and teach). These fields have been disrupted by vast changes in technology, buyer behavior, media consumption, and ways by which companies communicate with consumers. Moreover, this level and pace of change intensifies the never-ending need for creativity. Since the days of advertising demigods David Ogilvy and Bill Bernbach, creativity has been vital to building and maintaining a competitive-advantage. This has never been more the case than it is today. Yet, a 2012 study by Adobe indicated that only one in four people thinks they are living up to their creative potential.[1]

Creativity, however, is not just a skill reserved for, or unique to, the so-called *creatives* who sit in their agency's creative spaces throwing out creative ideas to their creative colleagues on white boards. Creativity is a skill needed—indeed required—in just about every role within the marketing discipline, including product and website development, communications, research, insight generation, brand and media strategy, customer service, and myriad other functions. In short, "businesses win through new ideas"[2] with creativity central to the DNA of many successful organizations.

The Googleization of knowledge—that ultimate searchability—creates a great bounty of potential avenues for research. It cannot, however, become a substitute for the strange vagaries of human intuition and creative leaps. We need to insist on a certain randomness, and a large degree of pure, haphazard discovery, in the tools we use to explore our world.

—*Michael Harris,* The End of Absence: Reclaiming What We've Lost in A World of Constant Connection[3]

The Google Paradox

Delivering creative results—through unique and novel products, solutions, and ideas—is difficult and mentally taxing. Fortunately, our access to the Internet has streamlined and simplified virtually every task that one might encounter—but at what cost? For instance, not too long ago accessing relevant and helpful information required a fair amount of hard work and perseverance. Before 1996, when the MapQuest web service was launched, we had to toggle between Thomas Guide pages and difficult-to-fold-and-unfold maps to "calculate" the best driving route in our heads. Or, we had to dust off the cherished hardcover Encyclopedia Britannica set to learn more about the topic of physical chemistry and learn how to use the dreaded microfiche machine at the library to get even more in-depth information. Fast-forward 20 years and the answer to, and opinion on, nearly anything is just a click or finger swipe away.

One of the co-authors recently came across the following number sequence posted by *Jeopardy!* champion, Ken Jennings, which challenged the reader to crack its code (*132 30 210 110 30 210 210 90 210 56 380*). Intriguing, yes. Yet after studying it for several seconds and testing a few possibilities, he became frustrated and fatigued and simply Googled it. Within seconds, he found the solution. We have seen this same thing happen numerous times in both the boardroom and the classroom—ask a question that begs a thoughtful response, and watch people turn to the Internet for the answer. After all, it is important to work smarter, not harder, right? Perhaps not. Herein lies the paradox.

If the brain is really like a muscle, one could argue that life in today's information age could be causing ours to atrophy, ultimately robbing us of our capacity for deep and difficult critical-thinking and creativity. Sadly, this frightening notion was not stolen from a bad science fiction flick. In a 2012 paper titled, "The Creativity Crisis" by Kyung Hee Kim, the author presents empirical evidence that our country's creative quotient has been on the decline for the past three decades—and even more so among young people.[4] Although the author does not suggest whether the fall in creativity has anything to do with the rise of the Internet, the timing seems more than coincidental. Writing about the effect of the Internet on the human brain and the way we process information, Nicholas Carr, in *The Shallows*, argues that the demise of our creativity is indeed *not* a coincidence. The ease of online search and our accessibility to almost infinite bits of information has begun to program our brains to operate in the shallow waters of thought and creativity.[5] Couple this with the rise of the *exponential organization,*[6] which demands that businesses and their employees generate answers at breakneck speed, and it is no surprise that we look more to the Internet, and less to our own innate imagination, for help.

What the Net seems to be doing is chipping away my capacity for concentration and contemplation. Whether I'm online or not, my mind now expects to take in information the

way the Net distributes it: in a swiftly moving stream of particles. Once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski.

—*Nicholas Carr,* The Shallows: What the Internet is Doing to Our Brains[7]

A Crash Course in Creativity

In order to further investigate the role of creativity and design thinking in this age of online search and immediate access to information, we began with a quick Google search (irony intended) of the academic journals. Yet nothing particularly insightful jumped out. Still determined, we—a former brand planner and strategist and a former aerospace engineer and seasoned academic—decided to conduct a simple experiment. We sought, specifically, to gauge whether Google search behavior encouraged or inhibited creativity. At the heart of the experiment, we asked participants (consisting of 72 undergraduate students) to "make a unique and far-flying paper airplane."

This approach hinged on the widely accepted understanding of creativity as something both "unique and useful."[8] In this case, the originality of the paper airplane design was our measure of *uniqueness* and distance flown measured *usefulness*. In order to control for search behavior, our student test subjects were split into two groups: half were instructed to employ Google to complete the airplane task *(the Google Group)* and the other half were told to design their planes without the Internet and would have to simply rely on their own experience, intuition, and imagination *(the non-Google Group).*

We then recorded each flight's distance in inches and rated each participant's plane on originality (on a score of 1 – 7). Each co-author independently evaluated the airplane designs in a blind review, and then together we reconciled subsequent differences. Additionally, in order to understand and control for inherent creative ability, participants were asked to take a simple online creativity test. Participants' scores were analyzed and were not found to correlate with the overall creativity of their paper airplanes designs. After analyzing the unique nature of the planes and the "flight data" from our participants, two interesting findings emerged:

Overall, the Google group's planes were more creative.

The Google group's planes flew 20 percent further than the non-Google group's. This was driven by two aggregate findings: 1) the Google Group's planes actually worked—most managed to actually fly forwards, and 2) there were a higher number of catastrophic failures in the non-Google group—a few planes fell out of the sky upon takeoff, and one even flew backwards. Additionally, the Google group generated planes that were, on average, more unique than the non-Google group.

The experiment's most creative planes, however, were born of pure imagination.

The two most unique and furthest flying planes were created in the non-Google group. These planes' designs derived from personal experience and intuition, instinct, and pure

imagination. Plus, the students behind these planes were neither aerospace engineers nor were they particularly well-versed in the art of paper airplane making. What they did, however, was reject the convention of what it means to be an airplane. They created radically different and disruptive designs given the experiment's structure and task, which was to create a unique and far-flying airplane with a piece of standard size copy paper. Indeed, one participant simply crumpled up his paper into a tight ball…and threw it…far. Although it did not adhere to conventional airplane design, this design solution did fit within the experiment's guidelines given to each participant. The lesson here is that while it is important to establish guidelines around initial idea generation, it is equally, if not more, important to disrupt accepted conventions and norms by asking questions such as "does an airplane have to have wings?"

Thoughts and Implications

The Internet is no doubt an effective and efficient source of time-tested, refined, and reliable solutions. We would hate to think of where we would be without the millions of smart people and organizations freely sharing their insights, ideas, and solutions with the world—complete with step-by-step instructions. #GoogleIsGreat.

With respect to creativity and design thinking, however, we propose that it is essential to elevate our awareness of how, when, and to what end we are using the Internet, and to be mindful of its advantages and limitations. With respect to search behavior, researchers have proposed two types of related exploratory behaviors that can lead to creative outcomes: 1) *diversive curiosity*, where we search for solutions at a broad and varied level and that can lead to new stimuli and experiences, and 2) *specific curiosity*, where our search tends to be more narrowly focused on a particular purpose or activity.[9]

On one hand, diversive curiosity led a couple of students in the non-Google group to redefine what we consider to be a "proper" paper airplane. On the other hand, the specific curiosity shown in the Google group led many students to explore existing, time-tested paper airplane designs as a starting point for their own. The point of all this is, there is no one-size-fits-all approach to the most effective creative process.

Taken together, our findings across the Google and non-Google creative groups highlight how on one hand creativity *sans* Google and the Internet might be best brought about through diversive curiosity and exploration. On the other hand, specific curiosity may be the type of creative exploration best stimulated by way of Google. In this way, our findings also suggest that the act of creativity is not as much a discrete process, dependent on one single approach, yet a process that depends on the task. Further, the creative process may vacillate between both diversive and specific thinking and exploration.

That said, one important implication of this study is to be mindful of the Internet's impact on our true creative potential. Although to do so is tempting, relying too heavily on what others have done before can lure us into the traps of convention and incremental, rather than radical and disruptive, innovation. The next time you are faced with a problem that begs for a creative solution, before looking to Google, try asking yourself the following questions:

- Would a truly original or unique solution, albeit risky, have a potentially higher yield versus something that has been done before?

- What are the risks of a *me-too* solution? Am I playing *not to lose* instead of playing *to win*?

- Do I fully understand what problem I am solving (for instance, how to make a piece of paper fly far versus how to make an airplane that could actually carry passengers)?

- Have I paused to exercise my brain and wrestle with (even if for just one minute) possible solutions before looking to the wisdom of the Internet?

Summary

The results reveal two important findings: 1) in general, using Google search generates marginally more creative design thinking and solutions, and 2) although resulting in far more failures, the *most radical and truly creative solutions* were born of pure imagination without the aid of the Internet and Google. The implications of this study point to the role of both *diversive* and *specific* curiosity in suggesting that the act of creativity is not a discrete process, but rather one that depends on task and context. These findings are important to organizations whose success depends, in part, on creative thinking in an information-saturated world.

It is human nature to seek pleasure and to avoid pain, and so it is no wonder that we embrace Google's easy access to answers. At the same time, as we saw with the non-Google group's results, relying on our intuition, imagination, and exploration for fresh thinking has the potential to bring about great success. But along with true creativity comes the ever-present risk of resistance and frustration, not to mention outright failure. But in the end, it is well worth the struggle. The world's best answer might actually exist somewhere between our ears, just waiting to be posted to the Internet for others to access and use.

About the Author(s)

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