

Elisabeth Barnett
Professor Jeffrey Robbins
Convenience: A Means to an End (of Human Autonomy)

Abstract

In today's world of rapidly advancing technologies, there seems to be no limit to what can be created. We are at a point in history where there aren't many things people do without the use of technology. Similarly, there aren't many tasks today that you could think of that don't have some sort of technology available as an aid. For example, there are now more than one million smartphone applications (apps), many if not most of them doing things for us that we once had to do for ourselves, with or without less convenient technology. The exponential escalation of convenient technology, all under one roof, is driven by a common conventional wisdom which most people share. Under this "wisdom" umbrella, it is agreed that better technology that does more for us is better for us too. In the simplest terms, this conventional wisdom demonstrates our attraction to convenience. Subconsciously, convenience is arguably our number one concern at all times and is what most people equate to better; very few would choose the less over the more convenient.

This concept that we are attracted to convenience involves what Thomas Mann calls the "Principle of Least Effort" (91) in his book *Library Research Models: A Guide to Classification, Cataloging, and Computers*. Mann explains that "this principle states that most researchers (even 'serious' scholars) will tend to choose easily available information sources, even when they are objectively of low quality, and, further, will tend to be satisfied with whatever can be found easily in preference to pursuing higher-quality sources whose use would require a greater expenditure of effort" (91). In one example, an eleven-year-long study of groups such as faculty, students, and other staff at a particular university revealed that "the convenience of doing online searches was more important to end users than the quality of search results" (95). This study was analyzed further, and it can be concluded that, "for most types of users, the responsibility for quality searches rests with the library, because infrequent or disinterested users do not perform effective searches" (95). But Mann uses his definition and research to remind his readers that it is not just the casual researchers that are so inclined to choose convenience over quality; there is a heavy "importance that scholars attach to convenience" in doing research in all fields" (95-96).

This shows that someone's status and level of education does not exclude him or her from common and instinctual inclinations, and further that few are immune to the conventional wisdom.

The fact that people generally agree on this 'conventional wisdom' suggests that they all have a similar understanding of the truth about the virtues of convenience. The meaning of truth, however, is a difficult parameter to define especially in the case of technology. Although attempts to try to find an absolute truth are common, the reality is that one hundred percent of all people will never be in accordance on any subject. The only thing that people can be certain of is that each individual has his or her own views on what is or is not the truth. These individuals can then congeal into groups, where their ideas are collected and concentrated, creating a case of overwhelming majority rule.

The hyper-rapid advances in technology today have created an undercurrent of unease that is most worrisome for the more anxious who are trying to uncover the 'truth' about the conventional wisdom. Does good technology automatically translate to "good for us"? With new technology that has been and is continuing to be developed, such as GPS navigation and the internet, the capitalizing on the powerful draw of convenience may actually be harming us more than helping us. My position is the 'truth' is that nothing can ever be purely beneficial, so there must be a downside to this manifestation of convenience; the big question is, how much of a downside?

The effects of the growing use of new technologies are becoming more noticeable with GPS navigation and the internet as cases-in-point. With GPS comes the availability to get directions to anywhere that you want to go at the touch of a button, which many people have become accustomed to using to navigate them through their high-speed lives. This can have

major negative effects on their memory and their ability to form and utilize cognitive frameworks. Unfortunately, as Canadian author and journalist Alex Hutchinson has expressed in his article “Global Positioning Systems,” “the increase in GPS has meant that people spend less time learning details about their neighborhoods” and that drivers “using GPS [form] less detailed and accurate maps of their routes than those using paper maps” (para. 15). With a Ph.D. in Physics from Cambridge and a history with the U.S. National Security Agency working on quantum computing and nano-mechanics, Hutchinson has a high level of knowledge about current advanced technology and how it is changing people; but it doesn’t take a scientist to see that the way people think today is different now than how people did 50, or even 25, years ago. It is also obvious that people like GPS because of the convenience leading critics to argue that generations today are becoming ‘lazy’; but the technological changes our population is experiencing may be deeper than a widespread increase in laziness.

Even more so than GPS, people rely very heavily on the use of the internet, or more specifically Google, the world’s most popular search engine. With respect to research, some might even go as far as asserting that Google is the go-to solution for everything and anything today. With massive amounts of information at one’s fingertips, it is hard to pass up the use of the internet or a Google search because of its convenience, especially on the anywhere, anytime smartphone. In “Is Google Making Us Stupid?,” Nicholas Carr, a Pulitzer Prize nominated and *New York Times* best-selling author, “the Net is becoming a universal medium, the conduit for most of the information that flows through my eyes and ears and into my mind. The advantages of having immediate access to such an incredibly rich store of information are many, and they’ve been widely described and duly applauded” (para. 4). This side of the story is usually all people pay attention to. The ‘perfection’ of the internet, however, is not so perfect, and Carr has experienced that first hand. The price he has had to pay for the convenience of the internet is that

“what the Net seems to be doing is chipping away my capacity for concentration and contemplation. My mind now expects to take in information the way the Net distributes it: in a swiftly moving stream of particles” (para. 4).

Thanks to convenient search on the internet, it seems that people are becoming increasingly shallow, quickly finding information that they need on the internet, using it, and discarding it as soon as they are done with it; there is minimal demand for engaging lengthy, complex, nuanced literature in print because very little information is incorporated into long-term memory. This means that instead of doing in-depth research as it was once done in library stacks, people are inclined to search for tidbits of information on the internet instead. This causes them to only retain information being used in the short-term. A recent example of this concerns the Encyclopedia Britannica. The set of these encyclopedias has been a coveted status symbol in homes in the past, but “after 244 years, Encyclopedia Britannica will cease production of its iconic multi-volume book sets” (Pepitone). The company “usually prints a new set of the tomes every two years, but 2010's 32-volume set [was] its last. Instead, the company will focus solely on its digital encyclopedia and education tools” (Pepitone).

The encyclopedia Britannica transitioning from print to online shows how much people demand convenience and how this demand changes technology over time. By being able to experience different time periods of technological use and involvement, Carr describes his understanding in a way that generally most people would be able to relate to. He very eloquently paints the image that “once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski” (para. 4). We use the internet because it is convenient but it is scary to see the effects of what it does to us - in around 15 years, the internet has had the power to alter human brain function. Although products of convenience are believed to ‘further’ our knowledge, they may just be changing it, or even corroding it, instead.

As with Carr's concern about the internet's effect on how his brain deciphers and retains information, Tzu-Chien Liu and Po-Han Lin, two graduate students from the National Central University in Taiwan, are interested in a similar effect on words. They conducted a study exploring the possible effects of technological convenience by "exploring the behaviors and performances of learning with computer-mediated dictionaries" (Liu, Lin). They explain that "'convenience', as a consequence, could potentially eliminate any positive learning process altogether" (Liu, Lin). This is because, "for example, when using a conventional book dictionary, the user must temporarily utilize his or her working memory (WM) by mentally holding the word while actively searching through the pages," but the use of an on-line resource eliminates a vast amount of required brain work (Liu, Lin). In support of this, findings indicate "that longer searches tend to increase reading time," which occurs when a user reads a book rather than uses the internet. (Liu, Lin). This suggests that using the internet to learn and read decreases the amount of text we read and information we retain. Although using online dictionaries may be more efficient and time-effective, people are sacrificing quality for convenience. Once again, it may be dangerous using the internet for so many things because of the way it seems to be changing our brains.

Although the first people to blame for technological problems are often the creators, the many issues that the underlying convenience in products has been causing today cannot be fully blamed on their designers. With respect to libraries, Thomas Mann explains how "it is necessary to belabor the reality of the Principle of Least Effort for a specific reason, namely, that system designers who ignore it...often assert that it is not their fault when their systems fail to deliver the best information" (98). They rather blame the flaws on the users, saying that the "problem is that its users are lazy" (98). This "shift" in the blame may or may not be justified, but it is safe

to say that it is most likely a combination of flaws in the users and designers. Both, in their own way, are succumbing to the draw of ease.

In the realm of marketing, one reason that products drawing on the power of convenience are such a hit on the open market is something that marketing guru Martin Lindstrom calls ‘mirror neurons,’ as discussed in his book *Buyology*. Because the draw of convenience is subconsciously so deeply rooted, our brains make sure that we get what we want by causing us to imitate what we see. Mirror neurons are “neurons that fire when an action is being performed and when that same action is being observed” (54). Their existence has been confirmed with “fMRI and EEG scans of the regions of the ... inferior frontal cortex and superior parietal lobule...as these regions are activated both when someone is performing an action, as well as when the person observes another person performing an action” (55). In the following quote, Lindstrom describes situations caused by mirror neurons that are common occurrences for many people:

Have you ever wondered why, when you’re watching a baseball game and your favorite player strikes out in the top of the ninth inning, you cringe – or alternately, why, when your home team scores a goal or a touchdown, you pump your arm in the air? Or why when you’re at the movies and the heroine starts weeping, tears well up in your own eyes? What about that rush of exhilaration you feel when Clint Eastwood or Vin Diesel dispatches a villain – or that alpha-male stride-in-your-step you still feel an hour after the movie ends? Or the feeling of grace and beauty that floods through you as you observe a ballet dancer or listen to a world-class pianist? Chalk it up to mirror neurons. (55-56)

Just as mirror neurons are responsible for these feelings, they are also responsible for the urges that people get to buy things. Why do some people have all three versions of Apple’s iPad? Or

all the types of iPods that were ever produced? They don't actually 'need' these items, as they are so similar, but it's because once they saw someone else with them, they had to have them too. Although mirror neurons are natural, they tend to override rational thinking, especially when involved with making purchases; "researchers generally agree that it takes as little as 2.5 seconds to make a purchasing decision," (63) or rather to have your brain make one for you.

Since convenience is a driving factor in the goods people consume, it seems that this factor stems from primitive roots with the instinct to be efficient (and take the path of least effort) with food energy in a world of scarcity as hunter-gatherers. According to Christophe Morin, co-founder of SalesBrain with a MBA in Market Research, "the brain has been dependent on instinctual responses for millions of years. And it will continue to do so for a long time since biological adaptation to a fast changing environment is too slow." Today, this has been driven out-of-whack in a marketing world exploiting its manifestation in the draw of convenience. Marketers know that a "system which provides easier access, specifically physical convenience, will be more effective than a system" that is not as convenient (Mann 99). Because of the desire for convenience in goods, marketers in the business world are looking for the most effective ways to advertise their products, and the new science of neuromarketing is helping them accomplish that goal.

"Neuromarketing is an emerging field that bridges the study of consumer behavior with neuroscience" that is "gaining rapid credibility and adoption among advertising and marketing professionals" (Morin). Many marketers and advertisers are now looking to get inside people's brains to obtain more concrete impact of ads assessments, transcending conventional methods of advertising which depend on "consumers' willingness and competency to describe how they feel when they are exposed to an advertisement" (Morin). Most conventional market research had

failed miserably in the past, but “the emergence of neuroimaging techniques has offered exciting methodological alternatives” (Morin).

To apply neuroscience to marketing, neuroscientists use an fMRI scanner to record and analyze brain activity of people when either testing products or viewing advertisements. With the use of the fMRI scanner, much focus is placed on the frontal lobe of the brain which “is considered the seat of our executive function (EF) which manages our attention, controls our short-term memory, and does the best of our thinking – especially planning” (Morin). Another method for recording physiological responses is electroencephalography, or EEG. “When EEG is used for a marketing research experiment, electrodes are placed on the scalp of a test subject, typically by using a helmet or a band. Brain waves can be recorded at very small time intervals” (Morin).

Although neuromarketing utilizes amazing scientific advancements, this may mean that marketers can have access to information that one would have rather kept private. They now have the ability to “peer into the mind of consumers” with “increasing use of functional MRI machines” as described in the article “This is Your Brain on Advertising – Neuromarketing Lets Marketers Get Inside Your Head” by John Goddard, a business reporter for the Toronto Star (para. 1). Goddard explains how, for example, “the brain of a person watching a car advertisement from inside an fMRI machine would light up certain parts of a monitoring screen” (para. 9).

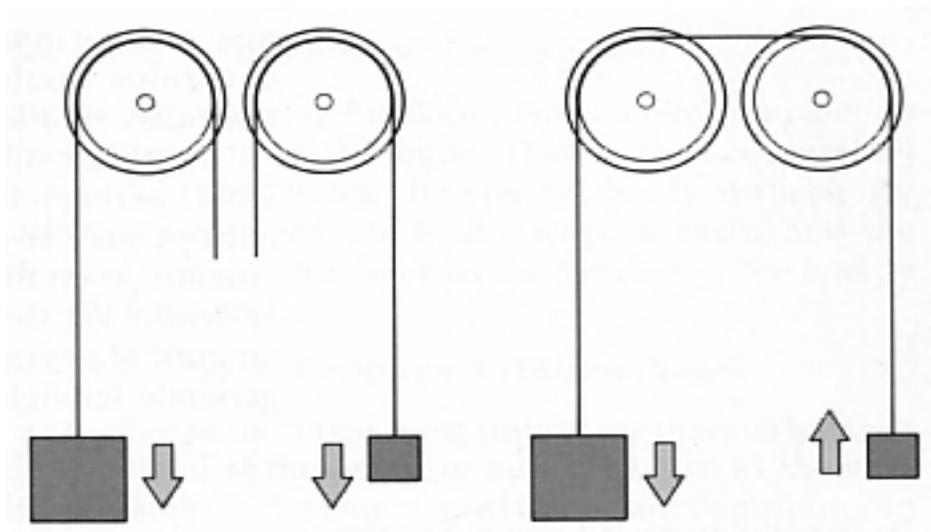
It is safe to say that marketers know exactly how to get your attention and keep you interested, which suggests the technique may also be able to sell products that consumers never knew they needed and were unaware that the decision was actually being made for them. These marketers are picking through our brains and targeting the most sensitive areas, and most people

aren't even aware of it. But from a marketer's perspective, for an ad to be successful, it needs to appeal to people's subconscious; more scientifically, the focus is on the hippocampus concerning memory and the amygdala concerning emotion. This technology is the kind of invention that begins to display human motivation as concrete, giving a definite answer to our response. Once technology can explain our every move, human autonomy is threatened and there is no telling what consequences may follow.

The use of neuromarketing has not been perfected yet but it is definitely becoming more popular as a marketing tool with the potential for great power and influence. Concerning the possibility that technologies capitalizing on the draw of convenience could have an effect on brain function, the second law of thermodynamics – The 2nd Law – could have a very important place in latching onto what is really going on. According to the 2nd Law, in one of its expressions, you can't concentrate order without displacing chaos someplace else. If the use of increasingly powerful convenience-exploiting technology is said to be the new order, the compensating chaos will, with increasing efficiency, continue to be displaced into the brains, bodies, and relationships of its targets. The way this works is that convenience-exploiting technology eliminates human mental, physical, and social effort. If effort keeps us in shape, its systematic elimination injects chaos. In this way, the rising order of technology displaces chaos into human minds, bodies, and face to face affairs.

In his book *The Second Law*, British chemist and former Professor of Chemistry at the University of Oxford, Peter W. Atkins explains the essence of the 2nd Law as follows: “The unnatural may be contrived at the expense of the natural. So long as we can drive one change by another, one change may be constructive and lead to a local reduction of entropy. But elsewhere, and coupled to the first, there must be a process that generates at least a compensating amount of entropy” (157). Entropy is the measure of disorder, the inability of energy to be usefully

deployed. What Atkins is trying to explain here is that for any action that is believed to create ‘order,’ there is a corresponding process that ideally generates the same amount of, but in reality, always more disorder. This tug of war between order and chaos can be demonstrated through the following image from Atkins’ book (167):



The image depicts a weights-over-pulley analogy of the 2nd Law demonstrating rising order linked to compensating chaos. When the pulleys have separate ropes, both weights fall, but when the pulleys share a connection it can be seen that the heavier falling weight pulls up the lighter weight. In this case, the two weights are connected by a rope, which represents the draw of convenience. The ‘perceived’ order is the smaller ascending weight. As a metaphor, it represents increasing order as lower entropy; this rising weight includes advancing technology like Google, the internet, Facebook, twitter, smartphones, GPS, and the techniques of neuromarketing. On the other hand, the larger falling weight, a metaphor for decreasing order or increasing chaos, is meant to represent the corrosion of cognitive map development, increasing shallowness of reading and thinking, negative effects on long-term memory, and the obesity epidemic as the escalating result of the removal of human effort.

This depiction makes it possible to explain that the negative effects, or chaos, from advancing technology may be outweighing the order that people, under the spell of the conventional wisdom, assume is being created.

Neuromarketing is believed to be one of the new technologies creating order, but this may not be the case. Even though neuromarketing is a new innovation, many professionals and scholars have already begun to express critical views. “Recent opinions of neuromarketing within the neuroscience literature have strongly questioned the ethics of applying imaging techniques;” even professionals in other industries have some mixed feelings (Eser, Isin, Tolon). Neuromarketing is questionable because of its potential to send subliminal messages to the masses and alter their normal behavior in favor of companies’ marketing interests, which are not necessarily people’s best interests. Martin Lindstrom explains that “subliminal messages are defined as visual, auditory, or any other sensory messages that register just below our level of conscious perception and can be detected only by the subconscious mind” (70). This is why these types of messages are a concern; people are not even aware that they are receiving them and have no ability to control the decision of whether to accept or reject them.

In *New York Times* reporter Natasha Singer’s article “Making Ads that Whisper to the Brain,” one of the professionals that she quotes gives an interesting example that ““if I persuaded you to use Toothpaste A or Toothpaste B, you haven’t really lost much, but if I persuaded you to choose President A or President B, the consequences could be much more profound.””

Neuromarketing may be a groundbreaking scientific development, but it can potentially be used to accomplish both good and bad – ““the fact that we can use this technology to do [certain things] doesn’t mean we should”” (Singer).

Regardless of oppositions to neuromarketing, “there are no explicit bans against subliminal advertising in the United States or the United Kingdom” as of now (Lindstrom 70).

One positive fact is that “the Federal Trade Commission has taken the official position that a subliminal ad ‘that causes consumers to unconsciously select certain goods or services, or to alter their normal behavior, might constitute a deceptive or unfair practice’” (Lindstrom 70). But as neuromarketing has just reached its 10 year birthday, it is not quite a mainstream method at this point. There is plenty of time to develop regulations and laws to make it an ethical practice. Convenience, on the other hand, is a deep-rooted, subconscious draw that once made perfect sense in a world of scarce food resources – you couldn’t afford unnecessary, energy-consuming exertion – but is now out-of-whack and exploited in ways that harm. People like convenience, but unfortunately this powerful instinct may be having a negative effect on their brain function and our functioning as humans, as the still increasing ill health consequences of obesity visibly certify; convenience will always be a hurdle for us, and it is each individual’s job to deal with it to better themselves and their brains. Overall, it is clear that there are both pros and cons to advancing technology, making now a good time to take a second look at the conventional wisdom on convenience.

Works Cited

Atkins, P. W. *The Second Law*. New York: Scientific American Library, 1984. Print.

Carr, Nicholas. "Is Google Making Us Stupid: What is the Internet Doing to Our Brains." *The Atlantic*, July/Aug. 2008. 1 Feb. 2012

Eser, Zeliha; Isin, F. Bahar; Tolon, Metehan. "Perceptions of Marketing Academics, Neurologists, and Marketing Professionals About Neuromarketing." *Journal Of Marketing Management* 27.7-8 (2010): 854. EBSCO: Business Source Premier (EBSCO EIT) (XML). Web. 28 Feb. 2012.

Goddard, John. "This is Your Brain on Advertising – Neuromarketing Lets Marketers Get Inside Your Head." *The Star*, 18 Jan. 2012. 1 Feb. 2012.

Hutchinson, Alex. "Global Impositioning Systems: Is GPS Technology Actually Harming Our Sense of Direction." *The Walrus*, Nov. 2009. 1 Feb. 2012.

Lindstrom, Martin. *Buyology: Truth and Lies About Why We Buy*. New York. Broadway Books, 2010. Print.

Liu, Tzu-Chien; Lin, Po-Han. "What Comes With Technological Convenience? Exploring the Behaviors and Performances of Learning with Computer-Mediated Dictionaries." *Computers in Human Behavior* 27.1 (2010) : 373-383. Thomson Scientific: ISI Web of Knowledge--Web of Science. Web. 27 Feb. 2012.

Mann, Thomas. "Library Research Models: A Guide to Classification, Cataloging, and

Computers." New York. Oxford University Press, 1993. Google Books. Web. 28 Mar. 2012.

Morin, Christophe. "Neuromarketing: The New Science Of Consumer Behavior." *Society* 48.2 (2011): 131-135. *OmniFile Full Text Mega (H.W. Wilson)*. Web. 27 Feb. 2012.

Pepitone, Julianne. "Encyclopedia Britannica to Stop Printing Books." *CNNMoney*. Cable News Network, 13 Mar. 2012. Web. 11 Apr. 2012.

Singer, Natasha. "Making Ads That Whisper to the Brain." *The New York Times*. The New York Times, 13 Nov. 2010. Web. 27 Feb. 2012.