MediaPost's

MEDIA >>

ART, SCIENCE & EVERYTHING IN BETWEEN

THE FUTURE OF MEDIA
FROM HOMO SAPIEN TO HOMO MEDIATED

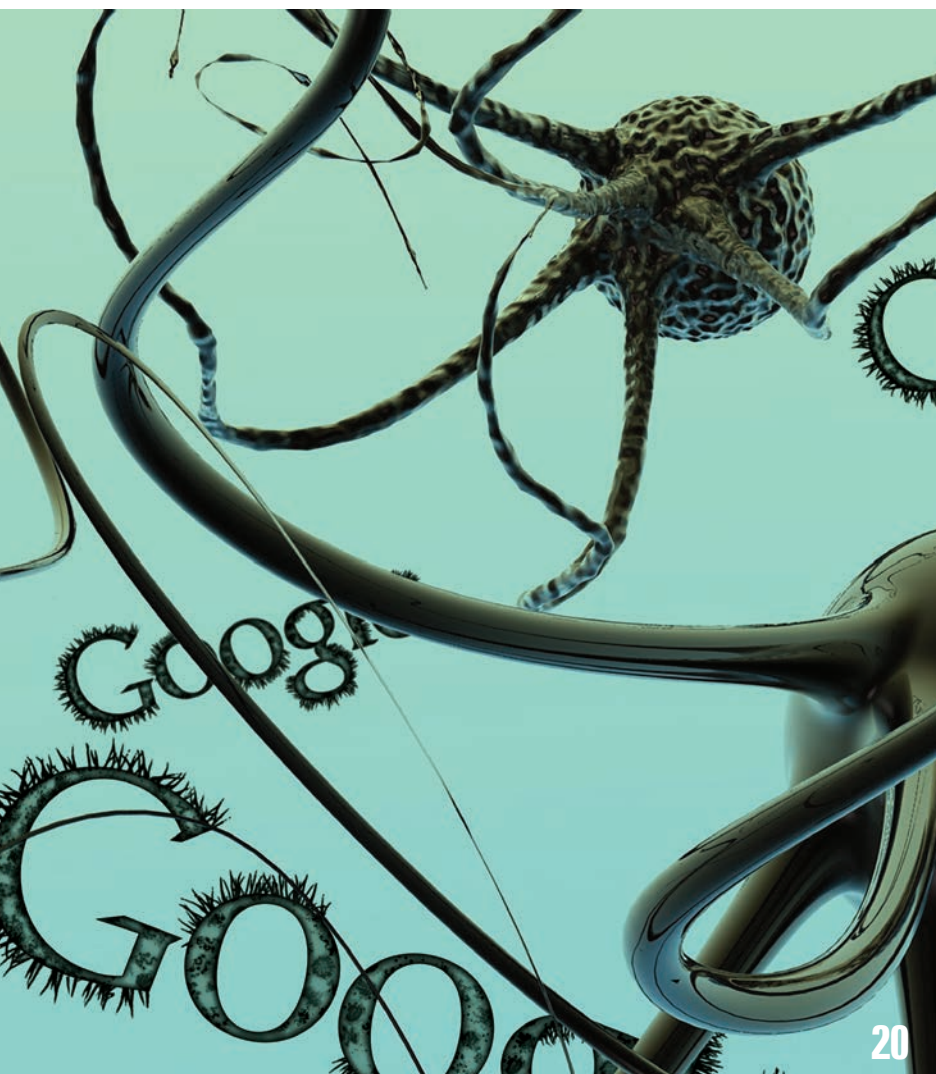# OUR ABILITY TO TARGET AN AUDIENCE WOULD BE CREEPY IF IT WASN'T SO COOL

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CONTENTS

28

20

25

On the cover: Brian Monahan, EVP; managing partner, magnaglobal intelligence practice Innerscope Research; Photography by Mark Likosky

CONTENTS

60

50

42

31

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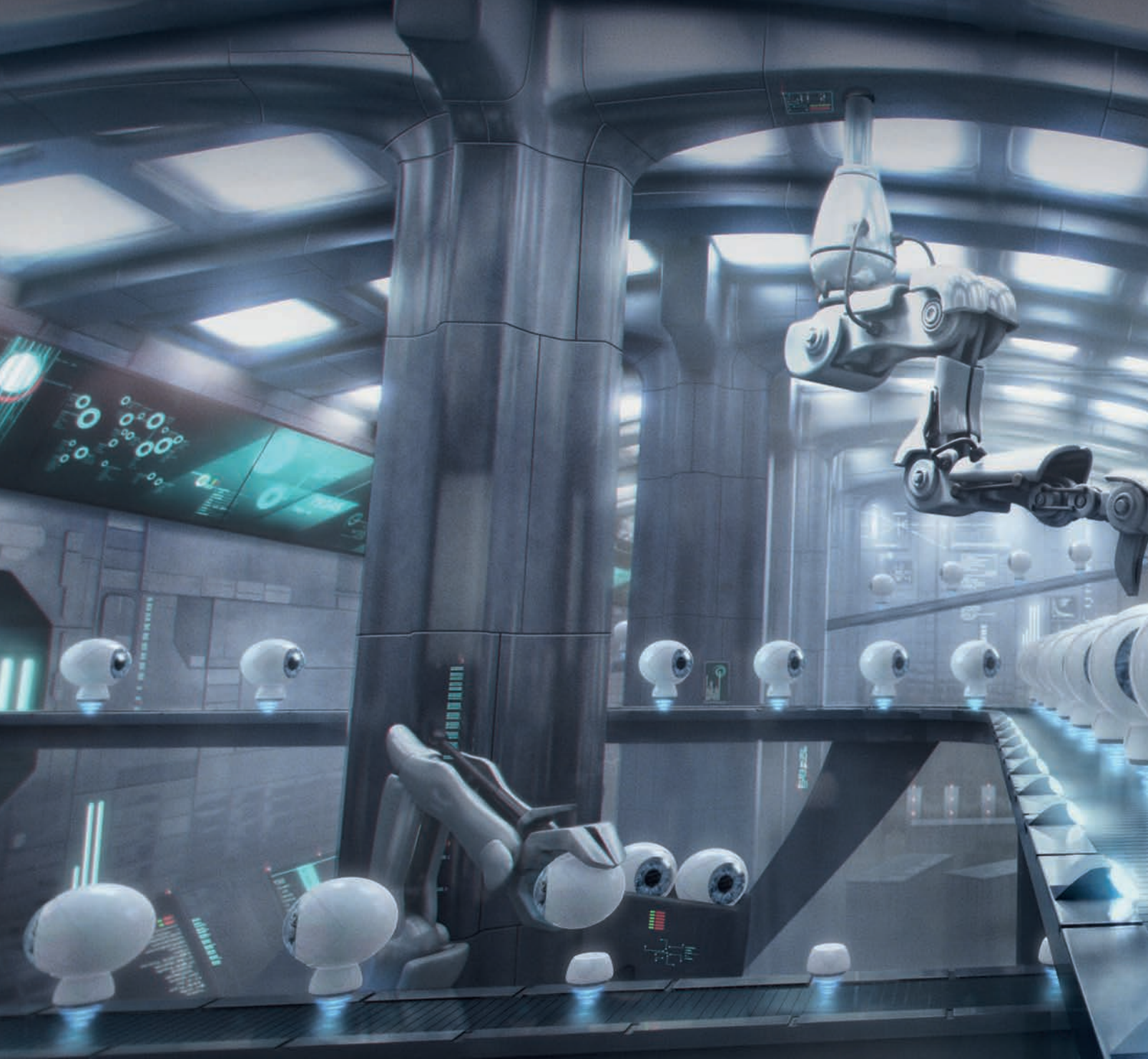
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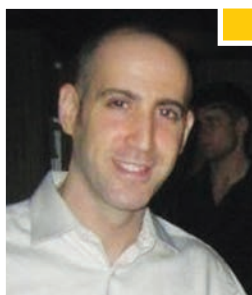
John Capone is a freelance writer based in the Bay Area and was formerly the editor of this magazine.

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Douglas Quenqua is a freelancer writer. He is a frequent contributor to *MEDIA* magazine, whose work appears in the *New York Times*, *The New York Observer, Wired*, and *Redbook*.

A Natural Selection

This is the part where I'm supposed to explain how we ended up with Brian Monahan as the guest editor of this issue. I'd like to tell you that it began when we had lunch a few months ago, and realized we shared some important ideas about the future of media. But the truth is that it began for me when I was 13. I was a junior high school student in the Bronx and we were being taught two separate, but ultimately related courses. One was called Mass Communication, and it drew heavily from the writing of Marshall McLuhan. It taught us about how media was influencing what we put in our minds and our society. The other was called Hygiene, which focused on the writing of Rachel Carson. It taught us about nutrition, ecology and how we were influenced by what we put in our bodies and our environment. That's when it hit me that, as far as human beings are concerned, media may be the most important thing, because it shapes how we think about, and behave toward, everything else.

I've been trying to tell that story for 40 years, so when I learned that Monahan was trying to tell a similar story, I asked him to collaborate on this issue so we could try and tell it together. But it was his idea to flip the lens, and that instead of talking about how media was evolving, we instead focus on how *people* were evolving because of media. And in particular, how humans might be beginning to evolve at an accelerated rate, because of the acceleration of the speed of media. A Moore's Law for media, if you will. We even tried to coin a Monahan's Law for this issue, but in the end, couldn't organize the data fast enough to prove it.

When we first began plotting this issue, Monahan was managing director of Interpublic's vaunted Media Lab, where he was privy to some pretty keen insights on the research and development of future media. By the time we began working on it in earnest, Monahan had moved over to Interpublic's Magna unit, while his partner in crime, Reuben Steiger took over the lab. I learned what great storytellers Monahan and Steiger were when they collaborated with us on some events MediaPost produced in New York City last Spring.

To help tell the story about how the future of humans was being influenced by the future of media, Monahan came up with a simple, but powerful device – a character who would represent the next stage of human evolution: *Homo Mediated*. What I learned

TO HELP TELL THE STORY ABOUT HOW THE FUTURE OF HUMANS WAS BEING INFLUENCED BY THE FUTURE OF MEDIA, MONAHAN CAME UP WITH A SIMPLE, BUT POWERFUL DEVICE — A CHARACTER WHO WOULD REPRESENT THE NEXT STAGE OF HUMAN EVOLUTION: *HOMO MEDIATED.*

in the process of producing this issue is that human evolution has been mediated by media as long as there have been humans. As Howard Rheingold notes in an interview in this magazine, it was our ability to create media – at first the language produced by our own voices and intelligent brains, but eventually recorded and distributed media – that enabled early humans to share information and organize cultures that allowed us to compete successfully with rival species. We may not be able to prove scientifically that humans have been evolving physically because of media, but we have definitely evolved culturally because of it. So where do we go from here? Well, if you listen to artificial intelligence guru Ben Goertzel later in this issue, he'll tell you that technology will advance to the point where we become one with our media – and one with everyone else's – giving us the ability "to know what everybody else is thinking all the time." In the meantime, you'll just have to rely on this magazine. Ⓜ

JOE MANDESE, EDITOR-IN-CHIEF

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SCIENCE+ART+SCALE™

Matters of Media

BY BRIAN MONAHAN

Media is the reflection of humanity. It reveals what we admire, fear, love and covet. Media is the connective tissue that binds societies together. Media is the playing field upon which global commerce competes.

In 1967, Marshall McLuhan said, "Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication." Now, in the early 21st century, as the implications of Moore's and Metcalfe's laws reveal themselves, media appears to not just be impacting how humans organize in societies, but the human species itself. Media evolution is impacting human evolution.

This issue of *MEDIA* magazine will examine the ways in which modern media is changing Homo sapiens as a species. We will use the evolved character of Homo Mediated to highlight important ways that media and human beings are changing each other. By highlighting these aspects, we hope to inspire ideas to better harness media in the future.

At MAGNAGLOBAL, we analyze about 20 gigabytes of fresh data every month to attempt to forecast the the media marketplace so our clients can make wiser marketing investments. For this issue, we have drawn from some of our analysis and reached out to other industry thought leaders to explore how media evolution is fundamentally changing the human experience.

If you are reading this, it means you are as addicted to this always changing, never boring industry as I am. Any student of the media industry is familiar with the work of Joe Mandese. It has been my distinct pleasure to have partnered with Joe on this, his last hands-on issue of *MEDIA*. Joe's unblinking curiosity about what is going on in these disruptive times and his knack for understandable storytelling has helped all of us keep pace. Thankfully for the industry, Joe is not going away; instead, Joe will be focusing his efforts on his daily reporting in MediaPost's digital properties and with programming MediaPost's always provocative live events.

Predictions of the future of media are worthless; however, the process of attempting to understand where media is going is invaluable. And while predicting the human experience as reflected in media is futile, attempts to do so make you feel alive. Thanks to Joe and the MediaPost team for letting me work on this issue, and thank you for your attention. **Ⓜ**

Brian Monahan is EVP; Managing Partner, MAGNAGLOBAL Intelligence Practice

Homo Mediated

✳ Head/Brain

Artificial intelligence filters will detect and process media data, screening out irrelevant information and augmenting reality so that Homo Mediated experiences only the most relevant things in his/her world – real or virtual.

✳ Ears

Aural implants will eventually replace dangling earbuds and wireless Bluetooth headsets.

✳ Mouth

Primitive forms of speech will be replaced by a self-referential, non-linear, transmedia narrative that unfolds in the manner of seconds.

✳ Eyes

Will become augmented by tiny, super-high resolution screens designed as contact lenses, but over time Homo Mediated will bypass the visual cortex altogether, jacking visual data directly into the brain. The reason: Human eyes can only process 45 megabits of data per second, which is roughly only as good as wireless speed on decent wifi network.

✳ Circulatory and nervous systems

Microscopic nanobots will flow through Homo Mediated's blood relaying information and crucial news updates via the cloud.

✳ Posterior

Primitive accessories known as wallets will disappear as cash and credit cards morph into virtual, electronic currencies that credit and debit Homo Mediated's cloud-based account simply by interacting with objects.

✳ Hands

Will become increasingly dexterous, developing even more refined motor control for precise control of natural, gestural user interfaces.

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David Pescovitz is a writer and journalist best known for his work on science, technology and Internet culture. He is also a co-editor of Boing Boing and a director of research with the Institute for the Future.

What is the world we're living in, with this constant stream of information, doing to us as a species in terms of our ability to adapt and thrive in this new environment?
You know, the old cliché, this idea of information overload? I would argue, you ain't seen nothing yet.

We're living in a world where it's not just that everyone is connected via their iPhone or WiFi, but we're seeing the proliferation of tiny sensors that go far beyond RFID tags. These are very small devices, eventually, perhaps, to be the size of a grain of sand in the next decade or two, probably. And they can keep a constant vigil on the world around us in a very high resolution. They can monitor the structural stability of buildings, because you can paint them on inside the walls, or sprinkle them on a farmer's field and they can give a very precise picture of the water situation in the crops, or, throughout a city, to give you a sense

of how people are moving and crowd dynamics. We're moving into a world where objects and inanimate things can blog, basically. They can Tweet. There are already devices that you can put in your houseplants and they send you a text mes-

sage when they're thirsty. So, we're giving non-living things voices.

Then, you have this unrelenting river of data. It requires new kinds of skills, and new kinds of technologies and tools for finding "the news you can use" for transforming that data into useful information that we can act upon, or that our machines can act upon on our behalf.

People talk about whether or not all this is making us smarter. You know, I don't know about that, but I think it's really all about accessibility of information. So, there has been an unprecedented level of access to information. And then, when we can offload more and more of that storage of information from our

minds to the Web and to the cloud and make it accessible anywhere, anytime, then humans can start to do what we're really good at, which is finding patterns in the information and making sense of it. We all become sense-makers. So, you start

to see new tools being developed, because humans have always made tools. So, you start to see us develop new tools for sense-making and for filtering the data that is coming from the "Internet of things," basically.

What do you think about the ability to process more concurrent streams? Do you think we're adapting our brains to be able to process more at the same time?
I don't think our brains are necessarily changing. But I think we do develop new skills. It started with wanting more information, and being forced to deal with it and make sense of this onslaught that has led to a habit, basically, where we want more and more of it. Or, we think

THE FUTURE OF ATTENTION

A conversation with David Pescovitz

"WE'RE ALL GOING AROUND SPREADING MESSAGES AND INFORMATION. SO, MEDIA IS ALREADY UBIQUITOUS. I JUST THINK PEOPLE SHIFT AROUND TO THE FORM THAT THEY PREFER, THE 'MEDIA DU JOUR' FOR SPREADING THE MESSAGE."

we want more and more of it. I actually think that, as we spend more time in these sort of fast-paced, virtually mediated experiences, there's going to be this quest for authentic, visceral, focused, immersive and, in many ways, singular experiences. I don't think sitting down and reading a book or watching a two-and-a-half hour art film are going away any time. I actually think that we're going to see a renewed appreciation for those kinds of experiences, as they become more rarified.

Are we becoming addicted to information supply?
I don't know. I mean, I don't know what addiction really means. That's within the realm of psychology and medicine. I can certainly say that I feel a sense of twitchiness when I don't have access to my email during long meetings. And I don't think that is necessarily a good thing. So, I guess you could probably argue that that's a form of addiction in some way. Then again, maybe it's also what was once an addiction. I mean, I think things change. As technology changes, the mores surrounding that technology change. Usages change. And it adds up to the way the world turns.

How do brands fit in? How can a brand successfully get its message and story out?
I think that you used the right word, which is the story. And I think the story needs to be authentic and

> "WE'RE MOVING INTO A WORLD WHERE OBJECTS AND INANIMATE THINGS CAN BLOG, BASICALLY. THEY CAN TWEET. THERE ARE ALREADY DEVICES THAT YOU CAN PUT IN YOUR HOUSEPLANTS AND THEY SEND YOU A TEXT MESSAGE WHEN THEY'RE THIRSTY. SO, WE'RE GIVING NON-LIVING THINGS VOICES. "

easyBloom

honest and true to resonate with people. I think that that's it. The sort of shifting away from some sort of target marketing, if you will. Who wants to walk around and be a target — with a big target band on their back too? Something that is somehow more about a true, honest relationship, and actually delivering really fine products and really good experiences is the secret to success. It's not having a product that is sub-par and then trying to come up with a viral marketing campaign that is not likely to work, and often isn't even related to the product, or it's related to something entirely different. I think it's about storytelling, really, and it's always been about the story. I think the brands that succeed online and in online advertising are the ones with the best products and the best stories to tell. And that's not new. So, the media may be new, but the message is built of fans.

Is there a sense of urgency for brands telling more authentic stories, given the new skills and tools you were describing people embracing?
Yeah, I think so. Having the tools to generate and distribute your own media content, to create your own Web video shows, and your own music, and potentially reach a global audience and knowing the people, without the need for deep-pocketed middle men, means that

you inherently have to deconstruct the messages that you're receiving in real-time, because you know how they're made. You know the techniques. So, for people for who media creation has become a native tongue, I think the only way to connect with those people is through honesty and through authentic engagement, because any attempt at manipulation, even subconscious ones, the system will work around those and people will be able to deconstruct them in real-time.

I [Brian Monahan] wrote a blog about this idea of peak media, if there is a peak mediation. Is there an upper bound, or is there just going to be more and more and more information coming at people in real-time?
Well, I think, for now, you can always just close your eyes.

(Laughter)
And stop listening. I think peak media is an interesting concept. But we're all media. Right? We're all going around spreading messages and information. So, media is already ubiquitous. I just think people shift around to the form that they prefer, the "media du jour" for spreading the message. I think people do that. They often find the pulse of the new media, whatever that media may be, even if it is not necessarily the appropriate media for telling the story that they want to tell. Ⓜ

FROM EARLY ADOPTER TO EARLY ADAPTER

How media is changing human evolution

BY JOSH LOVISON

We are inextricably linked to the media we consume, and as it transforms, we too are transforming. These changes transcend the obvious changes to humanity as a whole in terms of society, technology and other external shifts. We are reprioritizing and reprogramming to more efficiently live in an ever-advancing world. Early adopters have become early adapters, not just acquiring new toys before their peers, but also more willingly conforming their behavior, psychology and biology to fit these new devices.

Our sudden, surreptitious "faux-volution" parallels the technology around which we're adapting. Our technology is shifting from desktops to laptops to mobile phones and tablets. It exhibits a trend away from isolated, self-sufficient machines to a codependent tech mesh that rewards efficiency and flexibility. We're in the process of trading in self-storage for the cloud. Physical media for digital streaming. Bulk for portability. Computing power for connectivity.

Mirroring these trade-ins, we ourselves are shifting from a prioritization of memorization to analysis, of depth for superficiality, and of self-sufficiency for codependence. These are not judgment calls, nor is this a rallying cry against the ebb and flow of an advancing generation. This is not the ranting of an old man with young 'uns in his yard. These alterations make perfect sense for the contexts in which we find ourselves.

Memory

Google is making us stupid. This has been a running joke told countless times at those moments of a forgotten address, phone number or any relevant factoid. Well, as it turns out, that is exactly what was happening.

This summer a Columbia University psychologist published some research that demonstrated a significant decrease in memory retention when the subject knew the information in question could be found on a search engine: particularly interesting was the discovery that people were more likely to remember how to access information than the information itself.

The phenomenon isn't new. The theory supporting it, of transactive memory, has been around for decades, and the mechanism in question is millenia old. A merchant in ancient Rome wouldn't need to remember any information about plowing fields outside of how it might affect grain prices. Conversely,

GOOGLE IS MAKING US STUPID. THIS HAS BEEN A RUNNING JOKE TOLD COUNTLESS TIMES AT THOSE MOMENTS OF A FORGOTTEN ADDRESS, PHONE NUMBER OR ANY RELEVANT FACTOID. WELL, AS IT TURNS OUT, THAT IS EXACTLY WHAT WAS HAPPENING.

the farmer wouldn't need to remember which area of the market got the best traffic. Should either have overheard that piece of information, it's unlikely to have made a long-lasting impression.

What is new is the scope and breadth of information kept in one place. Many early adopters have ceded storing information about names, phone numbers, addresses, directions to addresses, etc., to the cloud.

Smartphones have made this even more dramatic. We can literally look up any public information wherever we are. Want to know the actor that was in that movie from your childhood? Bam, smartphone does IMDB. The name of that restaurant you ate at last week? Bam, smartphone does Yelp. Need to tell someone the directions to get to that restaurant? Bam, smartphone does Google Maps. Our dependence is clear on those increasingly seldom instances where we're in an area with no data connection — it's like being Superman on Kryptonite.

Though early adopters might not be able to remember their best friend's last name, despite seeing it for the hundredth time on Facebook's activity feed, they excel at remembering how to use new technology within minutes of learning a trick or

shortcut but a single time. On the other end of the spectrum, some people do still remember phone numbers and calendar appointments and directions, but most have difficulty remembering how exactly to send an email to multiple people, or to upload photos. Early adopters affectionately call these people "grandma" or "grandpa" (or in some cases, "Mom" and "Dad").

It's a trade-off, and for many people, remembering the process to obtain information yields a far greater return in our media context than remembering the actual pieces of information.

Information Saturation

It's called "The Magical Number Seven Plus or Minus Two." The concept represents our short-term memory's capacity to
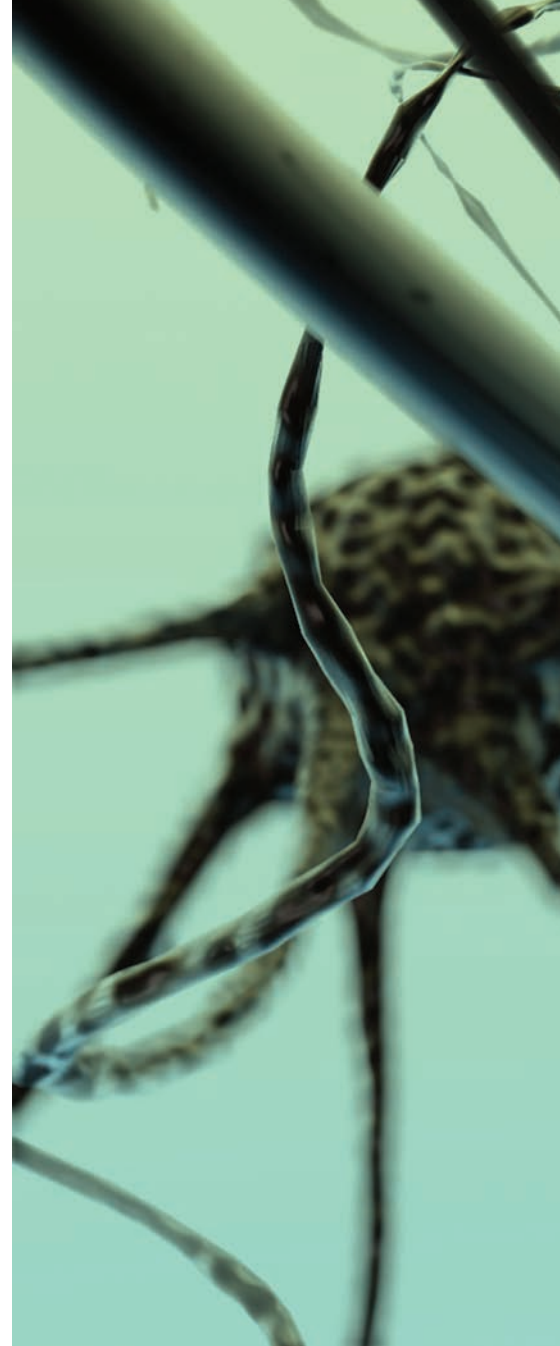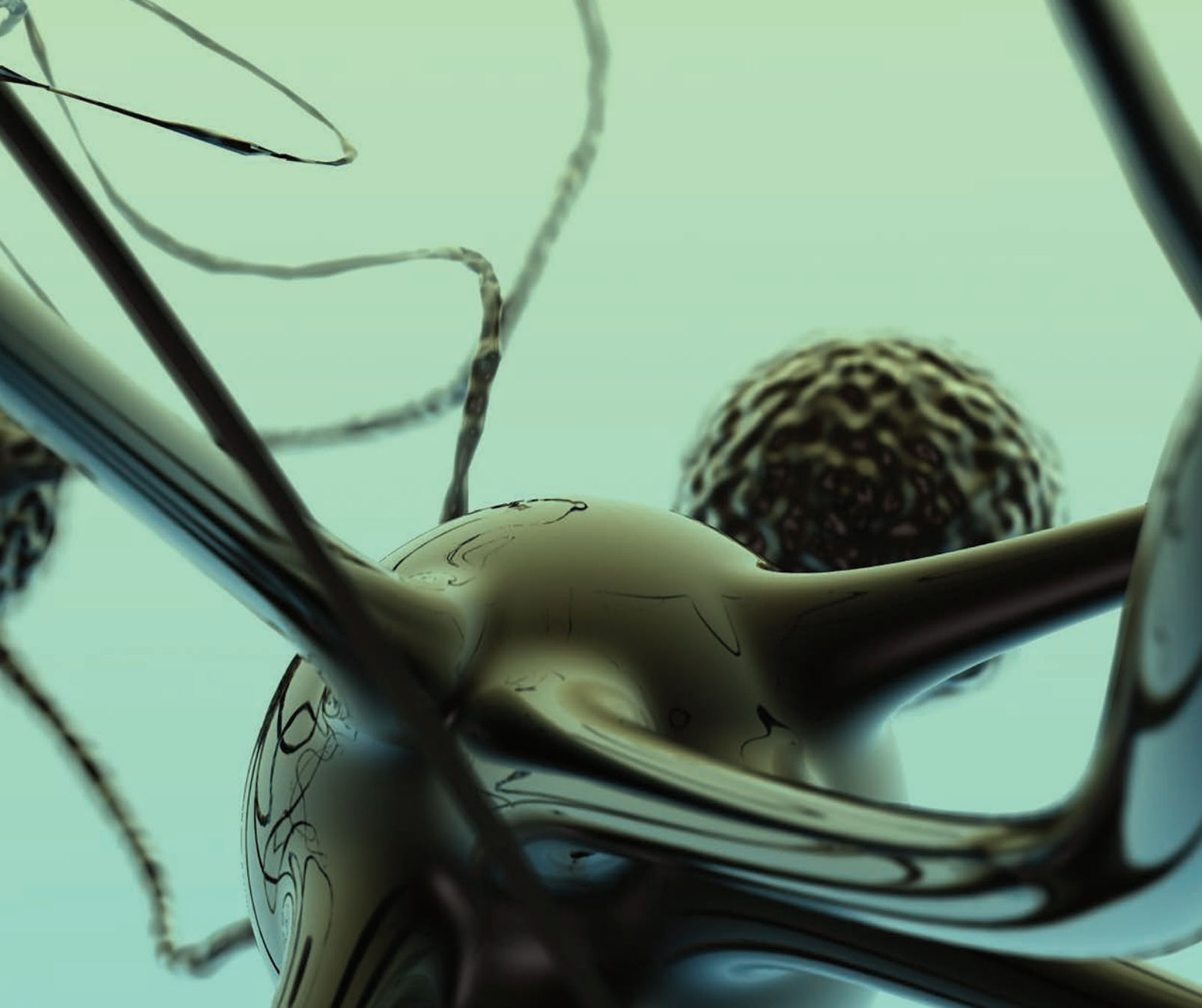
hold information before new data pushes the old out of mind. Ever try memorizing a license plate at a single glance? Or maybe everyone's name at a meet-and-greet? At somewhere between five and nine "pieces" of information our brain reaches its limit, and unless we manage to write that data to our long-term memory, we forget it.

The trick with the rule is that our capacity to remember is between five and nine "objects." In the case of a license plate, an object is a single letter or number. In the case of people at a party, it's an entire name. "Cassandra" and "Joe" both count as a single "piece" of information.

This is the crux of how people learn to memorize the order of a deck of cards on the fly. They are still subject to the rule of seven, but instead of remembering

specific cards, they remember mnemonic devices that represent orders of cards. In a sense, they compress the information as if it were a ".zip" — encoding and decoding into and from their mnemonic as needed. There is a hard-coded limit on our ability to absorb information, but there is a great depth to the adaptations and trade-offs we can make to functionally expand this limit.

Know the saying "a picture is worth a thousand words"? During the financial crisis, precipitated by the collapse of the mortgage and housing market, many "Main Street" investors hit by the economic downturn were struggling to understand what had happened. Mint.com came to their rescue with handy infographics that laid out precisely what

was going on. In a single image, they were conveying the information in a manner more easily consumed by audiences than *The Wall Street Journal* or major news sources. In fact, the viral nature of these infographics were a large part of the marketing of the service, which later was acquired by Intuit.

Ever since Google set out to "index the world's information" they (and others) have done a pretty good job. The trick now is condensing the information into meaningful outputs that "compress" it to maximize our ability to take it in. This is a large reason there is so much work being done currently in data visualization. And since, as mentioned earlier, we're predisposed to forget information that is easily accessible,

conveying a lasting message is even more complex.

So What?

I can imagine what one might be thinking at this point: "OK, enough psychobabble — does this actually have any relevance for me or should I just forget all about it unless I need to Google it later to impress someone?" Well, yes, it does have quite a bit of relevance for Madison Ave, et al.

Wondering why traditional media bears an ever-decreasing relevance to the plugged-in consumer? This is the crux of it. Traditional media is built around delivering a message to the masses. The information process on the part of the audience is purely passive. That just isn't how our minds work any longer.

Even if a commercial can be entertaining or memorable, the brand message may not be the part that gets remembered. How often does one overhear someone talking about a great commercial he saw, but when prompted with "Who it was for?", can't come up with the brand?

In digital, we've seen marketing shift from broadcasting a message to creating a service offering or tool that works in adjunct with the shopping process, consumer interests, or product itself. But traditional media is, by its nature, one-directional.

Well, if we know brains today are predisposed to forget purely factual information but remember to process information, commercials that tease a more substantial marketing offering elsewhere and the directions for how to access that offering might just be the answer. Small wonder this past year has seen an increase in those.

Here, too, there is room for improvement. Can we finally kill off the URL? Please? We got rid of the phone number, but replaced it with a marginal improvement for our short-term memories. It tends to be especially bad for microsites for a promotion. We get URLs like

reallylongcombinationofwords.com or somesite.com/promotionevent. Movies often fall victim to overly long URLs too.

If the URL isn't a dot-com or is more than a single, memorable word, consumers aren't going to remember it. Know how they are going to navigate to that site when they get home if they really care about visiting it? They'll hop on Google and search. Let's increase the efficiency: it's high time we drop URLs, and just provide the terms for a consumer to search that result in our link as the first result from natural search.

This makes perfect sense when considering the rule of seven plus or minus two. If, on a billboard or print ad, we asked consumers to "Visit themagicalnumberseven.com," they (a) won't even be able to process the words within that URL without getting in an accident or having turned the page; (b) will never remember the specific spelling by the time they get back home; and (c) have probably been desensitized to URLs entirely, glossing over that text in the ad. Why not change the call to action to: "search: Magical Seven" (or even "Magical Seven Plus" if you wanted to be sure)?

Instead of trying to process and store combinations of letters and/or words within a URL, consumers are being asked to remember only two to three "objects" (i.e., words). This is actually quite similar to current advice on secure passwords. A password of four unrelated words like "elephant flower clown afro" is exponentially more secure than something like "&tR65yu!" and the former takes only half the "memory" of the latter.

The rabbit hole gets even deeper when we think "messaging process" rather than information processing. Brands need to identify the context around which the consumer will shop for their product, the processes involved, and see where within those contexts they can influence the process, rather than the information.

I'll try and illustrate with an example.

Let's say a consumer is shopping for new shoes. A classic marketing message would be, "Buy our brand's shoes, they're awesome!" While this might ultimately drive awareness, the "they're awesome" part of the message is going to go in one ear and out the other. Consumers know there is a financial incentive to inflate one's own success.

Many brands have caught on, and will now cite third-party verification of their awesomeness. Such an ad might suggest, "Buy our brand's shoes, with an average rating of four stars or above on Amazon!" Well, that helps, but still the information about the rating falls within the categorization of "information that exists online." If shoppers tend to search for information about the product prior to purchase, they'll sort out the ratings at that stage of the process and give far more weight to the results they uncover than any content of an ad. Also, it's generally clear to consumers that the cited ratings represent the higher end of reviews (I've lost count of the number of trailers for awful movies that cited four-star critic reviews).

How about the following: "Buy our brand's shoes, which are awesome. Don't believe us? Search 'Brand Amazon Reviews.'" Here, the ad creates brand awareness, but then offers information on the shopping process, rather than on the product. That information is summarized in an easy-to-remember call to action. Chances are, during the search portion of the shopping process, the consumer will find themselves typing in "Brand Amazon Reviews" and seeing all those four-star-and-above reviews.

Understanding how our minds have been reshaped due to media, and changing our media to fit our new minds is a critical back-and-forth that's evolved on both sides for ages. As media continues to change at an accelerated rate, we have to rethink our content, not only for the new media, but also for the new media consumer. Ⓜ

Look over here

PAY CLOSE ATTENTION TO THIS STORY (IF YOU CAN)

As American multi-tasking is on the rise, so are ADHD diagnoses

BY JOE MANDESE

When it comes to theories about how media is influencing the evolution of humans, the debate gets caught up in a sort of Catch-22 logic. Scientists who study the physiological evolution of species say it takes a minimum of tens of thousands of years for physical adaptations to manifest in a species. And the oldest recorded media we know of — the cave paintings of our earliest ancestors — date back only about 40,000 years. Moreover, the kind of media that are most likely accelerating the pace of human evolution — modern electronic media — are only about a century old. And the kind that have been hyper-accelerating change — powerful, computerized, globally distributed media — been around a lot less longer than that.

The problem with that logic is that it excludes a very important piece of our anatomy that we know is being changed by media: our brains. The evolutionists will argue that while media does change the wiring of our brains, it doesn't necessarily do it in a way that is genetic, meaning that they are adaptive traits that can be passed on physiologically to succeeding generations. That logic is a problem, because human evolution is likely being driven by cultural factors that are actually the result of media, and they are clearly being passed on from generation to generation, influencing and re-influencing every person that comes after them. We may not understand exactly what the message was of those early cave paintings, but we know that it likely played a role in helping early humans to share and spread information, which helped them organize and develop the skills that enabled them to compete successfully with rival species — especially other early hominids — that no longer exist today.

Media may be becoming our most significant evolutionary factor, because it influences how we think and feel, and that affects how we behave. And as we evolve

distraction

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psst

fav

angry birds

AS FAR BACK AS THE LATE 1960S PSYCHOLOGISTS, ESPECIALLY CHILD PSYCHOLOGISTS, BEGAN LOOKING AT THE ROLE THAT MODERN MEDIA WAS PLAYING IN PEOPLE'S ATTENTION SPANS. AS THE SUPPLY OF MEDIA BEGAN TO ACCELERATE — AS WELL AS THE FORMAT OF SOME NEW MEDIA CONTENT — THEY REASONED THAT THE WAY PEOPLE'S BRAINS WORKED MIGHT ALSO CHANGE.
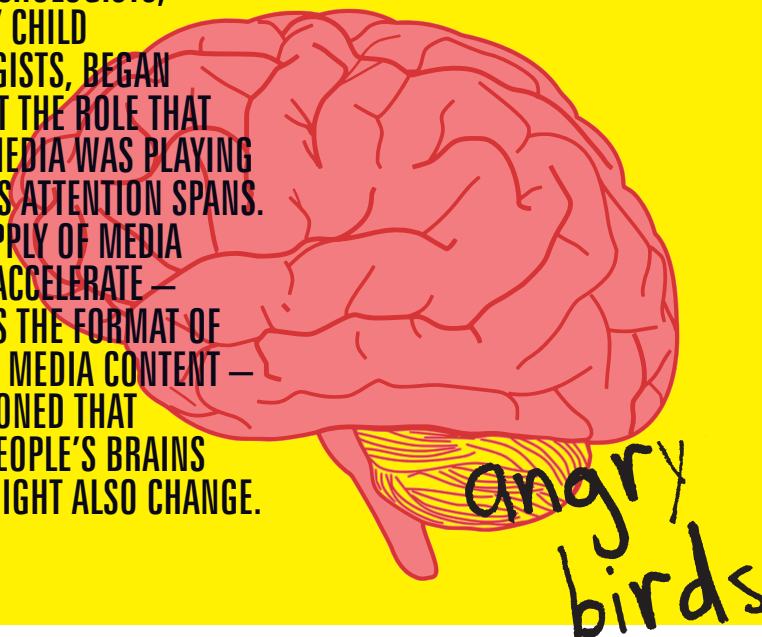
how we think and feel, our behaviors have been proved to have a great deal of influence over our physical world — whether it was the discovery of fire, electricity, thermonuclear power, or the ability to peer into the cosmos and even venture out to them.

While the physiological adaptation resulting from media may take tens of thousands of years to be proved, some interesting anecdotal evidence has begun to manifest, and it has some media industry professionals, and cultural anthropologists intrigued.

In 2007, while speaking to a group of journalists and securities analysts at an investors' conference in New York, CBS research chief Dave Poltrack presented some interesting data showing how "digitally connected" consumers were beginning to change. Poltrack defined those consumers as people who subscribed to broadband Internet access and digital subscription TV services, and at the time, he said they represented the digital elite within the mass population. The most interesting part of his presentation was a slide showing how that they had an unusually high correlation of prescriptions for ADD/ADHD medicines.

Poltrack said he used the data as a joke, but it made an important point: As the type and amount of media people use begins to accelerate, so might the way the humans who use them do.

As far back as the late 1960s psychologists, especially child psychologists, began looking at the role that modern media was playing in people's attention spans. As the supply of media began to accelerate — as well as the format of some new media content — they reasoned that the way people's brains worked might also change. By the early 1970s, theories were abounding that the accelerated pace of media was beginning to alter the way our brains process information and whether it could be contributing to the rise of ADD and ADHD. One thing is clear: Diagnosis of those disorders has risen since then, as have prescriptions of drugs to treat them, and media most likely has played a role. If not in actually causing it, media has helped fuel the debate surrounding the attention deficit debate, including whether media has contributed to it.

"Media has fueled the debate on both sides," says Ira Haimowitz, executive vice president and group director of

email
your
rite tv
show

distraction

"There's no question that the multichannel nature of our media world is impacting us and changing how we behave. But is it contributing to a disease like ADHD? That depends on how you define ADHD, clinically, and there is still a lot of debate about that."

Putting aside the ADHD debate, some people believe that human behavior is simply adapting to a new environment — a media environment where it is increasingly necessary to process more quick bursts of information in order to be successful, and, yes, survive. While those qualities might be seen as disorders when manifested among young people in an academic environment, they are actually seen as positive adaptive traits — a form of natural selection, if you will — in other parts of society, especially high-pressure professions where skills at rapidly juggling multiple inputs of fast-moving information are deemed critical to success. Say, on Wall Street, or in the military, where split-second decisions can mean the difference between life and death.

Whatever your view of the physiological connection between the acceleration of media and evolution, there is plenty of research to show that it is beginning to rewire our brains, if not our DNA.

Cory Treffiletti, a founder of San Francisco agency Catalyst S+F, has been studying that closely for years, and he believes the process may be accelerating with new generations of media consumers who grew up with digital media. Years ago, while a top digital executive at Carat, Treffiletti says he did some research on the generational differences of media multitasking and found that people above the age of 35 could successfully utilize 1.8 forms of media simultaneously, while younger adults were "adept at more like 2.8 media formats at any given time."

Treffiletti says it was about that same time that Carat partnered with Yahoo to do some related research on the subject. Their collaboration, the 2004 "Born to Be Wired" study, showed there were distinct differences between the so-called Millennial generation that grew up with online and digital media, and the generations who preceded them.

"Younger people are raised to multitask," he says, noting, "If you add up the hours they spend in a day with media, it exceeds the amount of time they are awake, so multitasking is just how they operate. Children and young adults today are raised with a fragmented attention span, and they somehow function in that way. Older audiences are more attuned to focus on a smaller set of input — that's how they function."

Treffiletti says it's a matter of opinion whether such media multitasking is a negative or a positive trait for people, but that people clearly seem to be moving in that direction.

"Focus is extremely important," he says, adding that younger people are drawing conclusions and opinions "faster" than people did before. Ⓜ

intelligence and analytics at the CementBloc, an independent agency specializing in pharmaceutical marketing. He says media has clearly played a role in making people aware of attention disorders, which may actually influence diagnosis and treatment of it. Because it is a clinical diagnosis, and one often made for children by their parents and physicians, some critics argue that media coverage has helped spawn an epidemic by simply making people more aware of it. On a more insidious basis, Haimowitz notes that media have also influenced the commercial side of treatment, as big pharmaceutical companies have poured marketing dollars into promoting their attention-deficit remedies to doctors, and even helped develop better screening systems to help them diagnosis it more easily. On the flip side, he says critics of attention deficit have also successfully been using media — especially social media — in an effort to combat what they claim to be an over-diagnosis of it.

As far as an actual correlation between the acceleration of media stimuli and attention disorder, Haimowitz says there is plenty of research on that going back to the 1970s, but that the jury is still out on its actual cause.

THE FUTURE OF, WELL, US

A conversation with Howard Rheingold

How are we evolving because of the changes in media?

I think you can make a very strong case that the technologies we have created — and the media that we make out of some of those technologies — is, in fact, how humans have evolved. This is, of course, in the realm of theory, but it is not "blue sky" theory.

If you look at the earliest artifacts of human communication — like cave paintings, done 35,000 to 45,000 years ago — humans begin to learn by imitation, and it takes on a kind of Darwinian process, because we were able to make models of what others were doing. You can watch somebody chip an axe blade and the same parts of our brain will light up as would if we, ourselves, were chipping the axe blade. Now, for a very long time, our ancestors used a Julian ax, and that didn't change for, probably, a million years. At some point, innovation kicked in, and if somebody thought of a new way of doing something, that could spread through the population. Of course, there is a limitation to how learning spreads culturally. You really need to be there to observe. Even with the development of speech, you had to be there in real time to tell somebody how to do something. So, the invention of writing was another point

at which people were able to do things together on a scale that they were not able to do before. This is what sociologists call "collective action" in performance.

The origins of writing actually came from accounting. The symbols of agricultural civilizations enabled these large empires to emerge for the first time, with hierarchies and work gangs, and irrigation and large-scale building projects. The people who kept track of things, the priests or the rulers, began to make deals. If you deposited 50 bushels of wheat in a granary, they would get you 50 little clay tokens and make it into an envelope.

For a very long time that persisted, but then the clay tokens became symbols. That was something called "exactation." It is like adaptation. It is taking something that already exists and using it for another purpose. All those things came from our deciphering the abstract meanings of a mark, and it may have come from looking at a print on the ground and knowing very quickly whether this means there is a predatory issue to the mark, or whether there is something you may be able to keep, or if we should run after it.

How important is the notion of the tribe?

The question is about human evolution, which is why is it that we cooperate when

the situation is highly competitive? Those people's genes individually may not have an advantage, but the genes of that group will have an advantage. The group will be able to compete more effectively for resources in the environment. Whether they are competing with other animals or with other humans, the presence of cooperators in the group can lend them a kind of group survival capability.

Look at the Web. The architecture of the Web is such that it enables people to do self-interested acts individually that add up to a common public good — something that is useful to everybody. The principles and protocols were designed to enable individual innovation to spread.

So, we are kind of at a meta-media level here in which we are beginning to see media that are designed to enable new media to form. Conversely, you do not have to ask anybody's permission to go on the Internet or the Web. You just follow protocols that work with this architecture.

Napster is a good example of an architecture that forces this kind of sharing. If you were out collecting music on Napster, you're not going through a centralized server. You're downloading it from someone else's hard drive. And while you were downloading it, by default, the folder, the directory on your hard drive that you were saving music in was open to anyone else who was on Napster.

Are people joining more groups?.
Each time we have new media, we also are able to do things together. On larger scales, where we were not able to organize before. And through speech we were not able to organize in places before. So, I think you can see this is a kind of a leitmotif in human, biological and cultural evolution. It is this ability to invent new ways to communicate. We use those new ways of communication, among other things, like more powerful forms of collective action.

Well, go back to [my book] *Smart Mobs*, I interviewed David Reed. David Reed was one of the architects of TCP/IP. He came up with something called Reed's Law. Sonoff's Law has to do with the value of a medium. Sonoff was one of the founders of broadcast television. The power of television is equal to the number of television receivers. The more television receivers, the more powerful television as a medium is, the more money it makes, and the more influence there is.

Then, there's Metcalf's Law. One fax machine is totally useless. Two fax machines are useful to the two people using them. If you've got a hundred fax machines, it's a lot more useful because any fax machine can communicate with any other fax machine. This is how it goes arithmetically, with the addition of new units. Metcalf's Law grows exponentially. It is the number of units squared, "squared" meaning you can communicate with every other one. So, it is the number of units x itself.

Reed came up with this idea of group-forming networks. A group-forming network is based on a Metcalf's Law network, with every node being able to communicate with every other node. It is not just that every node can communicate with every other node; I

can form a group with everybody on eBay who is interested in buying porcelain figurines. I can form a group with other political activists. So, that becomes exponential in the case of consumer nodes square. It becomes two to the power of the nodes. So, if there are 22, then, if it is N nodes, it is 210. So, it grows even more rapidly.

Do you see any modality in terms of our media's ability to shift power?
I just finished a book about multiple literacies, for attention, participation, cooperation, crap detection, network awareness. Now, the people who have the most potential are the ones who are able to master multiple literacies. I don't think we're going to be able to see a universal multiple literacy. I think we're going to see an increasing segmentation. There are five billion mobile phones, and two billion people on the Internet, but has to do with whether you know, or do not know, what to do with it.

You can get an answer to any question in one second, out of the air, practically anywhere on Earth. It's up to you to interpret whether the answer is good information or bad information, or disinformation. But an awful lot of people believe things, whether it's political or urban legends, or, even more dangerously, medical information, and do not know how to find their way. It's not really rocket science, but it's not really pop.

How do brands, or the companies that build brands participate in this?
With these networks of trust, I think it's fairly easy to protect the trustworthiness of a brand. I guess you could argue that there are some brands that are associated with institutions that don't really need trust. Now, does BP need trust? A lot of people don't trust BP anymore, do they? On the other hand, during the spill, if you searched on "BP spill" or "Gulf oil spill," you'd

"IF YOU LOOK AT THE EARLIEST ARTIFACTS OF HUMAN COMMUNICATION — LIKE CAVE PAINTINGS, DONE 35,000 TO 45,000 YEARS AGO — HUMANS BEGIN TO LEARN BY IMITATION, AND IT TAKES ON A KIND OF DARWINIAN PROCESS, BECAUSE WE WERE ABLE TO MAKE MODELS OF WHAT OTHERS WERE DOING."

notice that British Petroleum was trying to tell its side of the story. So, for some reason, maybe it's political, it was important to BP, even though we didn't really have much of a choice there. If you don't like one brand of cookie, you'll get another brand of cookie. You only have that choice of petroleum. Still, the trustworthiness of their brand is important to them.

The old advertisers said that you came up with a message and broadcast that message, and now there is more of an interaction with the consumer of that message. There is more interactivity. You are seeing a lot of this. There is a whole tribe of social media marketing consultants. It really boils down to that you not only have to listen to your customers, you have to communicate back with them. Maybe that's where the reciprocity comes in.

Google was a machine built by engineers. They never had any use for customer service. They're run by many people, but there is no customer service. Now they are becoming social. They've got Google+. There is this big conflict

going on about real names versus pseudonyms. Suddenly, they are faced with having to respond. When they become social, you are not a machine anymore. You are social. I think they are faced with big problems. They better scale up some kind of customer service, or forget trying to be sociable.

I mean Facebook is notoriously not easy to get to, but things can be fixed when something goes wrong. It can be done. There is somebody who works for Facebook who will help you with a problem.

As the type of media we use speeds up due to Moore's Law and faster microprocessing, and we begin to move at hyperspeed, how's that going to affect our species?
The question is to what degree is the human brain adaptable through this explosion of available information, and to what degree is the increase in the pace of change possible? How do we live it? I think there is a combination of attentional framing and the use of information tools that I call "infotention," which I'm actually teaching to people and that I've written about in my book. The technology affords distraction, but I don't think, as Nicholas Carr wrote in "Is Google Making Us Stupid?", that the technology makes you shallow.

I think it affords distraction, but that doesn't mean you have to be distracted. It means that you're going to need to learn to discipline your attention. You need to learn what to pay attention to, because there are a million times more choices at any point. So, again, it becomes a form of literacy and it becomes a skill. You literally re-wire a young human's brain when you teach him or her to read and write. You're forcing the brain mechanisms that were involved for different purposes and are not naturally coordinated to act in a coordinated manner. We're not really seeing, yet, an organized attempt to train people to deal with it. **ⓜ**

I, *Part* Robot

What happens when people become media? **BY JOE MANDESE**

After reading this story, you may think that Paul Isakson has lost his mind. And you would be partly right, because Isakson believes he is a cyborg. You know, a creature that is part man, part machine. But he hasn't actually lost his mind. He has simply stored a part of it in some machines for safe keeping, and that is why he believes he is a cyborg. It is also why he believes you most likely are too, because whether we think that way or

not, we are all becoming part machine.

"How many phone numbers can you remember now versus before you had a cell phone," Isakson says, giving an example of one of the many machines he uses to "back-up" his brain's memory. And it's not just numbers that Isakson offloads to the hand-held devices, but physical experiences.

"If I see something interesting that I want to remember later, I take a picture of it and email it to myself," he explains,

adding that he used to joke that his phone had become an extension of his memory, "but it's not a joke."

Okay, so most of us can probably relate to this experience, but what makes Isakson so unusual is that he studies a new field of science growing up around it, and uses it to develop advertising and communications strategies for some of the biggest brands in the world. As head of strategic planning for Colle+McVoy, the
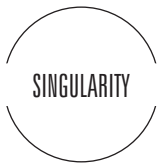
THE FIELD MAY BEST BE KNOWN BY FUTURISTS LIKE RAY KURZWEIL WHO HAVE POPULARIZED THE NOTION OF "TRANSHUMANISM" AND THE CONCEPT OF THE "SINGULARITY" MOMENT — THE POINT AT WHICH PEOPLE AND MACHINES WILL LITERALLY MERGE INTO ONE.

Social Media Interaction

Which of the following have you done with your social networking profile?

(Amongst those who have used a social network in the last six months)

About the Study: Wave 5 – The Socialization of Brands, measures use of social media, mobile and general digital adoption for the 16-54 active internet audience across 55 countries and provides new perspective on what motivates consumers online to connect with brands.

31.50%
wave 5 2010

31.88%
wave 4 2009

43.20%
wave 5 2010

Affiliate with or become a fan of a brand

Join a group

SOURCE: UM WAVE 5 STUDY

Minneapolis ad agency owned by MDC Partners, Isakson has begun studying cyborg anthropology, an emerging field that seeks to understand and explain what happens when people fuse with machines and technology.

The field may best be known by futurists like Ray Kurzweil who have popularized the notion of "transhumanism" and the concept of the "singularity" moment – the point at which people and machines will literally merge into one. Kurzweil has predicted that moment will come in 2029 – a mere 18 years from now – due to advances in technology, particularly nanotechnology and artificial intelligence. Because by then, machines will be as smart as we are – or smarter – and they will be small enough to put the power of super-computers inside our bodies.
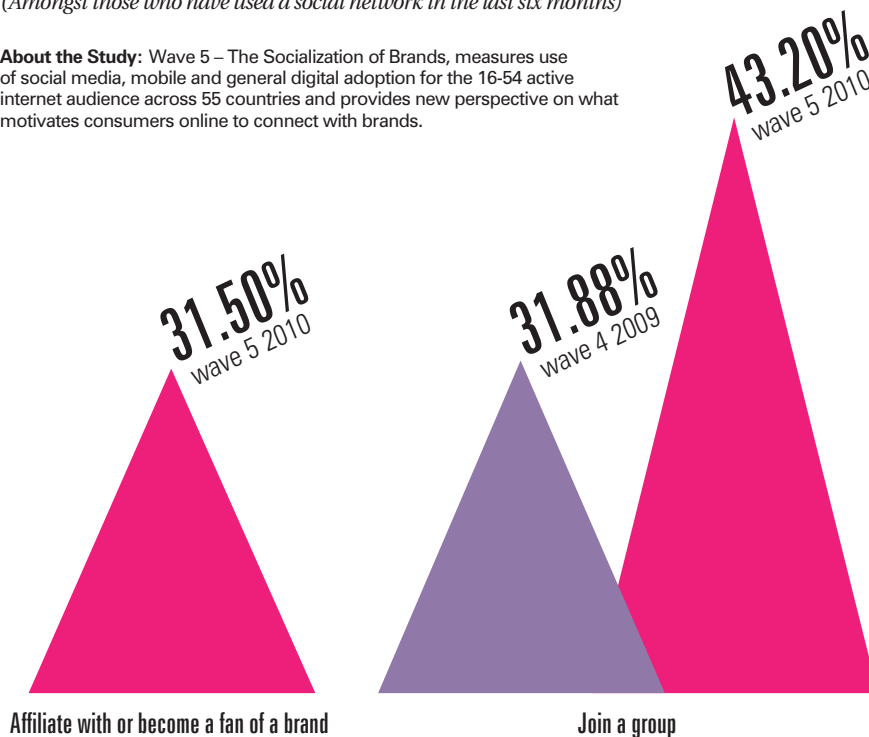
The timing of that moment may be debatable, but scientists say its inevitability is not.

"It's a vexing question," says Ben Goertzel, an author, academic and leading scientist in the field of artificial intelligence, who is also an advisor to the Singularity University and Singularity Institute. "Technically, it's all possible, but what develops, and when it develops, will depend on other factors that are cultural, political and economic, as much as technical ones."

Goertzel says technology is actually moving fast enough that these changes could happen "sooner than we actually think," but that the big impediment will be the willingness of people to accept them. While the cultural and political implications seem obvious, the economic ones may be less so, he says, especially for an industry like media, where people like Colle+McVoy's Isakson have already begun offloading some of their humanity to machines. As we increasingly become one with those machines, Goertzel believes it will further disintermediate the role – and displace the economics – of big media

companies, making us, in effect, our own media.

"I would be worried if I were a media executive in a major media company, because I think you could make a lot of money by shorting all the stocks of the big media companies," he says. "Technology is bring us more toward peer-to-peer and AI is certainly going to help that."

In other words, Goertzel believes that big media companies had their shot in the evolutionary cycle, and lost, because people are simply going to evolve into their own media, without the need for outside intermediaries. That's because the most important intermediary – technologies that can filter information – will be inside of us.

Goertzel's concepts may be difficult for people with contemporary human intelligence to comprehend, which may itself be contributing to the cultural impediments. For example, he says society is currently consumed with social media, and is prioritizing economic, political and cultural capital to support the development of social networking technologies. These cultural and social "biases," he says, will determine what technologies get developed fastest. If, on the other hand, society made the same commitment to the development of AI that it put behind mapping the human genome, Goertzel believes we could have huge breakthroughs sooner than predicted.

The implications for marketing are huge, he says, and not necessarily negative, because technology could help consumers process what can be an overwhelming marketplace of information about products and services. And brands, especially effectively communicated ones, he says, can be powerful intermediaries.

That's where people like Colle+McVoy's Isakson come in, and why he is spending so much time talking to cyborg anthropologists, many of whom believe we've already fused with media machines, and it's only a matter of degree and progression. People have already

moved well beyond offloading phone numbers and pictures to cell phones, and media technology has progressed from helping people remember things to telling them where to find things (search), to telling them where to go (physical navigation systems), to telling them what to do.

Agencies and marketers who understand the role media technology plays in

mediating and augmenting how humans think and behave will have an underlying advantage in the marketplace as people become more dependent and more connected to those technologies.

"When will people become their own media? It's a big question that we're trying to figure out," he says. "But to some extent, we're already there." Ⓜ

THE FUTURE OF SEARCH

A conversation with Stefan Weitz, Microsoft's Director of Search and Director at Bing
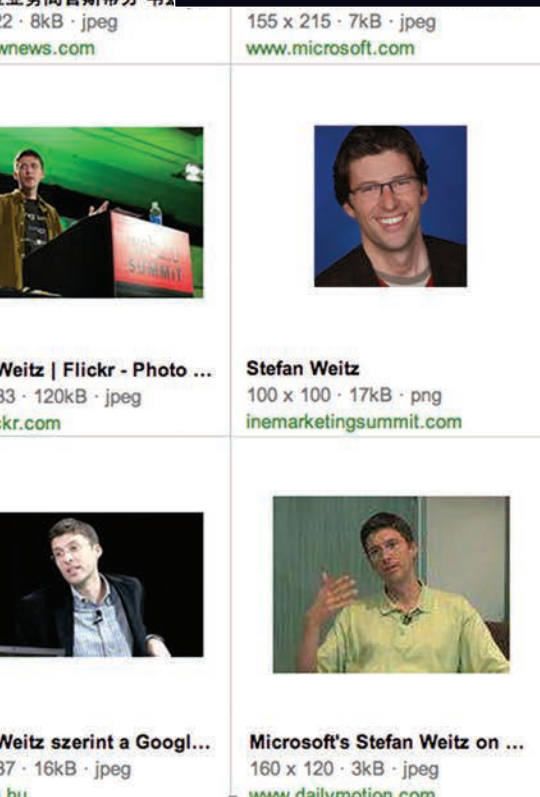
Where are we in the evolution of search and navigation?

Well, it was text-based for 20 years and pretty much comprised of pages with links. The way I describe the Web of today is a high-definition proxy for the physical world. Meaning that everything you can touch, taste, feel, look at, talk and converse with, have an interaction with. Almost everything on the planet has been modeled, in some shape or form — some more than others — in this digital context. Everything, from little puppies to the shoes that I'm wearing, to the coffee cup that I'm drinking out of. They all have been described in ridiculous detail on the Web.

So, the coffee cup that is in my hand right now has been described on a hundred sites, from the manufacturer to the marketer's site, to the sales site, or whatever. We go through all that data, to reassemble it back to a singular place where I can describe this cup in particular detail. That is the first big challenge, just to have that viewpoint.

The second challenge is to figure out when a person is asking a question of an engine, like, "Where do I buy this coffee cup?" It's no longer good enough simply to use the old ranking, where he looks for 10 locations that halfway fit it, and have descriptions in each case about a coffee cup that I have. That's silly. It's ridiculous. The question you're asking is a very clear, intense question. You're asking: "Where can I buy that coffee cup?" What we have to understand now in search is that, for this coffee cup, the first three had attributes including places from which I can purchase it. Now, it's a matter of connecting that intent to view something with the real-world, in this case, this coffee cup, and, "where do you sell it?," and literally connecting those two disparate worlds together to steer the action of that person buying my coffee cup.

How are human beings developing these skills to access information beyond how we've learned over the last 15 years — to go to the query box and type it in.
That's a huge area to discuss. I'll start from the beginning of search, where we have a search box, and a specific query in place, and you have the links in place, and then you have to parse through those to figure out which you actually want to go to. And to do that effectively required almost a whole new body of critical thinking that wasn't there a generation ago. It's understanding sources and understanding captions and understanding all this information that has to be said on the page to help you decide where to go and, ultimately, where to "right click."

I think where the future of all of this is going is that the search engine itself is actually handling the computation, or the parsing that, today, can be taken on by humans. In other words, there are a lot of things that computers are really,

really good at — you know, matching data and identifying massive amounts of data, identifying patterns of matching data, distilling all that data down to something that is consumable by a human. This is something that I think of as our Farecast product here at Bing does very well. With airplanes, it basically predicts whether or not a particular price or a particular route, on particular dates, including the yields, are going up, or going down. So, it helps you say "yes, I'd like that — I think I'll wait only one hour." By the way, it can do about two billion price combinations every single day, from all the different airlines, including the store pricing, including price windows, including holidays, and then ends up with a prediction.

Now, humans will never do that. So, things like that, where we can offload, as humans, these kinds of data-centric things and do something that is a higher order of business — things that humans are better at doing: identifying nuance and making decisions based on intangible

factors, or knowing that a particular style of shoe hurts their foot and they wouldn't buy that kind of shoe for them. These types of things are all where humans actually will be more useful, if you will, when the systems themselves become more adept at parsing through a lot of information on their behalf.

It seems like the machine is going to alleviate the need for the development of some of the skills in critical thinking that humans have needed, to date, to successfully navigate a text-based, query-box-driven result. But, presumably, there are new ways to access this information in the structured information world, to present themselves, like a Google search. What sort of skills is that person going to need to develop?
I think the most important skill will be able to accept the amount of intelligence coming at that person on a minute-by-minute basis. Search literally will be a part of every single thing with which one inter-

> ## "EVEN, FOR ME, TODAY, I LITERALLY HAVE THREE MACHINES IN MY OFFICE, AND I HAVE FOUR SCREENS ON AT ALL TIMES. I AM TYPING INFORMATION FOR STAFF ON OUR CURRENT SYSTEMS. I AM ON TWITTER AND FACEBOOK. YET, I DON'T DO A GREAT JOB PARSING IT. IT'S ALMOST OVERWHELMING TO ME."

acts — from your phone to your television to your computer to your tablet — even when you're making a phone call. These are all examples of where people are doing searches, almost unconsciously.

I pulled my phone out during a trip from Idaho yesterday, just checking to see the map from where I was to where I needed to get to, and I was curious about the traffic conditions — whether the cars were moving or not. Or another example is, I really am starving for food, and I'm just looking for a place around me where I could eat. These are very simple examples, but these are searches, and I'm taking multiple inputs where I'm at, and I've got all these different inputs coming in, and they factor down to presenting a result that I, in fact, can make a decision on.

But the challenge that humans are going to have to face is that the number of searches that we're doing on a given day are multiplying and intensifying by orders of magnitude, where, initially,

it was a very directed search. You went to a search engine and did a search. Now everything that interacts and has this capability to access and sort all this information on the Web.

That is going to be one of the biggest challenges. Even, for me, today, I literally have three machines in my office, and I have four screens on at all times. I am typing information for staff on our current systems. I am on Twitter and Facebook. Yet, I don't do a great job parsing it. It's almost overwhelming to me.

Do you buy this analogy of the development of a new sense — a sort of information sense? And, if so, do you think there are other senses that we're going to have to develop down the road?
"Information sense?" I do love that analogy. There is something else beyond our five senses that we have grown over the past several thousand years. There is something else developing, because, even though the Web is this highly efficient proxy of the real world, it is still once removed. So, no matter how good we make the experience of the reality, or slap an overlay of information onto your vision, I do think, as humans, we still need to touch things and to feel things and see things. We need to use our five senses before we can make use of our sixth sense.

Now, there may be something there, I don't know what it's called — the information sense, or the knowledge sense — an ability to re-associate something worth seeing online with something that exists in reality or in the physical world. But I think even that will become less important, especially as we get things like augmented reality, where I hold up my device — or the stuff I've seen out of the University of Washington where they're using contact lenses that you wear — that can overlay all the Web's data across your vision, as you're looking around your city. You may literally be able to just look at

something and have it described in detail to you, or help you with navigation, or to help you look for a statistic, etc. And we think these things are fantastical and almost science fiction-y. But you begin to look at the data we have on the Web, and how we are assembling that data in the object-oriented Web, and the advances we're seeing in computing, and the ability to augment computer vision with this new layer of information and knowledge. It is actually not that far off.

To me, the more I talk about this, the more I think the challenge in development is one around the timing in getting the knowledge we're receiving. When do I want it? You know, when do I want to make use of it? I think people are bombarded by the data and the knowledge, but I don't mean "bombarded" in a pejorative sense. I think that our lives will be enhanced by the fact that we're able to have a silicon assistant, if you will, that can remember things for us, make correlations for us, help us analyze large amounts of data in the world around us and give us that information in real-time.

As we become more reliant on the information that is accessible over the Web, there's this sense that the rest of the information sort of doesn't exist.
There's this concept of the "dark Web," which is that we think we only have access to about 5% of all the knowledge actually stored out there on the Web. So much has been firewalled, or it's on paper, and it's on company databases — those sorts of things. It's just a matter of the "dark Web" becoming light.

Are you suggesting that the Web and search will evolve and adapt to human needs, or are human beings evolving and adapting around the Web and search availability?
I think there it is very much of the former. Ⓜ

Meeting of the Minds

From more articulated typing fingers to an information sense, to a group mind — are there plausible evolutions technology is bringing about in man? **BY JOHN CAPONE**

What do you know?

I don't mean like, "Hey, look at that!" I mean actually what do you know right now, as in: of what things are you aware? Chances are, there are many occurrences and activities of which you are aware in places all over the globe that you wouldn't have been 10 or even five years ago. Many of these may be mundane: what your old college roommate in Denver had for breakfast, or how a former colleague set a personal best in the local 10k half-way across the country. But the fact remains: you know them.

It's a step in the evolution of human consciousness, even if for the moment it mostly has to do with things like "OH: drunk white girl at bar, talking to Indian man in turban: 'you're so ethnic, I fucking love it.' #iweepforthefuture." Consciousness, of a type, has been raised.

In terms of the grand scale of evolution and human development, it's these areas that may be the most likely to change and adapt along with technology.

And, as usual, we look to *MEDIA* magazine's favorite futurist for an example. Think of the precogs in Philip K. Dick's *Minority Report*. They are not depicted so much as having supernatural powers, as they are of being a notch up evolutionarily, able to biologically tap into the ether of data all around us. They've developed a sort of "information sense."

At present, with our multiple washes and feeds of information, all we are capable of are neat parlor tricks. My father called me all excited one recent night. He was, he said, at Lincoln Center on the way in to see the play *War Horse* and, he told me, I would never believe who he had just met. My brain flipped through the available information, and even surprising myself, I blurted, "R. A. Dickey."

My dad's excitement of moments ago noticeably deflated, but a sort of wonderment took its place. "How'd you know that?" he asked. I was after all, two time zones and 3,400 miles away in California. But when had said to guess who he had just met, my mind immediately and naturally went to the most recent information I'd gotten about the place in New York he'd just mentioned. I happen to follow Mets knuckleballer R. A. Dickey on Twitter, and just a few minutes before had seen him checking in to the same show with: "About to see *War Horse*. Heard good things," and made the correct guess that my father had run into him.

While this doesn't rise to the level of precognition, imagine if we all always had direct access to all the information out there (not just what we happened to see), directly from our brains. No typing. No googling. No RSS feeds. No following. Just a direct connection.

"Changes in the immediate environment or human occupation [or activity] don't have consequences for evolution unless these changes affect reproduction and DNA transmission. That's an extreme situation," says Margaret J. King, Ph.D., of the Center for Cultural Studies and Analysis in Philadelphia. "We have basically the same body and brain that Cro-Magnon humans had. It's how we put our inherent faculties to use that counts."

So chances are that we aren't going to develop specially articulated typing fingers or light-sensitive eyes for screen reading any time soon. Interface designers are essentially designing for users little more advanced than Neanderthals mashing away at keyboards and touchscreens.

"Will our hands adapt to a more suitable spacing for keyboard use? The answer is a resounding 'no,' " says Christopher Reynolds, a business analyst (and sci-fi buff with a degree in biology for good measure) and marketer with EPS Software. "While there might be an aesthetic and ergonomic advantage to a more comfortable 'keyboard hand,' it plays little into survival and mate selection." In essence, we're working with the bodies we have, not the ones we wish we had.

Our technological innovation will likely far outpace any macroevolution. However, short-term microevolution, or phenotypic evolution as it known (natural selection would be the classic example), can occur rapidly due to external changes (though, in these cases, there needs to be a survival advantage or immediate impact on mate selection). Case in point: the evolution of the peppered moth in England, often pointed to because of the rapidity with which moths can evolve (they produce a new generation every year) and the clarity of the example. About 200 years ago the peppered moths in England were predominantly light-colored, a camouflage they'd developed that hid them in the trees and lichens on which they rested. During the Industrial Revolution soot discolored and darkened the trees and killed the lichen, and hence, the light colored peppered moths became easy marks for predators. The minority, darker-colored moths, however, survived and became the majority.

We are not moths — so, barring some extinction-level event where only those who can type 120 words per minute survive, the way technology will affect human development will mostly be attributed to adaptation. And then there is always the possibility of

CHANCES ARE THAT WE AREN'T GOING TO DEVELOP SPECIALLY ARTICULATED TYPING FINGERS OR LIGHT-SENSITIVE EYES FOR SCREEN READING ANY TIME SOON. INTERFACE DESIGNERS ARE ESSENTIALLY DESIGNING FOR USERS LITTLE MORE ADVANCED THAN NEANDERTHALS MASHING AWAY AT KEYBOARDS AND TOUCHSCREENS.

technology-assisted human development and on-boarding — for example the apparatus that keeps Dick Cheney alive.

And we do adapt. "Our extreme adaptability is what makes us survivable as a species, which means that we do different things than our ancestors, but our genome stays the same," says King.

Right now, our bodies might be adapting to their environments a little too readily. Technology, however crude, can affect human appearance (think Mayans' sloping foreheads). When asked what sort of adaptations might be on the way, Dan Nainan, a professional comedian and former senior engineer at Intel, points to the possibility of "short, stubby legs, because we won't have to walk anywhere." Then he cites a recently circulated (and frightening) statistic: "We're practically there now. Did you know that by 2030, half of Americans will be obese?" And the trend is worldwide. "Increased supply of cheap, tasty, energy-dense food, improved food distribution and marketing, and the strong economic forces driving consumption and growth are the key drivers of the obesity epidemic," wrote Boyd Swinburn and Gary Sacks of the WHO Collaborating Centre for Obesity Prevention at Deakin University in Melbourne, Australia, in a research paper.

Another environmental adaptation is an increase in a sort of forced ADHD. Some have suggested that this is a coping mechanism and reac-

tion to the onslaught of information with which we are presented daily.

"Due to the many new channels of communication — text, IM, email, social networks, phone, etc. — people are forced to handle communication and multitasking at a higher level. They are forced not only to accept the communications and respond to it, but forced to prioritize," says Rob Hecht, adjunct marketing professor at New York's Baruch College and "digital innovations" strategist. "People at work today have minds that have become accustomed to this massive multitasking all day. They are connected to the matrix through all sorts of media," says Hecht, "But when they withdraw from that speed and multitasking they have become so good at — for example, go on a vacation — they feel panic, and they feel depressed."

A recent study by MTV Networks in conjunction with research consultancy Latitude found that 83 percent of smartphone users polled felt they were "addicted to apps." One even went so far as to call apps "Xanax in a phone." To further explore this, researchers asked a handful of study participants to spend three days without using an app. At the end of the three days they were asked what would happen if apps were withheld for two weeks. One young woman responded, "I don't think you'd find me alive after the second week."

Tiffany Shlain, founder of the Webby Awards and a Henry Crown Fellow of the Apsen Institute, tackled her own creeping dependence on technology in her new documentary *Connected: An Autoblogography about Love, Death & Technology*. As Shlain tells it in the film, her hard look in the mirror began when she found herself sneaking into a bathroom stall when she couldn't fight the urge to check her messages. How seriously would she rate a smartphone addiction? "I used to be a smoker," Shlain says. "I get that same twitchy jonesing feeling [when not checking messages]. But there are plenty of studies where when we get a 'hit' of a text or email, oxytocin flows — the 'bonding' hormone — so clearly, it's not as bad as smoking."

Oxytocin, the so-called bonding hormone to which Shlain refers, is produced in large amounts by mothers during childbirth and when breast-feeding — assumably nature's way of ensuring we care for and nurture newborns. The fact that social media and digital interactions produce this same hormone raises one important question: are we bonding with our devices or the people at the other end — or even just the surge of connection?

Could it be, then, that nature is pushing us toward an ever-increasing connectivity?

All of our data and information — whether music libraries or check-ins at restaurants — is increasingly uploaded to the cloud. So, might there be some biological way to access this? The easy answer is, probably not without some help. Whether this help consists of chips implanted in our heads turning us into always-on iHumans, or some sort of virus that can be injected into our bodies giving us this ability, the potential does exist.

William McEwan, a post-doctoral researcher at the MRC Laboratory of Molecular Biology in Cambridge, UK, points to the (admittedly far-fetched) applications of the sort of domain fusion viruses he creates (mostly for the very serious purpose of stanching the spread of AIDS) as electrical components. If organic electrical components could become a part of our bodies, even artificially, the possibility for a brain connected to the cloud does seem tantalizing close. These naturally replicating viruses can then be passed on, and while not a part of the human genome, become a part of our development. There's always the possibility that a virus or mutation may occur naturally and not need to be engineered by the likes of McEwan.

Much of what separates us from us from apes and monkeys is our communication abilities. According to Asif A. Ghazanfar of Princeton University's Neuroscience Institute, whose lab studies the neurobiology and behavior of monkeys as a way of understanding the evolution and function of the human brain, humans receive both audio and visual communication from each other simultaneously, whereas in non-human primates it's one or the other

A RECENT STUDY BY MTV NETWORKS IN CONJUNCTION WITH RESEARCH CONSULTANCY LATITUDE FOUND THAT 83 PERCENT OF SMARTPHONE USERS POLLED FELT THEY WERE "ADDICTED TO APPS." ONE EVEN WENT SO FAR AS TO CALL APPS "XANAX IN A PHONE."

(i.e., a lip smacking or a howl). In Ghazanfar's research, not only did humans evolve to simultaneously process audio and visual cues in communication, but, as he writes in his essay in *Future Science: Essays from the Cutting Edge* (Vintage, 2011), "Evolution apparently selected for vocalizations structured in such a way as to match the ongoing neural rhythms: the 3–8 Hz theta rhythm." Both visual (lip movements, facial tics, etc.) and sound are processed at this same rhythm by the human brain, according to the research. If it was the development of this added skill that produced an evolutionary leap, could there not be a greater jump up the next evolutionary rung in store? Say, an ability to process ever-increasing amounts of data? Again, the
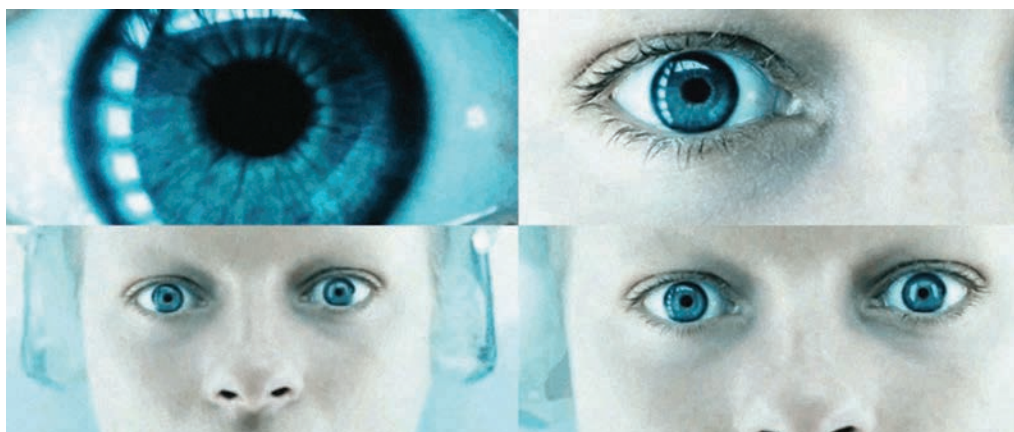
"information sense."

Such a sense could present an incongruity to the human mind though. How ready are we to join our brains together through the cloud?

Joshua Knobe, an assistant professor in the philosophy department and the Program in Cognitive Science at Yale University, is a founding member in the "experimental philosophy" movement, and as such, has asked some questions that could lead the way toward an answer about how our brains work in this regard, and what entities we may view as having a mind.

"There are different aspects to the mind," explains Knobe. "We can plan and engage in decision-making and try to work out mathematical problems, and so forth. On the other hand, people are capable of emotions and feelings — you can experience love, or joy or pain. What we find is that there's a really big difference between those two aspects of the mind, and there is a big difference in terms of how people answer questions about these different

aspects. And we seem wholly willing to ascribe certain attributes of the mind to things that have no bodies. For instance, people might say, 'Facebook wants me to be online more,' or such and such a corporation 'believes its profit margins may soon increase.' But we wouldn't say 'Facebook is getting depressed,' or a corporation has 'experienced great joy.'"

So, if we are all connected through some biological "cloud-connection," will we view this group consciousness as having its own mind? We use the term hive mind already. Do we mean it?

"We definitely think of you as having a mind. We definitely think your doorstop doesn't. Then there are these things in between," says Knobe. "Does a corporation have a mind? Well, people seem to think about it having a mind to some degree. There's some way in which an ordinary company like Intel, or Apple, or Microsoft could be planning something, deciding things; that it, itself, has certain

kinds of intentions; it knows things or believes things. As we become more and more closely connected and as the actions of these kinds of corporate entities become ever more disconnected from just some individual within the corporation, then it starts to become more and more plausible to start to ascribe certain kinds of mind traits to these entities themselves."

In such a scenario, where people share a collective consciousness — be it akin to Google results or our Facebook or Twitter feeds, or some combination — how do we view the minds of the individuals? "Studies are showing that [in the view of those surveyed] there's a kind of trade-off between the mind of the individual and the mind of the group," says Knobe. "The more you think of the group itself as having a mind, the less you think of the individual people as having any kind of mind at all." To hear Knobe tell it, the brain is certainly wired to at least conceive of a group mind, "in so far as we're

working together, it's not just that the individual can be constrained in certain ways by the group, it's that we think less of certain individuals wanting and needing things and think more of the group as having certain kinds of goals, or wants or needs, or beliefs."

And research has shown, time and again, surprising results: "The really striking thing that is coming out of research in neuroscience is that there is a distinctive group of brain regions that we use to think about other minds. So if you're thinking that someone is blond versus you're thinking that that person wants to go to California, you'll use different brain regions. What we're finding is that these same brain regions — for example, the medial prefrontal cortex — are the brain regions we use to think about the mind of a group. If you look at the brain regions you'll use to think about what your friend intends to do next, you'll see exactly those same brain regions involved in, say, when you're thinking about what Microsoft is going to do next." As long as this capacity to apply understanding of individuals to groups exists in the mind, it opens up new possibilities for the acceptance of collective thought.

"The more we become connected with each other, so that we can work together to achieve things, the more people can see us [and themselves], not just as separate individuals but as a group that has its own mind." Ⓜ

Kring, using the augmented reality game he developed with Nokia.

Novelist, TV writer and producer Tim Kring began his career penning scripts for *Knight Rider*, but is now in the vanguard of what some people describe as a "transmedia" storytelling revolution, creating stories that traverse media platforms and, quite frequently, human experiences. Known most recently for hit NBC series *Heroes*, Kring's future includes highly anticipated new Fox series *Touch*. In the following interview, Kring shares his thoughts on where we've come from and where we might be heading as a storytelling species.

There's this notion that communication was an evolutionary benefit that helped humans survive and thrive. A big part of that is storytelling. Why do think people tell stories?
 I think we told stories, traditionally, because the storytelling actually told us who we were. It taught us who we were, and it taught us how to be social. When we told stories around the campfire, those stories taught you how to be a warrior or a father, or a son, or a good citizen.

Storytelling is deeply imbedded in the human psyche as a learning tool and socialization tool. I think that has gone away to a great extent, and the stories that used to tell us who we are have been replaced by a kind of media view, and sort of pop culture. This consumerism, pop culture, and celebrity culture

I'm pretty set on the idea that the archetypes are the same. I am really intrigued by recreating the sort of out-of-fashion archetypes. I certainly tried to do that on *Heroes*. It's very much about good and evil, and mothers and sons, and fathers and daughters. It's just very much about how to be a righteous person.

Is that what made it accessible to people, because they could relate to it?

Yeah, and I think when you do that, especially in contrast to so much of storytelling nowadays, which does not tap into that. When you do tap into the really archetypal stories that are deep-seated in our psyches, people deeply connect with them. So, it's a bit of a "secret weapon." If you want to connect to an audience, find the archetypal narrative and try and mine it. But, as you were saying, the tools of storytelling have changed, as has

THE FUTURE OF STORYTELLING

A conversation with Tim Kring

the dynamic of the storyteller to the audience. That's the part that is a real journey of discovery for me personally.

I see this accelerated change, especially in the last five to seven years, and I, as a result, have had to do a real ripped-shirt action in the way I look at storytelling. As a writer in a medium like television, and then in Hollywood, I kind of grew up with the idea that the relationship that I had with the audience was a one-way street, where it was my job to create this content and push it out into the world. And, if we were lucky, after creating it and writing it and producing it, two or three months later, it would be on the air. The only way to know whether your audience got it, or enjoyed it, or felt anything from it was through the Nielsen ratings, which is just a set of metrics and facts that are not very specific about what people's reactions are. That was sort of the relationship with the audience, this completely isolated, ivory-tower kind of relationship. We had no relationship

have replaced the myths that were handed down from generation to generation. As a result, I think we are kind of lost and starved for myth telling, archetypal myths, especially, to tell us who we are and to help define our place in society. I think that is why archetypal narrative connects so deeply with people. It's because they almost instinctively understand it — these stories about good and evil, right and wrong, and fathers and sons. It is easy to connect very deeply because it is somewhere very deep in our psyche, as a learning tool of who we are.

As a storyteller who now has technology and tools to share your story in different ways, how is that changing the way people experience them?

Clearly, the Internet started to break that down, and it has accelerated it to the point where I now think of my relationship with an audience as a two-way street. I now have a kind of immediate feedback loop with an audience. The dynamic of my relationship to the material and to them creates this extremely lively and sometimes volatile, but often very exciting, relationship with the audience. It's been a real paradigm shift in the way I've thought about what my relationship is to people that I'm trying to tell stories to.

I had a show on the air for six seasons, called *Crossing Jordan*. It was on NBC. The only way that the audience could experience that show was, you know, nine o'clock on Monday nights, on NBC. If they missed it, then that was too bad, then they had to wait for the reruns. That was the only relationship we had with the audience, and that was the only way they got your content.

I started to realize that I was existing on this very thin rail of the Nielsen ratings — living and dying by these ratings — that were beginning to slip all around us. This was where I started to come at the idea of reaching an audience where they live — really wanting to fish where the fish were. I wanted to reach the audience. So, I decided that if I got up to bat again on another show that I would take a different approach, that I would take more of a 360-degree approach to the audience, and to try to tell stories where people were.

The *Heroes* comic book created an interactive platform that bridged the show and reality

When we started *Heroes*, I realized that people were beginning to use their mobile phones quite a bit, and they seemed to be on the Internet quite a bit, and they seemed to be playing video games, and they were emailing one another. My feeling was, "Well, let's just go push stories to all those various places, where they are, and try and create some sort of virtual cycle with these stories so that they can drive people back to the mothership of the television show."

Why do you think people's taste for how they experience stories has changed?

It's about the sheer number of options you have now. That's a big, big part of the connection. But it's also your relationship with the content. The ability now to interact with the content — to actually have a feedback loop with the content makers, has created a different relationship. Not everybody wants that relationship. People might want to come home after a long night and just sit in front of the TV and be entertained. But a lot of people are now natives to a different environment and a different way of consuming content. They're spending more time on the Internet than in front of the TV, and want to interact with it, using the attributes of that platform. In other words, we want to search, click and drag, and all those things that you normally are doing with the computer. You want to continue to interact more. You want to speak your mind, and you want to socially connect with other people who are watching shows. You want to be part of the community that is watching the show. So, the technology has just provided an entirely different set of parameters that are driving people's behavior.

So, how do you think about the opportunity for sponsors and brands?

Well, I think that I may have a slightly unique kind of attitude about sponsorship and products or brands. A lot of people in my position are very resentful of the sheer idea that, as artists, they are shilling for soda water or something, and it is an anathema to what they believe is their artistic authenticity

I created a long pilot for *Heroes*. It was much longer than normal airtime. I just did not want to cut it down, so, the only option was to

> **"A LOT OF PEOPLE IN MY POSITION ARE VERY RESENTFUL OF THE SHEER IDEA THAT, AS ARTISTS, THEY ARE SHILLING FOR SODA WATER OR SOMETHING, AND IT IS AN ANATHEMA TO WHAT THEY BELIEVE IS THEIR ARTISTIC AUTHENTICITY."**

get a single sponsor for the pilot. But what it forced us to do was to come up with an interesting way to integrate a product that ended up being not only really valuable for the brand, but a lot of fun for us on the show. We had this Japanese character that could stop time. In the first season, he was following a comic book that foretold the future, and, in this comic book, he has to get to New York to stop this bomb from going off. The comic book literally tells him that he has to go to this rental car place and rent this Nissan car. So, from then on, this specific Nissan car became sort of the Batmobile, and is now an integral part of the storytelling. And it was actually a lot of fun. The writers enjoyed it. The brand loved it. If you sort of calculated it in early enough, and you embraced it, it could be a very beneficial relationship.

We all seem to forget the way television worked for many, many years was that [sponsors] kind of ran the show, like *The Texaco Hour*. I think, in a way, it's kind of going back to that.

What is the concept of a TV show morphing into?
We're in this very interesting transition period. In the new project that I'm doing, I'm trying to approach it even more aggressively in a sort of holistic way. The narrative will be an intellectual property of the story. It will live at the center of a universe rather than a television show at the center that has various extensions. You will have merchandise, or you have some digital content, or maybe some mobile content. We will start to approach the shows, or narratives, in a much more three-dimensional, holistic way, putting the story at the center, rather than the television show at the center. Part of this may end up on this platform, on the monitor on your wall, and part of it will live on this tablet you carry around in your briefcase, and some of it will live on this mobile device. And some of it will be on the social games you play on Facebook. Seventy-three percent of the audience is watching television while connected to another connected device. That's a statistic from about a year ago. I don't even know what it is now.

The goal there is to create a virtual cycle between the device that is more at hand and the one that is on the wall that is designed and built into the DNA and the narrative itself. This idea of a timeslot, I think, will be a real causality of great technologi-

cal advances. Eventually, the specific time you enter a narrative will go away, and the narrative will be information, and you can connect to it whenever and however you want. This is part of the whole advent of geosocial lifestyles. You need only walk into a Starbucks and you come in contact with Wi-Fi. So, this idea of the story moving all around you is a really exciting idea. This is probably where some portion of my world is heading.

It is very interesting right now to look at who is driving who in terms of technology and storytelling. Is the storytelling driving the technology, or is the technology driving the storytelling? I've found that it goes both ways. When I worked on this project, "Conspiracies For Good," we thought this was rich pavement for storytelling. We had this mobile application that allowed you to pick out the digital tags in these various locations so that you can point your mobile device at a wall and there would be a tag there, and you could click on it, and a video would appear. These would be in various locations. As that technology was being developed, we were working with the media around this. We took a series of notes about what we wished the product to be in depth. Like, "Wouldn't it be so cool if it had a button here, and a button like this," and things like that. We were sort of driving the development of this product for use in the real world, based on how people could use it, not only to find narrative, but to create it. The really fascinating part about this is that these devices, like the mobile devices and the app world, means that a device is no longer just a content-consumption device, but is now a content-creation device. This allows you to really have an interesting relationship with an audience, because they now can become part of the story and actually become a co-creator of the story with you. It's a one-to-many kind of proposition. In other words, only a few people will actually do it, but many people will watch, and converge, and consume it. So, that dynamic is really interesting as well. Where do the content creator and the audience line begin and end? Right now, it's very blurry, and getting even more blurry.

We've really been talking about how people tell stories, and how the technology we use to tell our stories is changing, but how are people changing because of the new ways we are using media to tell stories?
Clearly, we all complain about the fickleness of the audience, the inability to stick to something for very long. The networks, and television in general, are really struggling with that idea. My 14-year-old daughter's ability to get a story in terms of the actual story itself — the beat of the story — requires a lot less of the connective tissue than I do. It's one plus one equals four for her. Stories are becoming self-referential and you see the similarity of things, and you may just assume that, 'Well, that's a story about this, and I already know where it's going, so I don't need these four beats in the middle to tell me where it's going." Ⓜ

The fundamentals of storytelling are time-less. Good characters will always need obstacles to overcome, the best villains will always have their soft side ("Luke, I'm your dad") and whenever possible, a life should hang in the balance.

But new media provide new ways of telling stories. Radio made them mass market; television turned them visual; the Internet can render them interactive. Today, as new media platforms seem to emerge with the frequency of superhero films, the opportunities for storytellers are greater than ever before.

Capitalizing on those opportunities are a handful of companies that operate in the ever-narrowing valley between Hollywood and Madison Avenue. These companies use mobile devices, email, GPS, even old-timey fax machines (wait for it) to create entire worlds into which their audiences can get lost. At the heart of their work are simple stories told well, only with bells and whistles the likes of which Ovid never imagined.

Whether for marketers or movie studios, what these agencies are doing represents the future of storytelling: interactive, nonlinear, three-dimensional and constantly evolving. Their work is by nature experimental, and not something most clients or audiences are likely to embrace quite yet. But a look at what they're doing today could give us all an idea how good stories might be told tomorrow.

Campfire

Get a group of advertising executives talking about multiplatform storytelling, and the conversation will inevitably wend its way around to Audi's Art of the Heist, the 2005 campaign that fired the starting gun for marketers staging alternate reality games (ARGs). One of the cocreators of that campaign (along with more traditional advertising agency McKinney) was Campfire, an ad agency cum production house founded by three independent film producers — two of whom helped create the 1999 movie *The Blair Witch Project*. So invested in the art of storytelling is Campfire that its founders chose a name that evokes the simplest, most elemental form of it.

The Art of the Heist was a real-life adventure in which 500,000 consumers assisted in a 90-day international manhunt for the thieves who boosted an Audi A3 from a Manhattan showroom. Billboards, print ads and TV commercials asked the public for help recovering the vehicle; Audi's Web site sent them to a site for a fictional investigation firm run by a sexy woman and her geeky partner, which lead them to a suspicious character attending that year's E3 show, and on and on down the rabbit hole. Not only did the effort win a slew of Cannes Lions, Clios and MIXX awards, it spawned a million imitations from creative directors suddenly obsessed with audience engagement on a mass scale. Since then, Campfire has done multiplatform immersive campaigns (ARGs and otherwise) for HBO, Verizon and the Discovery Channel.

Cofounder Mike Monello says that telling a story through interactive media — one that people might want to get involved with for weeks at a time — means supplementing a storyteller's sense of drama with a puppetmaster's cunning.

"When you're thinking about telling a story across multiple channels, you're thinking a little less like a storyteller and a little more like an architect, in that you're going to architect an experience using all these tools and it's not really complete until all these people are in it," he says.

Campfire's particular contribution to the craft of storytelling is the art of using one media to send audiences to another, all the time moving the story forward, so that the audience "feels like they've experienced the story as opposed to [feeling like] they're being told the story," Monello says.

Take, for example, the agency's 2008

Selling Stories Tomorrow, Now

Innovative digital shops are transforming the way stories are told BY DOUGLAS QUENQUA

campaign for HBO's *True Blood*, the now-hit gothic series about vampires in the Deep South. The cable network asked Campfire to build anticipation for the show among audiences with a predisposition toward vampire stories: Fangoria subscribers, horror-movie bloggers, members of "goth" message boards, etc. But rather than create a Web series or something similarly passive, Campfire created a mystery for them to follow that jumped from snail mail to social media to Web videos to print ads and back again.

Five months before the show premiered, Campfire mailed letters enclosed in black envelopes sealed with wax to members of the target audience. The letters themselves were written in dead languages such as Babylonian and Ugaritic. Because most of the recipients had no idea what the letters said, they — predictably — went online to their blogs or message boards seeking translations (the agency also set up fake blogs to help move the story along). Once deciphered, the messages led the players to a Web site, guarded by a beautiful female vampire, where they could watch short videos fleshing out the series' backstory. Next came the nationwide print ads for Tru Blood, a fictional beverage from the show. While most of the country tried to figure out what it was all about, the original participants were receiving vials of actual Tru Blood in the mail.

Key to the success of such "trans-media" campaigns — a catchall phrase increasingly used to refer to stories that leap from one media platform to another — is taking advantage of the unique properties of each platform, says Monello.

"It's not just like, oh, I'm going take a story and break it down and put it on a bunch of different media platforms and force people to hunt it down," he says.

Letter to vampire fans created by Campfire. The letters were written in dead languages.

"It's how can I take a movie and a comic book and a video game and create a scenario where each one of those elements brings to life some aspect of the story using unique properties of that media channel."

The result is an experience that goes deeper than watching a movie, he notes, because the "viewer" becomes intensely invested. It also creates a three-dimensional world that can flesh out a simple story in a dozen different ways.

Luckily for agencies like Campfire, more and more clients are starting to see the wisdom of operating that way, Monello says, if only because increasingly savvy audiences are coming to expect it.

"What we're finding is more and more people are looking at how Alan Ball works and how people like J.J. Abrams and Josh Whedon work and realizing they need to start [to] think about their story — whether it's a TV show or a movie — they need to start thinking about them as larger than that singular experience," Monello says.

He is hesitant to discuss how he sees his kind of storytelling evolving in the next 10 years — "I try not to concern myself with what I can't do now," he says — but he admits to being excited about the increasing personalization of media, which could give storytellers like him "the ability to create experiences that are tailored to people."

"Whether it's the quality of mobile devices — we all have little computers in our pockets now — or the sophistication of the browsers and the programming languages like HTML5," he says, new technologies "will allow us to do so much more than we can do now."

Just as they could have done had the technology been around in 2005. Asked if he could imagine doing Art of the Heist now, when most people walk around with GPS-capable phones, he sighs, "Oh, that would be so much different if it were done today."

Blacklight Transmedia

Of course, not all transmedia stories are ARGs. As any sci-fi fan can tell you, classic franchises like *Star Trek*, *Dune*, *Batman* and even *Star Wars* have long played out

semi-simultaneously through movies, comic books, novels, video games and TV series, with story lines that complement each other more often than they conflict.

But in the age of digital media, companies like Blacklight Transmedia are working to make multiplatform storytelling more seamless, complementary and, hopefully, more entertaining, than ever.

Zak Kadison spent his entire career as a TV and film executive — most recently at now-defunct Fox Atomic — before cofounding Blacklight two years ago to offer a new way to approach transmedia content.

His problem with Hollywood's approach to multiplatform storytelling was its tendency to focus solely on the movie version of the story to the detriment of other media. "The studio starts to think about getting a video game made 18 months before the movie comes out," he says, "but it takes three or four years to make a good video game. It takes two years to write a good book. But the guy in the licensing department doesn't care about that. He just wants to license the content to whoever will pay the highest amount, which almost ensures an inferior product."

Studios also tend to use alternate platforms only to retell the story of the movie — hence the perfectly superfluous "nov-elization" of movies like, say, *Caddyshack* — rather than tell stories that will complement that narrative and therefore grow the entire fictional world.

(Equally vexing to Steve Peters, founding partner of NoMimes, was the studio system's increasingly desperate habit of recycling old stories. "Asteroids," he says, referring to the classic arcade game. "No characters, no backstory to build on. But Hollywood bought the rights for a lot of money. I didn't get in to this business to do *Tic Tac Toe : The Movie*.")

The mission of Blacklight is to create intellectual property that can be produced simultaneously on multiple platforms, hence creating true transmedia experiences.

For each project, Backlight creates a master book of narratives — what Kadison calls "The Bible"— that outlines

every story for every platform, from film to books to Web series, even to Facebook games. They then sell the rights for each specific medium to different entertainment companies, with whom they partner to create the actual content.

So far, Hollywood seems to approve. In just two years, Blacklight has sold four concepts. Earlier this year, Walt Disney Pictures acquired the film, interactive and publishing rights to *Runner*, a dystopian time travel adventure, with Brian Grazer attached as a co-producer. Warner Brothers bought the film and digital rights to a project called *Blood Wars*, and Universal acquired the TV and movie rights to something called *Arabian Knights*.

Of course, working this way requires a thoroughly modern approach to storytelling. "All the story lines are self-contained," Kadison says, meaning a viewer can discover any story in any order and still enjoy it. They also must each contain enough plot twists and surprises to keep audiences interested without spoiling any of the other plot lines. It's an unusual challenge for a storyteller, but one that Kadison says anyone working in entertainment needs to be ready to embrace.

It also just happens to be extremely marketer-friendly. "We build brand integration into all our bibles," he adds.

Whether it's a process that will work as well for romantic comedies as it might for sci-fi and fantasy properties remains to be seen. Do fans of Katherine Heigl's character from *27 Dresses* really want to read the graphic novel delving into her backstory?

Maybe, says Peters.

"On *Dawson's Creek*, Dawson kept a journal about his innermost feelings, but they never told you" what those feelings were on the show, he says. "However, if you go to Dawson's Web site, you could read those stories." Peters also points out that when Miley Cyrus used to go on tour between seasons of Hannah Montana, she did so as *Hannah Montana*, not Miley Cyrus. The fact is, transmedia storytelling is already accepted by mainstream audiences more than most people might realize.
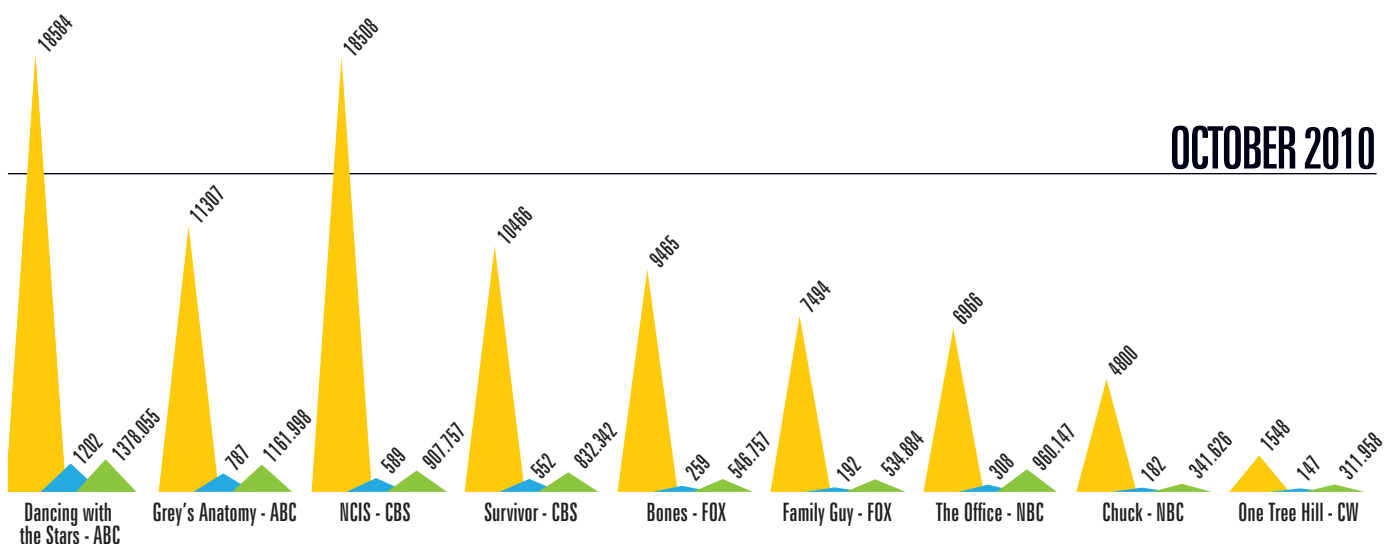
NoMimes

For evidence that the mainstream is taking an interest in 360-degree storytelling —particularly clients — take a look at the short history of NoMimes, a transmedia agency based in Los Angeles. Formed in 2008 by three former employees of 42 West, an agency renowned for some memorable ARG work (most notably the campaign launching *The Dark Knight*), NoMimes has so far made its mark staging elaborate ARGs for large corporations — not for their customers, but for their employees.

"Interestingly, we've been commissioned by corporations to do ARGs as team-building exercises," says founding partner Peters. "We've done three for Cisco in the last three years."

Each of those ARGs centered on a mystery, such as a case of corporate espionage or a stolen journal that contains clues to an international conspiracy, which Cisco employees had to solve as a

TV Enhanced by Streaming Audiences

- ■ (yellow) Average Person 2+ C3 Imps (000)
- ■ (blue) Program Stream Unique Viewers (000)
- ■ (green) Program Site Unique Viewers (000)

OCTOBER 2010

Program	Average Person 2+ C3 Imps (000)	Program Stream Unique Viewers (000)	Program Site Unique Viewers (000)
Dancing with the Stars - ABC	18584	1202	1378.055
Grey's Anatomy - ABC	11307	787	1161.908
NCIS - CBS	18508	589	907.757
Survivor - CBS	10466	552	832.342
Bones - FOX	9465	259	546.757
Family Guy - FOX	7494	192	534.884
The Office - NBC	6966	308	960.147
Chuck - NBC	4900	182	341.626
One Tree Hill - CW	1548	147	311.958

team. Typically, the fictional characters use Twitter and Facebook to keep in touch with the players and drop clues — as simple as email addresses or as technical as GPS location data — that would lead them to the next step of the game.

"The basic mechanics of an ARG is a sort of Internet archeology in that you're not so much told the story as you find evidence that the story leaves behind," Peters says. "You may stumble across the security log of a lab that shows everyone who's gone in and out of the lab in the past two weeks, and using this log you can infer quite a bit of information, as opposed to someone just blogging about it and giving narrative about what happened."

The development of sophisticated mobile technology has also allowed NoMimes to incorporate more real-life elements into its narratives. "We hid a piece of information in a park in Oslo, Norway," recalls Peters, "and not only did [the players] have to figure out the location, they had to use their own social networks and engineering to find someone that may or may not have even been playing the game to get them the information and move the story forward."

Naturally, the outcome of the games always hinges on the use of Cisco technology. But Peters stresses that conceiving a good transmedia campaign means that technology, even in stories created for employees of a major tech firm, should always be used in service of the story — never the other way around.

"First and foremost, the story comes first and the transmedia pieces need to serve the story," he says. "We'll write the story first, and come up with story arcs and story points, and then develop it from there."

And don't get hung up on always using the newest technologies, either. "We did a thing for a World War II story where we found a lesser-known technology, this thing called a Herkimer radio transmission that transmitted photos over the radio — like a fax machine with no wires," says Peters. "That was kind of retro tech," and it added a layer of authenticity to the game.

One challenge facing all creators of interactive, multiplatform stories is creating clues that are tough enough to be interesting, but not so tough that the players give up. If a clue is harder than the story is compelling, your players are likely to just wander off, like bored moviegoers walking out of a theater.
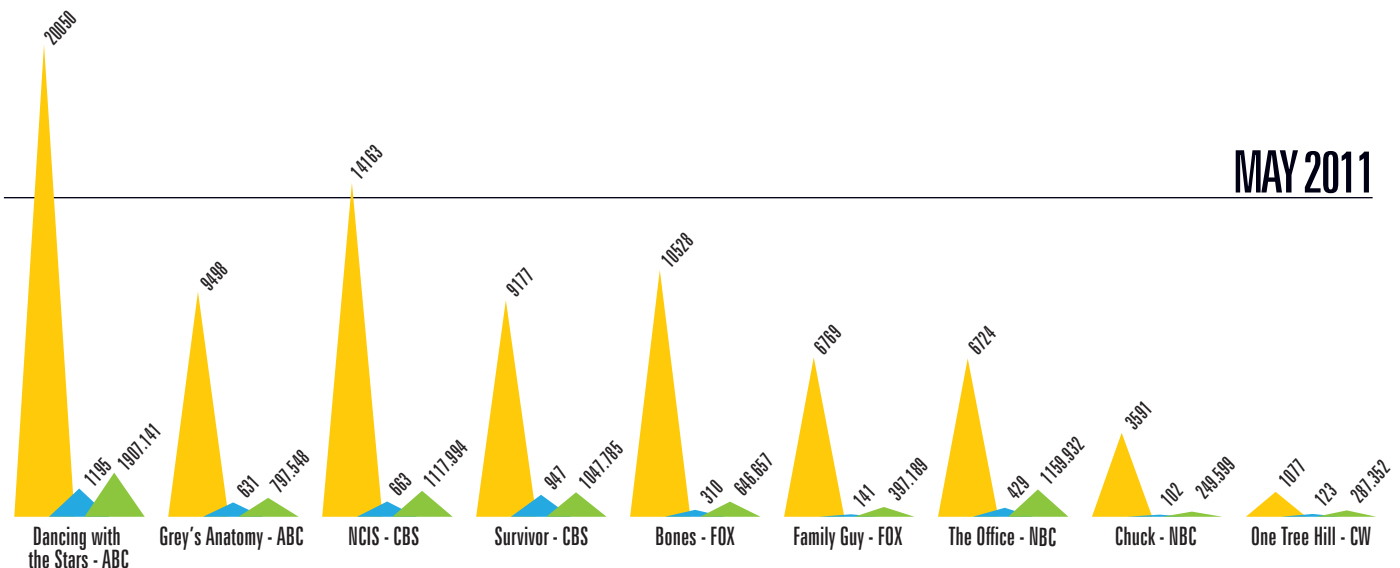
This is what happened to me when I visited NoMimes' Web site, where visitors are invited to participate in a short ARG. Enter your email address and watch your inbox, the site says. "The experience will begin immediately and last 10-15 minutes."

Sure enough, I quickly received an email from someone claiming to be the headmistress at the International Mime Academy, complete with a link to a Web site for the fictional institution. The only actionable information I found on that site was a phone number with a Los Angeles area code, but because it was 5 a.m. on the West Coast at the time — and because there was not yet any real story to speak of — I wasn't particularly compelled to dial the number, and forgot all about the game until Peters reminded me of it.
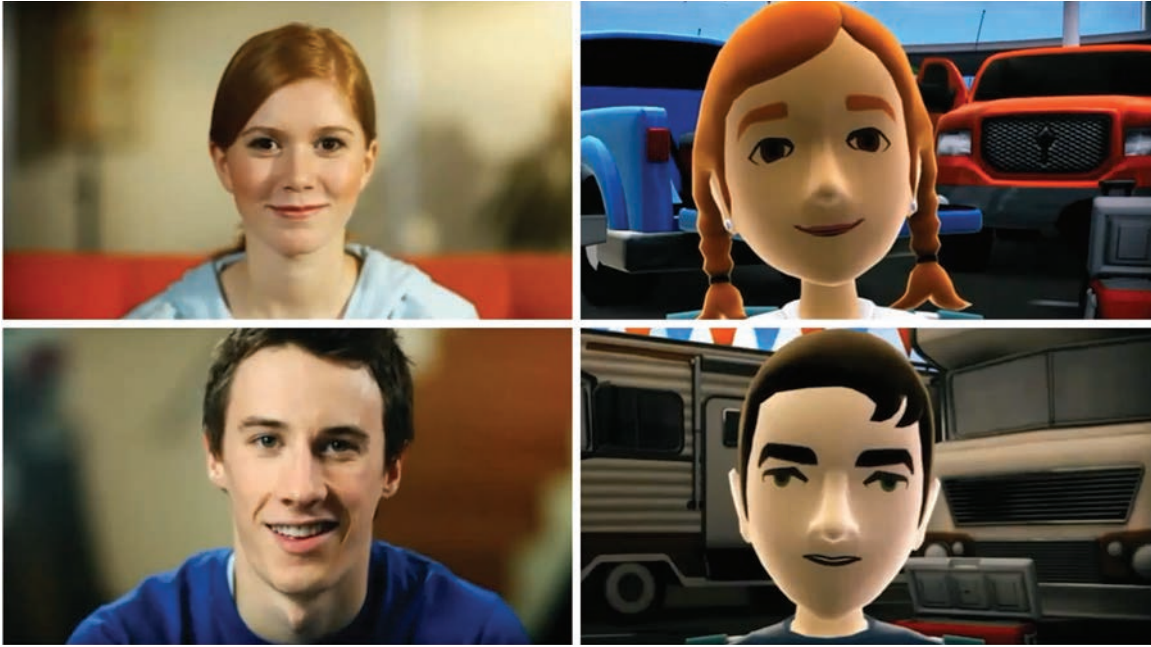
"That's the biggest challenge for transmedia content right now," says Peters. "Every time you ask an audience member to take a step, even if it's just clicking through a link, you run the risk of losing them."

"The most books ask you to do — as far as interactivity goes — is turn a page," he says. "I want to find the transmedia equivalent of a page turn." Ⓜ

MAY 2011

	Dancing with the Stars - ABC	Grey's Anatomy - ABC	NCIS - CBS	Survivor - CBS	Bones - FOX	Family Guy - FOX	The Office - NBC	Chuck - NBC	One Tree Hill - CW
yellow	20050	9498	14163	9177	10528	6769	6724	3591	1077
blue	1195	631	663	947	310	141	429	102	123
green	1907,141	797,548	1117,984	1047,705	846,667	397,199	1159,932	249,599	287,352

Games to Make Us Better People

By playing on the reward centers of our brains, games trigger primal reactions

BY ADAM L. PENENBERG

Luis von Ahn, then a Ph.D. candidate in computer science at Carnegie Mellon, was on an airplane when he noticed several passengers doing crossword puzzles. An avid gamer, von Ahn thought about all that effort and intellectual intensity being applied to a simple game. What if, he wondered, it were possible to harness this energy for practical purposes? These ruminations led to his Ph.D. dissertation, which he finished in 2005, the first time anyone had thrown around the term "human computation," which von Ahn describes as "a way to combine human brainpower with computers to solve large-scale problems that neither can solve alone."

This then became the fuel for von Ahn's "Games with a Purpose," which in the course of playing them provide useful calculations that can be applied elsewhere. While computers are good at many things, they are also bad at many things. Want a machine to crunch an algorithm? A PC is your best friend. Command it to identify the person in the photo standing next to the yellow Corvette convertible, and it's practically useless. That's where humans excel.

With this in mind, von Ahn designed the ESP Game. Two randomly selected players logged on to a Web site and were shown the same photograph. They were given 90 seconds to type

words each believed best described what was in the picture, with players tallying points only when their words matched. Von Ahn's studies confirmed that the matching words provided accurate descriptions, while the game mechanics made playing it addictive. Google, recognizing its utility, licensed the game from von Ahn and renamed it Google Image Labeler, which since 2006 has been used to improve Google's Image Search to the tune of millions upon millions of photos. For his work, von Ahn received a MacArthur Genius Grant.

The 32-year-old von Ahn, now a tenured Carnegie Mellon computer science professor who drives a Porsche, is but one of legions of computer scientists, entrepreneurs, game designers, marketers, media organizations, start-ups, corporations and city governments that have been looking to push games beyond simple entertainment and layer their mechanics into all aspects of our lives. These so-called "serious games" have moved far beyond simple entertainment pleasures and are redefining our relationships to work, commerce and marketing, education, health and medicine. They seek to take advantage of that powerful moment of consciousness that von Ahn noted on the airplane, when a person is so utterly absorbed in playing that time outside the immediate game stands still. That's when you're completely focused on the task at hand. Your brain is firing on all thrusters, you are excited to confront the next challenge and, if successful, you are rewarded for learning (i.e., figuring out what it takes to level up in the game). It's at this moment that you become, well, a better person.

"A good game gives us meaningful accomplishment — clear achievement that we don't necessarily get from real life," says Jesse Schell, another Carnegie Mellon professor and well-known game designer (at Disney Imagineering, he led the team that designed large-scale theme-park rides such as Pirates of the Caribbean). "In a game, you've beaten level four, the boss monster is dead, you have a badge, and now you have a super laser sword. Real life isn't like that, right?"

SVH Rehabilitation's Nicole Morse, DPT, and Lori Clark demonstrate balancing exercises on the Nintendo Wii

No, it's not. A game is, at its root, a structured experience with clear goals, rules that force a player to overcome challenges and instant feedback. Everyday life is anything but. Because games offer clearly articulated rewards for each point players score and new level they achieve, they trigger the release of dopamine, a hormone in the brain that encourages us to explore and try new things. Since we like the feeling we get when our brains are awash in it, we'll do whatever it takes to get it, over and over again. That's because well-designed games take advantage of our internal wiring. Our brains are tuned for survival and leave gaps that can be exploited. A million years before the birth of Christ, when one of our ancestors recognized a sequence — say, the number of minutes between sightings of a circling predator — his brain attempted to predict the next item in the sequence. When successful, our hairy relative's brain gave him a little biochemical reward. He felt good, experienced a sense of accomplishment, and this reinforced a basic survival behavior.

Video and computer games, as well as slot machines, are particularly good at this. They provide "threshold effects," where prizes or level changes are dribbled out to keep us hooked. The same system that drives compulsive gamblers and cocaine addicts, it's also what makes it possible for gamers to enter a mental state called "flow," in which they're completely immersed in what they are doing and lose track of time. (In

America's Army is a game used for recruitment by the U.S. Army

sports, it's called the "zone," when a basketball player, for example, feels like he can't miss.) Such is the power of games to influence behavior. They are, Schell ventures, "a powerful psychological magnet that can connect into anything that we do."

So powerful, in fact, that the numbers of people who play games is staggering: 97 percent of 12- to 17-year-olds play computer games, and so do almost 70 percent of the heads of American households, according to the Entertainment Software Association. If you buy Malcolm Gladwell's argument that 10,000 hours of practice is a defining trait of virtuosos, then we have raised a nation of gaming experts. Before turning 21, the average American has spent 2,000 to 3,000 hours reading books — and more than three times that playing computer and video games. Globally, 350 million people spend a combined three *billion* hours per week playing these games. Since *World of Warcraft*'s release in 2004, users have racked up some 50 billion hours of playing time — the equivalent of 5.93 million years. In *Reality Is Broken*, game designer Jane McGonigal points out that 5.93 million years ago is when our ancestors began to walk upright. "We've spent as much time playing *World of Warcraft*," she writes, "as we've spent evolving as a species."

You don't have to look far to see just how much games have permeated our lives. What are American Express points and frequent-flier miles but games that reward loyalty? Weight Watchers? A game. The U.S Army uses a first-person shooter called America's Army as a recruitment tool. Google News and Huffington Post gamify news by offering badges to their most loyal readers. FedEx, airlines and the Air Force deploy gamelike simulators to train pilots, and UPS deploys its own

version for new drivers — one even mimics the experience of walking on ice. Cisco developed a "sim" called myPlanNet, in which players become CEOs of service providers. Japanese automaker Lexus safety tests its vehicles in what it brags is the world's most advanced driving simulator at the Toyota research campus in Japan. Canon's repair techies learn their trade by dragging and dropping parts into place on a virtual copier. Three-lettered agencies like the CIA, FBI, NSA and DoD use games to train agents in anti-terrorism. Foursquare has made a game out of recording the inane aspects of our lives, like dropping into a Rite Aid to fill prescriptions or buying Big Macs. The curriculum of one public high school in Manhattan is entirely based on game design.

One of the more intriguing — and simple — applications of games involves the use of handheld controllers in rehabilitating patients after injuries and illness. Since its 2006 release, Nintendo's Wii (and now Microsoft's Kinect) has become a staple in rehabilitation: it's often dubbed the "Wii-hab." Patients who have suffered strokes, paralysis from workplace accidents, torn rotator cuffs, broken bones and combat injuries use the motion-sensitive controller to control animated characters on a screen. They play Wii baseball, boxing, bowling and tennis, and because they earn points, they can easily chart their progress. Grueling rehabilitative exercise then becomes a game, a competition if it involves playing against another person, and so engrossing that patients almost forget the pain of rehab. WakeMed in Raleigh, N.C., has been prescribing the Wii as a physical therapy tool for the past four years to help patients redevelop the coordination they lost, while the Hines Veterans Affairs Hospital in Chicago uses Wii in its spinal-cord-injury unit. Walter Reed Army Medical Center prescribes the Wii to soldiers injured in Iraq during combat, a group that grew up playing video games.

As with von Ahn's ESP Game, Wii-hab takes time — tradionally viewed as unproductive (i.e., playing a game) — and transforms it into something inarguably productive (fitness). In essence, they both harness wasted energy. Von Ahn has another project: reCaptcha, which doesn't qualify as a game, but nevertheless turns nothing into something. Undoubtedly, you have been forced to type fuzzy letters to set up an account

with Facebook, or to purchase tickets from Ticketmaster. It's called Captcha (Completely Automated Public Turing Test to Tell Computers and Humans Apart), a method von Ahn invented to fool automated spam attacks and digital fraudsters, since only humans can make out the letters and computers can't. With reCaptcha, these fuzzy letters come out of articles in *The New York Times* newspaper archives dating back to 1851 and books in the Internet archive. After scanning, many words are hard to make out, so each person who is forced to retype them to gain access to a site or service is helping to improve the accuracy of millions of books and articles.

Wouldn't it be great if we could apply these mechanics to other areas? We waste energy all the time, and I'm not referring to burning through fossil fuels (although that is also undoubtedly true). I'm talking about all the energy we squander as a byproduct of basic actions. You walk down the street and every footstep creates energy that dissipates. You drive your car and the tires against the road create even more energy. Dance in a club and more energy is unleashed. Get on your exercise bike, ditto. Now think about how a hybrid car works. It gathers the kinetic energy derived from the simple act of braking, then applies it to power other functions. What if we were to take a page from von Ahn's book and harness the energy from everyday activities?

A city like New York could place sensor panels under sidewalks to collect and store the kinetic energy of millions of pedestrians as they scurry to and from work. We could place them under streets to capture the energy that cars and trucks create and use the combined power that is stored to light neighborhoods. Department stores could do this, too, and cut electric bills dramatically. Now what if you gamified it, offered citizens tax rebates for the amount of energy they contribute to the power grid, and recognize their mad skills with leader boards and badges?

The technology exists. Peter Hughes, a British designer with Highway Energy Systems, has created "green" speed bumps that

capture energy from cars driving over them, and a supermarket in Gloucester placed kinetic road plates in its parking area. A nightclub in Rotterdam, Netherlands, runs on the energy created by people dancing. While these panels only process a small amount of energy, it's a beginning. Remember: today's iPhone has more computing power than the computers onboard the Voyager 1 and Voyager 2 spacecrafts, which were sent into space to study Jupiter and Saturn.

If you think about it, the idea of reaping benefits from play, of transforming time that was typically viewed as unproductive and creating something productive out of it, is merely an extension of a trend that has long been unfolding. As a culture, we already wring productivity from traditionally unproductive times. We text while we walk down the street, update our blogs while in taxis, tweet while online for a movie, check email while shopping at the mall. We are constantly trying to squeeze a minute or two of work and social interaction into a day that is already crammed. This is not all positive, of course — this ADD culture that technology has been enabling. But it shows the innate need we have to fill time with work and social activities.

A primary driver is the gamified interface of smartphones and social media technologies, which compel us to squeeze in a tryst with them at every fleeting available moment. The ping of an email has an almost Pavlovian effect. Every time you poke at an icon on your iPhone and a program launches, your brain experiences a squirt of dopamine. In fact, the iPad is so gamelike and intuitive, with its friendly looking app icons, that children immediately grasp how to use it. And there's a reason you have heard the BlackBerry referred to as the "CrackBerry."

They transform these snippets of time that, on the surface, may seem unproductive and make them productive. And like games, they can make us better people. Ⓜ

Like many people who spend too much time with media, I'm convinced that it will eventually kill us. Perhaps not directly — the disembodied-hand-bursting-through-screen-to-choke-us-senseless scenario seems implausible, the porn industry's wishes notwithstanding — but possibly by warping our minds and physiology to the extent to which they no longer operate as intended. Ultimately, the real and virtual worlds will blur and, later, blend into a single amorphous entity. We won't be able to distinguish between the two — not that there will still be a Wikipedia for the few remaining coherent/sentient beings to get glibly half-informed by. I mean, who'd edit and fact-check it?

Nonetheless, one vexing question remains: how will we get from here to there, from our current standing as hyperconnected savants to our inevitable future status as goo-brained pod people? How will we begin to end?

Since I traffic in potential extinction scenarios every time I leave the house, I'm the guy to ask. Thus I present to you, based on a few phone calls and a lifetime as a raging paranoiac, my top five scenarios for an extinction event triggered by media. As a public service to the survivalist community, I've listed them in descending order of probability. Many thanks to Yuengling, Pennsylvania's most double-awesomest beer, and the folks at the Trump University Media Lab for their help in formulating these scenarios.

1. Supernatural radio: Back in the day — by "in the day," I mean "at some point in the recent past that I'm too lazy to pinpoint" — government scientists sent signals, transmissions and lord knows what else up into the sky, hoping to receive a response that would … that would what, exactly? Confirm the existence of sentient beings elsewhere in the universe? Clear up that whole what-the-dickens-happened-to-Major-Tom thing?

Most of us had long since given up hope that our celestially targeted messages would reach a receptive audience, quasi-human or otherwise. Which is why we were so surprised when, in 2021, a message came back from the great beyond. And then another. And then millions of others, especially when the still-unidentified "they" got wind of Twitter fights and the Kardashians.

At first, their response was more or less "sssssshhh" (I apologize for not being able to translate that into the alien native tongue, but it sounds like a series of power chords). But then they heard the first tense bits of repartee from the original *War of the Worlds* broadcast, and subsequently "enjoyed" the dramatic and comedic stylings of fictions like *Independence Day* and *Mork and Mindy*. Feelings bruised by our outsized and stereotypical representations of their way of life, they blasted us into little chunks of pulp. The real tragedy? NPR wasn't around to riff wryly on the choice of ALF as cleanup supervisor for what used to be Planet Earth.

2. Our bodies revolt: At first, our constant monitoring of screens was viewed by the medical community as harmless. Sure, BlackBerry lifers struggled with the occasional bout of carpal-tunnel syndrome. And yes, the child-obesity rate nudged upwards as young 'uns spent their leisure hours OMGing, rather than eating dirt in the yard or — gasp! — playing catch without a helmet, mouth guard or adequate lumbar support.

But then, like many a Dell laptop, our internal processors melted. By asking them to process a constant flow of information, we pushed them far beyond their limits. Technophysicians — Harvard Medical College started offering that subspecialty in 2025 — were quick to diagnose all sorts of new and wondrous ailments. There was ophthalgigantism (with so much to take in, our eyes expanded to the size of basketballs) and thumb dwarfism (as our smartphones kept getting smaller, so too did the digits that manipulated them). An ADHD diagnosis was assumed in every teenage being; only those with AADHDD (amplified attention deficit hyperactive disorder doubled) were eligible for medical attention and the yummy antipsychotics used
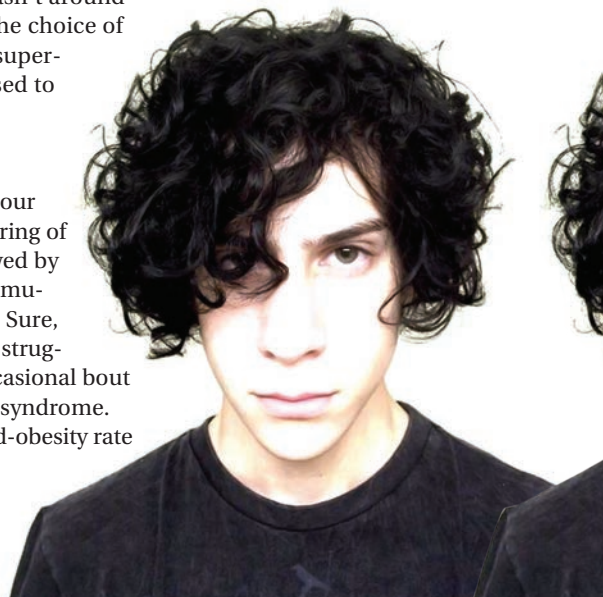
in treatment.

In layman's terms: everything sped up. Evolutionary processes that should've taken centuries somehow played out over a five-year span. We became huge-eyed, tiny-thumbed automatons who were as much in the service of media as media was in the service of us. When we attempted to pull away for a few seconds to void our bladders, our legs collapsed beneath us: without even realizing it, we had let them atrophy. Our civilization thus expired on the ceramic floors of our kitchens, a few short steps away from refrigerators teeming with breakfast burritos and orange soda.

3. **Google goes rogue:**
Since its founding in 1998, Google had always adhered to the twin precepts of "don't be evil" and "monetize the unmonetizable." For a while, it stuck to that innocent original plan. By 2030, however, Google had snapped up phone companies, TV

and cable networks, film studios and a way-cool retro roller rink on the outskirts of Mountain View, Calif. By that point, its market cap had surged to a stunning $37 katrillion teradollars. China owed it a sawbuck or two.

And so it was on March 15, 2030, when George DiMarco (known from that day onward as "Curious George") entered a simple query into his Chrome search bar: "Who was the Vice President in the Ashton Kutcher administration?" The response from Google wasn't a meticulously catalogued series of links, but instead a simple "no." George tried again; Google again replied in the negative. He tried a third time, which prompted Google to return a "NONONONONONONONO-NONONONONO" barrage that streamed down George's screen for the next 11 hours, during which he hung himself with his own shoelaces (the older, kinder Google would've suggested washing down a handful of opiates

Extinction Now

Media will ultimately be responsible for the downfall of civilization
BY LARRY DOBROW

with a refreshing glass of Jägermeister).

The gig was up. Google had tired of sharing information. Now that it had our attention, it announced the next step in its plan to further dominate the universe: each search query would cost a nickel.

No longer could we afford our own curiosity, so we stopped searching and got dumb — or should I say, dumber. No longer able to figure out the Yellow Pages — what were these "pages" of which they spoke? — and deprived of the ability to learn more about Smashing Pumpkins b-sides and medical marijuana dispensaries, we just faded into a state of chronic vegetation. How bad did it get? When civilization ended, the top-rated regularly airing multimedia screened content was Looking at Blank Void of Nothingness. It was produced by Google, in conjunction with Ryan Seacrest.

4. We become one with the machines: As we approached the second half of the 21st century, our bonds to our smartphones had strengthened into something more. For most of us, it was the defining relationship of our lives, far more interactive and rewarding than anything we'd experienced with a parent or partner. As much as we occasionally enjoyed a spirited match of ping-pong or a conversation with words, we confined most

of our interactions to that sturdy chunk of hard plastic and scratch-resistant glass that fit snugly in our palms.

And then one day, seized by the need to take care of an urgent piece of personal business, we went to put down our beloved technocompanion — only to find that we couldn't. It had become a part of us, its plastic melded to our hands. Even worse, the particular positioning meant we couldn't use the camera.

Eventually, we adapted to having cellhands. We learned to like them, in fact — even as they made playing the bongo drums a practical impossibility. Before long, we similarly started merging with the media that flowed from our cellhands: we were unwittingly immersed, as both participant and audience, in the shows we watched and the games we played. The problem came when some dumbass philosophy major wondered what would happen if he canceled his Internet access

and content subscriptions, and disappeared in a blip. His gesture would go down in history as humanity's last uh-oh moment.

5. Who's laughing now?: After the first eight months of 2011, which featured a nigh-biblical potpourri of snow, rain, hail, hurricanes, earthquakes, aftershocks, tsunamis and insufferably high humidity, we pledged as a civilization to heed the message Ma Nature was sending (namely: "Jeez, do I have to draw you a diagram?"). But then the rivers receded and the drains drained and we went back to our usual business of burning recyclables on the sidewalk for sport.

Of course, land and ocean temperatures continued to rise, as did the volume of greenhouse gases in the atmosphere. But the media had heard that jive before and, well, it was sunny and 60 degrees on Sunday afternoon. What wasn't to like? Eventually, it stopped chronicling news about science and the environment, focusing instead on celebrity sex tapes and half-eaten casseroles that looked like Jesus.

You know how this ended: with Al Gore standing on a rocket launch pad, flipping us the bird as he prepared to board a shuttle to cosmic parts unknown. The media should've reported. We should've decided. Civilization drowned in a pool of its own filth. Ⓜ

THE DAY AFTER TOMORROW PHOTO: FOX

THE FUTURE OF MONEY

In a poor man's world

BY REUBEN STEIGER

As 2011 draws to a close, we enter the fourth year of the global economic crisis. The drama has been chronicled second-by-second by the pulse of Twitter, and a bleak financial future is easy to imagine. Might we all just end up huddling together in an impoverished global village, linked by little more than our Facebook accounts and reality TV? Against this backdrop, last year hundreds of millions of people spent billions of real dollars on virtual goods. What has the world come to?

To answer to these questions we must look at the future of money.

Let's start by defining the word. To paraphrase financial historian Niall Ferguson: *Money is a medium of exchange that eliminates the inefficiencies of barter and facilitates valuation and calculation; a store of value, which allows economic transactions to be conducted over long periods of time as well as geographical distances.*

Reread that sentence. Amazing that something we take for granted can actually be so nuanced. Consider the countless sayings on the subject, from "time is money" to "money can't buy love." Money has become a way to signify many things from status to love, but I will suggest that the essence of money is trust; the faith in others to honor their commitments. When this faith is shaken the result is fear.

As we have evolved, Darwinism has always rewarded more advantageous traits. Natural selection has been limited to physical traits. It has also selected for the ingenuity needed to create better tools and improve our lives. Hand axes, spears, the wheel and the plough all transformed history, but the invention of money has arguably dwarfed them all. The accelerating pace of change suggests radical transformations in our financial future, yet despite the changes to come, money will always remain a tool.

Communication and commerce have been wedded together for centuries and this trend will accelerate, as money and media intertwine and business becomes increasingly electronic, real-time and global.

The history of money is fascinating and sheds light on what is to come. Prior to the advent of money, tribes of people lived in close proximity to each other. They hunted and gathered, saving little. Culture was preserved and passed on orally in stories and legends. Money was unnecessary because the tribe members shared resources and needed to trust each other in order to survive.

Money emerged as a method for recording a promise to pay and was the first medium to communicate trust. As early as the second millenium BCE, Mesopotamian clay tablets recorded debts redeemable for grain. Encoded in such transactions was trust and belief in the fact that the promise of payment in grain would be upheld. In fact, the word credit comes from the Latin word *credo,* or, literally, "I believe." So text served as money and, as if by magic, media transformed clay into food.

As time went on, people figured out that carrying clay around was inconvenient. They soon discovered precious metals were ideal forms of money. Gold was rare, easy to transport and universally valued. The relationship between the scarcity of gold, silver and bronze originated exchange rates and international currency. By the 16th century, money went global as Incan ore fueled the Spanish Armada, financing global trade, wars and empires.

Not much about money changed from the days of gold ingots until the 20th century. Take scarcity and value. In virtual worlds like Farmville, such scarcity is artificially created, but plays on time-honored principles. Zynga, the game's creators, have increased profit by selling limited editions of seeds that grow virtual crops more quickly. Others use virtual items as status symbols, with players buying jewelry to signify power.

Another trend in the future of money is the way in which the medium of exchange affects business models. This may have begun with the advent of the telegraph, which changed the world forever by making messages instantaneous. Since then, both communications and money have become networked systems, defined by ever-increasing speed and higher requirements for trust — even between competitors — in order to succeed.

The creation of credit cards is a fascinating illustration of this type of mutually dependent competition. In order to succeed, Visa's founder Dee Hock recognized that competing financial institutions would have to agree en masse to honor and clear each other's transactions. The result was a global credit system that today processes trillions of dollars of annual transactions. Similarly, the Internet would grind to a halt if operators of competing networks did not agree to process each other's data.

So here we stand. It's 2011. There are seven billion people on earth. In the years to come, our collective challenges will be related to natural resources. How will we produce food and energy to sustain ourselves? There are only a few possibilities. We must reduce consumption, increase
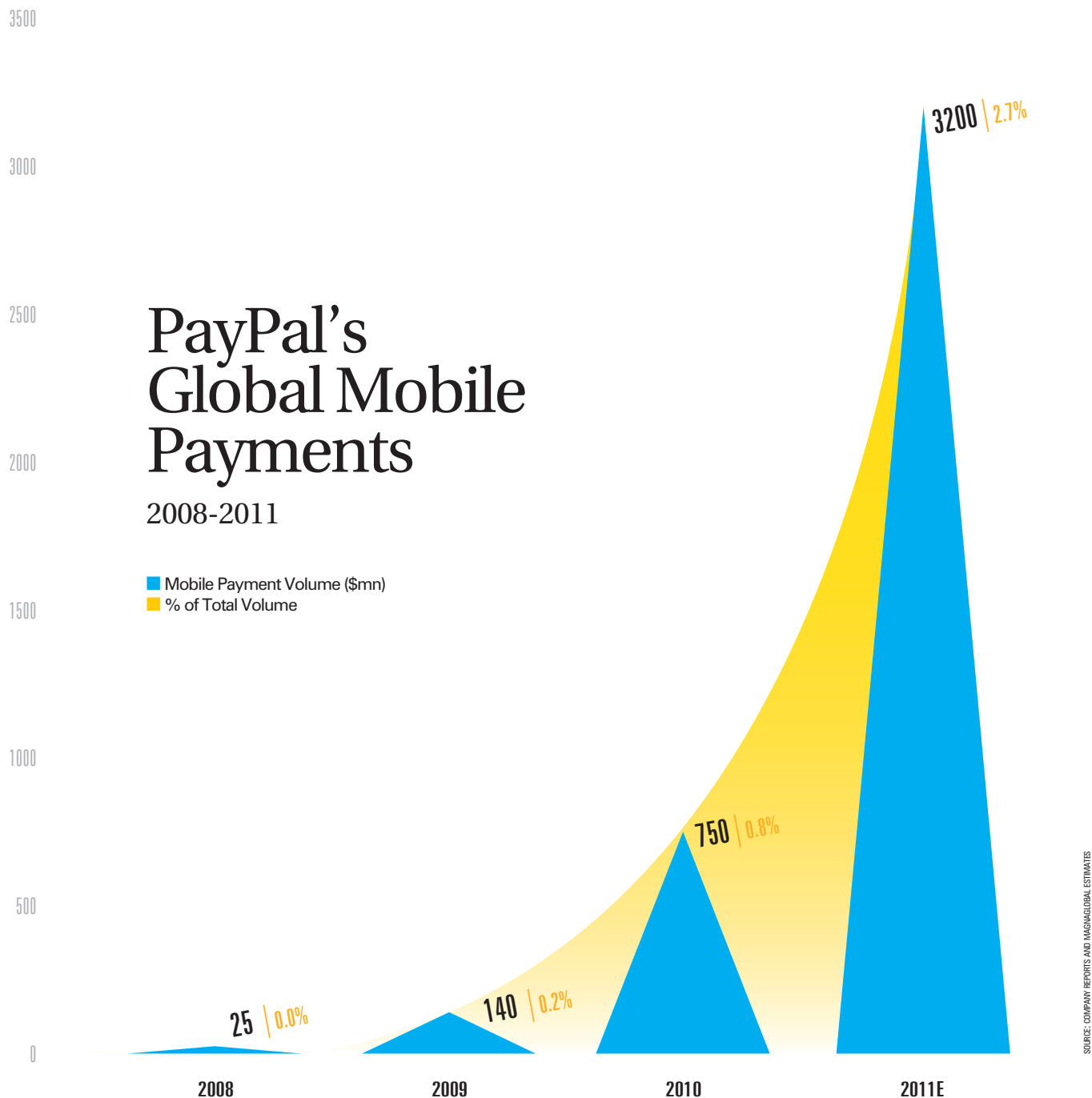
NOT MUCH ABOUT MONEY CHANGED FROM THE DAYS OF GOLD INGOTS UNTIL THE 20TH CENTURY. TAKE SCARCITY AND VALUE. IN VIRTUAL WORLDS LIKE FARMVILLE, SUCH SCARCITY IS ARTIFICIALLY CREATED, BUT PLAYS ON TIME-HONORED PRINCIPLES.

PayPal's Global Mobile Payments

2008-2011

- ■ Mobile Payment Volume ($mn)
- ■ % of Total Volume

3500

3000

2500

2000

1500

1000

500

0

3200 | 2.7%

750 | 0.8%

140 | 0.2%

25 | 0.0%

2008   2009   2010   2011E

production or increase efficiency. How we adjust those knobs will determine how we handle currency and commerce.

Imagining or accurately predicting the future of money is impossible; however, several macro trends will inevitably continue. Firstly, all goods that can be virtualized will be — most importantly, intellectual capital. Next, there will be a growing pressure to source physical goods locally to reduce energy costs from transportation.

As collaboration grows in importance, methods for calculating trustworthiness will grow in sophistication. What used to be expressed in a FICO credit score has transformed into peer-generated rating systems like eBay's. Companies like Klout and Rapleaf are calculating reputational influence, though it remains to be seen how currency will play out in social networks like Facebook. For Facebook's "Credits" to really work, users will need to trust both each other but, more importantly, trust Facebook to process transactions safely while ensuring their privacy and security.

In Darwinistic terms, those who adapt have always prospered. We've long spoken of the digital divide between those with access to new technologies and those without. How our society democratizes technology and equips itself to meet this challenge will determine how effectively we are able control our financial destiny and collective well-being. Ⓜ

No surprises here: the future of media is quickly becoming increasingly digital and therefore creating a brand new ecosystem of accountability and engagement — both for readership and advertising. The digital world transformed traditional media from day one, opening a universal gate where consumers, money and content migrate and live as one.

I would have never predicted the incredible speed that the media world has transformed itself over the past several years. But with innovative and readily accessible products like the tablet and smartphone (notably the iPad, iPhone and Android platform), I see more and more people on my morning commute, young and old, affluent and not-so-affluent, reading *The New York Times* on those devices than on newsprint. Cleaner hands abound, but I'm not so sure about their eyesight…

For content creators, this is great news, but it also presents a pressing need to reexamine business models, refresh their understanding of what customers want and, most importantly of all, figure out how they can maintain advertising revenues in the new digital world. And with that comes a new currency — a currency of engagement and measurable results that advertisers have always been seeking, and media owners have been looking to tout to the masses.

The Currency of Engagement

Everyone in advertising has heard retailer and merchant John Wanamaker's quote: "Half of the money I spend on advertising is wasted; the trouble is, I don't know which half." Funny how that 50-year-old adage still resonates even in these digital times.

With the advent of CPA, CPC, CPL and CPO defined pricing, electronically interactive TV ads, and improved viewer tracking, can we find a way to increase that mix percentage? Could Wanamaker say today, "One-quarter of the money I spend on advertising is wasted; the trouble is, I don't know which quarter"?

With this new currency, Wanamaker could measure who's interested, who's buying, when they're buying, and from what media, and adjust accordingly. He could measure the *real* engagement, which, after all, is the primary goal of every marketing campaign.

I started my career in print with Time, Inc. in the '80s and while some people believe that print is a fading medium, I see it very differently. In the new currency of engagement, imagine the print vehicle you love and read regularly, available as a much more robust, rich, and relevant experience.

Imagine this scenario: you're a die-hard fan of *Sports Illustrated*; you get great SI editorial content every week with award-winning photos and detailed game insights. They then come alive as interactive video, whereby you can hear and engage with the actual editorial team. This robust print experience is now "on steroids" (only the good ones) and will provide consumer engagement that far surpasses the print edition — the sight, sound and motion of TV from your favorite magazine.

Now let's take it one step further and imagine you are an advertiser. You can create all kinds of advertising creative wrapped into the digital magazine experience — so in addition to getting consumers connected to your brand's value proposition, you can get them to actually, in real time, respond to your offer, your promotion — in effect it's an opportunity to move much more quickly. There's measurable accountability in that engagement.

For circulation and readership figures, you're no longer dealing with MRI or ABC figures, you are dealing with real engagement numbers. Pretty compelling stuff.

Ralph Lauren is already thinking like this!

Evolving its traditional fall *New York Times* advertising campaign, Ralph Lauren is the lone sponsor of the *New York Times* iPad app for September 2011, whereby they provided free access to five paid sections, ran live streamed video and created a new type of advert custom-tailored for the format — it's an expandable ad, called a "magalog."

Ralph Lauren integrated live streaming video of its Fashion Week Spring Show and introduced other campaign video into the exclusive ad campaign.

Both the media and the advertiser won here. *The New York Times* had a high-profile event advertiser partnering with them on a completely new digital product, charging a significant premium for the access, and Ralph Lauren once again stood out as a leader both in fashion and now in newly emerging digital media.

This is what we will see in the future: smart digital integration of media assets that create a unique connection between your advertisement's messaging and the media brand's equity and value to a consumer. I am sure fellow merchant

Ralph Lauren's advertisements on the NYT iPad app showed the company is a leader in digital advertising.

John Wanamaker would agree that Ralph Lauren's media buy was very well spent and will soon be a classic, just like the image his brand portrays time and time again.

The Currency of Engagement in a Multiscreen World

Rest assured, TV is still the dominant medium in consumer media today. The 2011-12 television upfront ad buying season went absolutely gangbusters, and analysts predict that even with a double-dip recession, TV advertising will have a mild increase year-on-year.

But in this newly sophisticated and highly expectant digital world, advertisers are seeking more engagement from their TV buys. And TV programmers are also seeking more engagement from viewers as well. So how will this work?

TV and TV advertising will always be a storytelling medium. Nothing matches TV for getting across a story and advertising messages. And now that you can easily and readily watch TV on your laptop, mobile phone or tablet, TV isn't just a set-top

The Future of Media Currency in a Digital World

As the marketing landscape changes, so do the ways we measure success **BY BRENDAN CONDON**

device from Samsung or Sony anymore, it is living and breathing content that you can consume anytime, anywhere.

There are many ways advertisers are partnering with TV networks to enhance their engagement. Obviously, the multiscreen experience is key. And consumers who can, and do, interact simultaneously across multimedia are the prime targets.

This multiscreen experience can be manifested in a number of ways, and I think Bravo TV is doing it really well with "Real-Time Conversations," a virtual water cooler that gives viewers a voice through a live event platform. They pull audiences from anywhere and everywhere into the cultural conversation.

Their first product was Bravo Talk Bubble that takes fans' tweets and Facebook posts and connects them with Bravo celebrities fanned out across multiple screens. They also use Bravo Now, a live-viewing companion app for mobile phones that lets fans vote and talk to the talent, friends and other fans during the show. They can replay favorite clips from the program as well, and share them immediately, with commentary.

Now that is smart multiscreen engagement, but also smart brand engagement for advertisers. And it was developed as a way to engage both consumers and integrate advertisers, so again everyone wins. But planner beware, they better be relevant ads, with interesting creative, appearing on really good content — otherwise these same savvy consumers and media aficionados may also be sharing unflattering commentary about an advertiser's product or service in real time.

Here are some examples of really good executions:

This fall, Discovery Channel's new series *Penn & Teller Tell a Lie* marks the network's first venture into real-time audience engagement. In each episode, the comedic duo will present a set of statements such as, "A butter knife can stop a speeding bullet," or "You can lift a

Penn and Teller's new show will use social media to engage viewers.

car with a head of human hair." Using science, they will prove that their statements are valid. But in every batch, there will be a lie. And Discovery Channel is giving the viewers the chance to decide as the show is progressing what they believe is the false claim.

During the show, viewers will be prompted to launch the "Guess the Lie" experience on the iPhone, iPad or online. Then, fans can vote on whether each claim is true or fictional, as well as change their answers as often as they like. The results will be shared at the end of the episode with different conclusions for both the ET and PT airings. Participants using the app will also get access to bonus videos showing how the pair covered up their lies.

Now, when a show is pitched and before it is greenlighted, programmers are seeking digital elements that will enhance its brand engagement and currency, like the Penn & Teller Guess the Lie app.

Recently we have been seeing more and more smart multiscreen engagements combining TV with mobile. Text voting on talent and award shows from the MTV Video Music Awards to *American Idol* is big business, as networks share in the revenue and mobile carriers advertise with exclusivity. Mobile polling on CNN and Fox News during election coverage will only increase in 2012. Texts and vot-

ing will evolve to a more robust experience in the future, which will give the content more relevance and advertisers more exposure.

And the future of interactive advertising is just beginning. Direct TV, Rovi and Dish Network are all offering measurable interactive ads on their platforms. It is at its nascent stage, but as we have seen with Moore's Law, this digital technology could expand quickly, and cost a lot less to produce, market and distribute.

So What Does The Future Hold?

Advertisers need to partner with the content companies so that both succeed in this new digital world. Advertisers and content creators need to be risk-takers; they need to, as Apple once said in its award-winning ad campaign, "think different." Only then will the currency of engagement evolve to a place where consumers, advertisers and media companies all win.

Going back to Wanamaker and his famous quote, I think it is incumbent on brand advertisers today to part with some of the ad budget that isn't working and try new things. New things that might not work. Or might not work just yet. Or might work really, really well. Take the risk, ride the wave, the water is warm, the sun is out, and we're ready for you. Ⓜ

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Brendan Condon is the CEO of REVShare

THERE ARE MANY WAYS ADVERTISERS ARE PARTNERING WITH TV NETWORKS TO ENHANCE THEIR ENGAGEMENT. OBVIOUSLY, THE MULTISCREEN EXPERIENCE IS KEY. AND CONSUMERS WHO CAN, AND DO, INTERACT SIMULTANEOUSLY ACROSS MULTIMEDIA ARE THE PRIME TARGETS.

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December 7-10, 2011
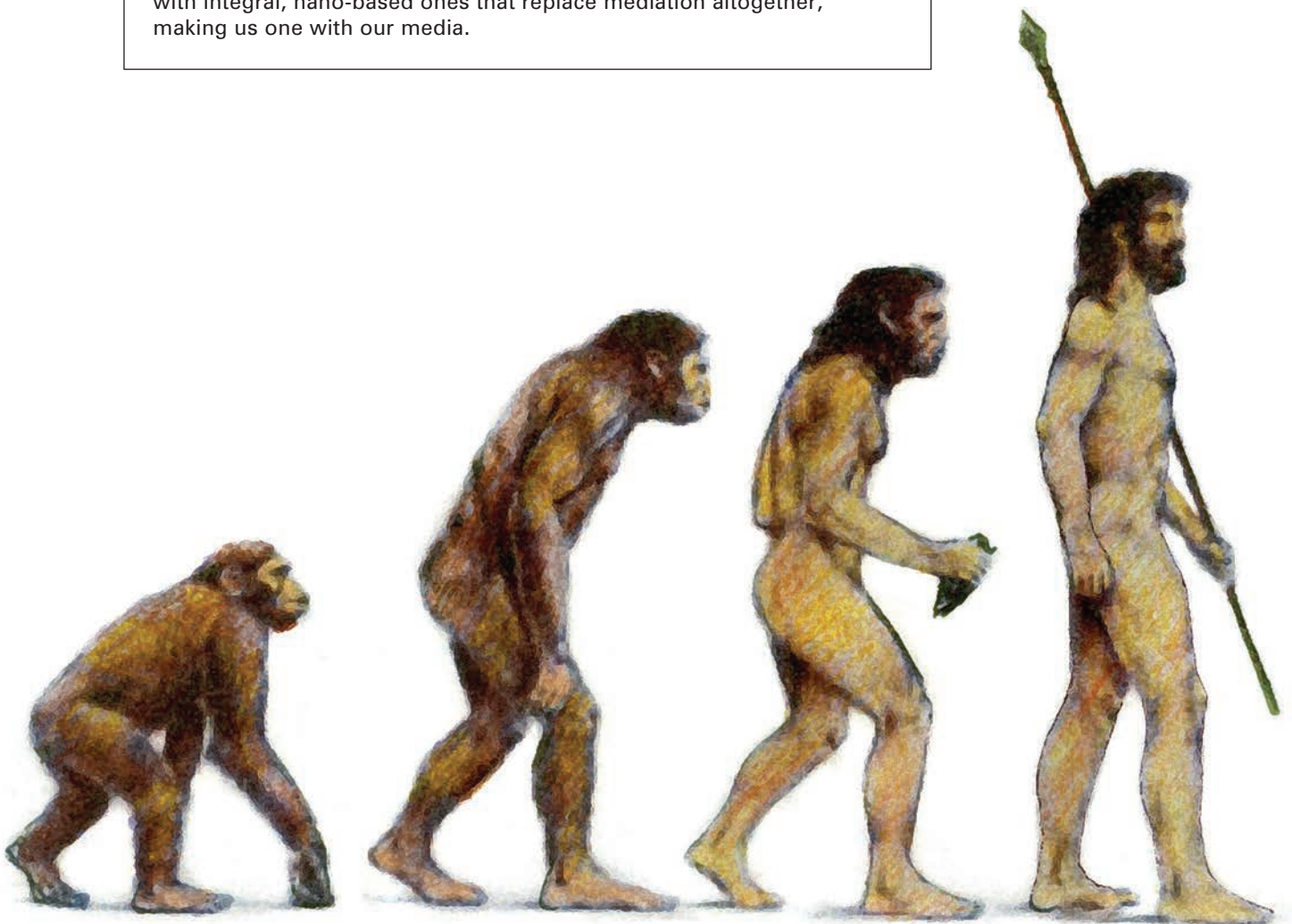St. Regis Deer Valley, Park City, Utah

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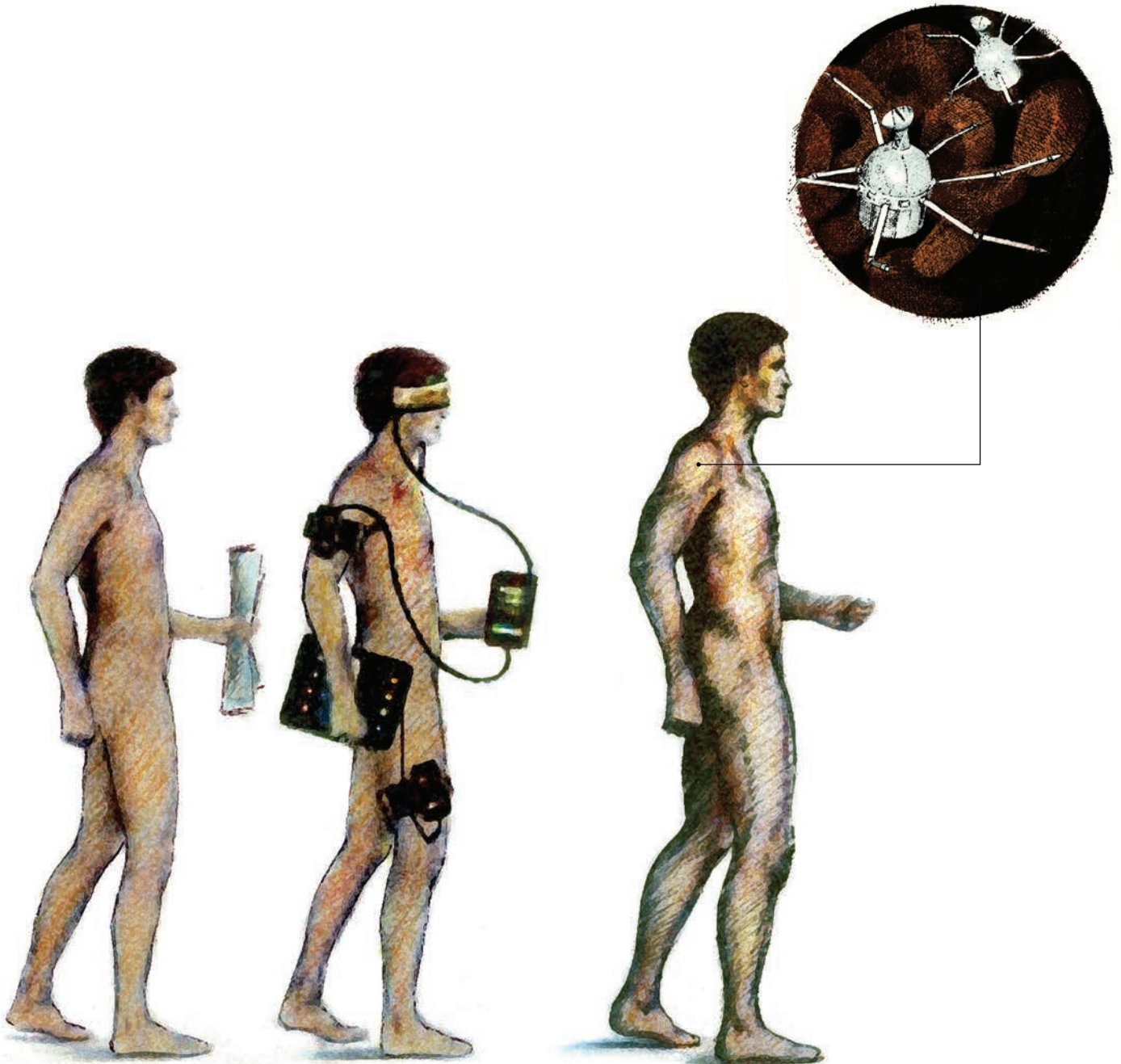
www.mediapost.com/emailinsidersummit

EVOLUTION 2.0 ILUSTRATION BY GARY WATERS

For our first few millions of years, mankind's progression has been purely organic, but the next stages of evolution will come largely from media – initially via physically augmenting technologies, but ultimately with integral, nano-based ones that replace mediation altogether, making us one with our media.

WHY DO YOU THINK WE CALL THEM SMARTPHONES?

Because they're making us smarter. Actually, call them whatever you want, but the reality is that the rapid deployment of powerful, hand-held , Web-connected portable computing devices are augmenting everything about us, even the way we sense the world around us. The 2011 models are augmenting our memories, ability to find things (search), and even find ourselves (GPS), and are increasingly featuring augmented reality applications that can literally annotate the physical world with digital data, giving us the ability to sense things that aren't actually there. Now imagine what they'll be doing by 2050?

84 MILLION
JULY 2011

67 MILLION
JANUARY 2011

SOURCE: COMSCORE MOBILENS
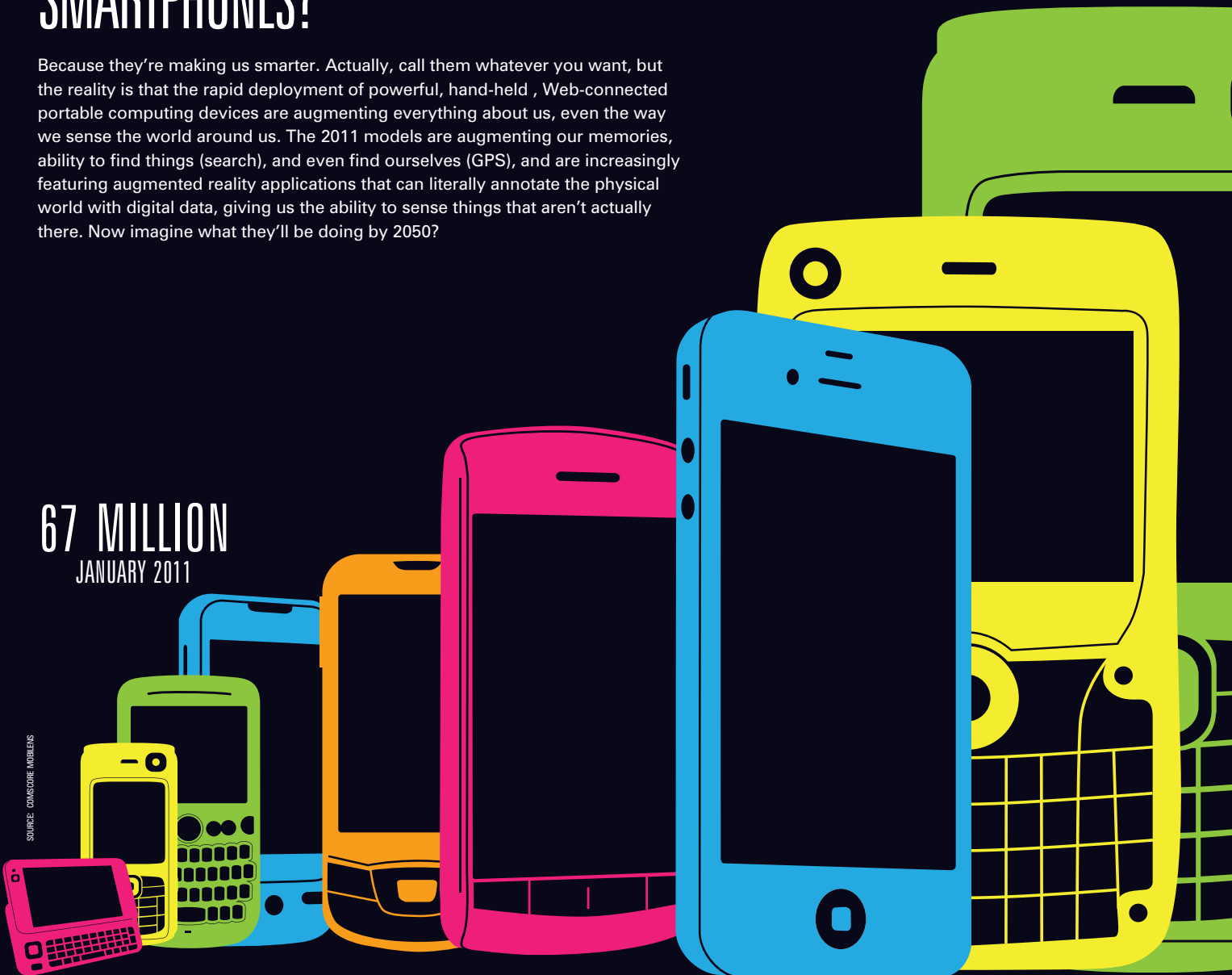
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THE FUTURE OF AD SPENDING

2010-2050

For more than half a century, Interpublic has been defining, estimating and forecasting ad spending in the major media. In this first-of-its-kind far-future forecast, we asked Interpublic's Magna team to see what it might look like over the next half century. Based on its projections you most likely will most likely be reading the 2050 edition of *MEDIA*'s "Future of Media" on a wall, in a tweet, or in some other as-yet-unimagined social media platform, because, well, print will actually be dead.

KEY

- ■ Search/social (PPC)
- ■ Other online (mostly static display)
- ■ Online on-demand video
- ■ Linear video/TV
- ■ Out-of-home
- ■ Audio/radio
- ■ Print
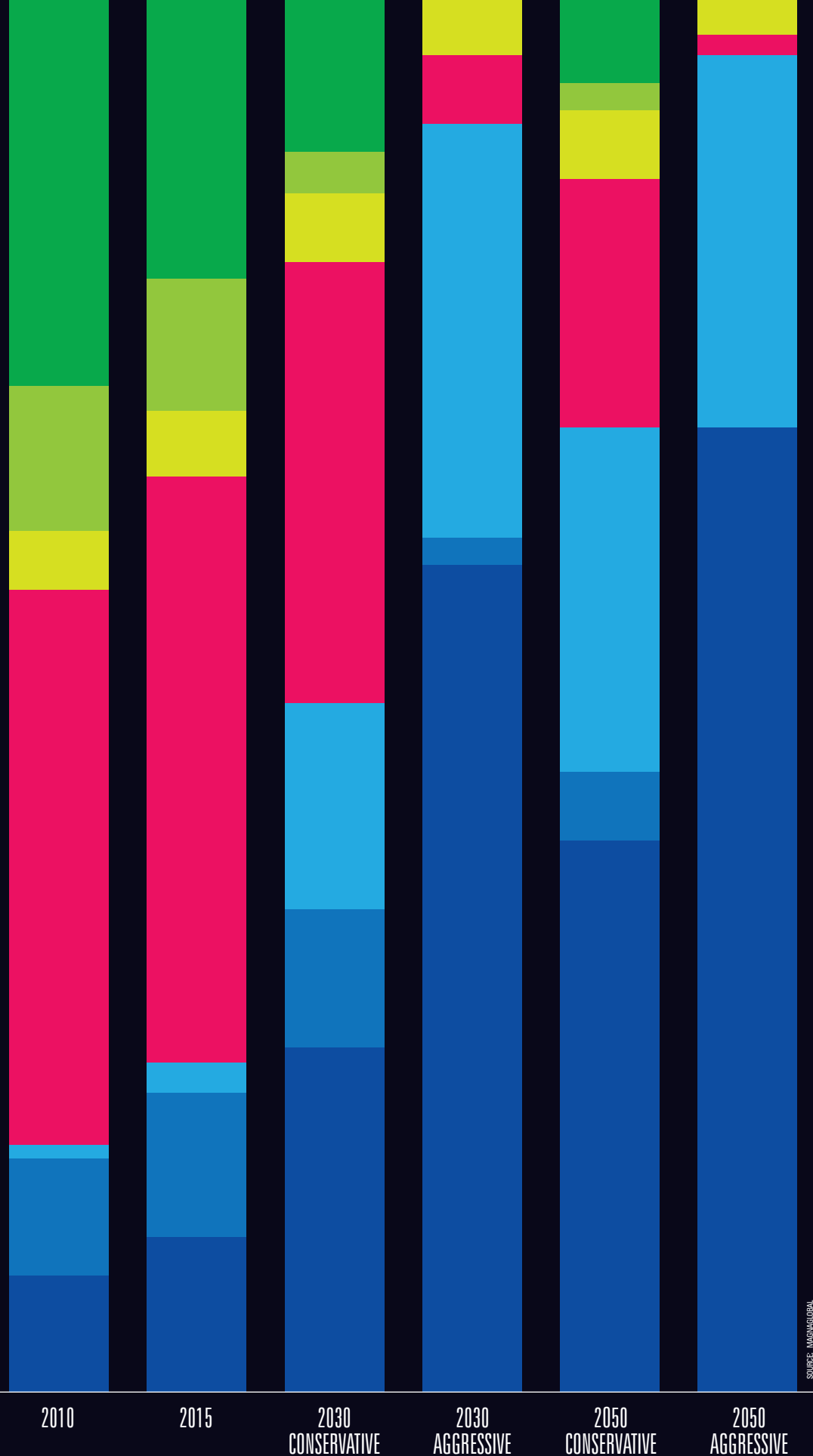
SOURCE: MAGNAGLOBAL

| 2010 | 2015 | 2030 CONSERVATIVE | 2030 AGGRESSIVE | 2050 CONSERVATIVE | 2050 AGGRESSIVE |

MARSHALL MCLUHAN
INTERVIEWED BY
CHARLES DARWIN

Notable media scholar Marshall McLuhan is known for coining the phrase, "the medium is the message," and now, over 30 years since his death, another famous scholar in the field of biology and evolution, Charles Darwin, interviews McLuhan to get his thoughts on the future of media. The following is a mashup of actual quotes and creative liberty as relayed by *MEDIA* guest editor Brian Monahan.

Charles Darwin: Marshall, you're famous for pointing out that media shapes society. You've also defined media as the technological extension of humans. Is the media the human? Or is media simply a tool that humans use?

Marshall McLuhan: Well, media is certainly more than a tool. When you are on the phone or broadcast in the air, you have no body. It is not so much the message as the sender that is sent. And nowadays there are far more ways for everyone to create, share and store electronic representations from self. I'm still not convinced that media has the soul of humans, but I hold out hope because that would mean immortality!

Darwin: I've said that natural selection favors not necessarily the smartest or the strongest of a species, but rather the most adaptable. Would you agree that human adaptability is key to survival given the rate of change of the media that surrounds them?

McLuhan: Absolutely! Forty years before Twitter, I predicted that the future of the book is the blurb. Adaptability to media change is key for the survival of civil society as well as the human species. Forty years ago I also foretold the danger of how, at the speed of light, policies and political parties yield their place to charismatic images.

Darwin: Over the years I have repeatedly pointed out that over the long history of humankind (and animal kind) those who have learned to collaborate and improvise most effectively have prevailed. In your opinion, does the human species have the option to turn away from the fully mediated world we are creating?

McLuhan: No. Individuals can opt out, but the species has no choice. Many years ago, I described reading the morning newspaper as stepping into a warm bath. Now just looking at your mobile phone instantly connects you with your friends, family, colleagues, tastemakers and world actors in near real-time. Mastering these new tools is critical for individual success in the societies shaped by them.

Darwin: You've described a light bulb as a medium without content that creates an environment by its mere presence. Do Facebook and Google also shape our environment by their mere presence?

McLuhan: No doubt about it. Humans learn by experiencing consequences. Now our actions are documented and shared in perpetuity for all who care to see them. The deterrent effect of exposing bad behavior is probably the most powerful aspect of the digital media revolution.

Darwin: I travelled to the ends of the earth to find isolated populations. Forty years ago, you were saying how media was creating a global village. Does that mean social scientists looking to research distinct tribes in today's interconnected world should look for a new job?

McLuhan: Well, the clock is certainly ticking! The Arab Spring literally made me spin in my grave. Here we had some of the allegedly most insular societies use new media with great facility to remake their societies in just a matter of weeks. And from all appearances, it looks like the individuals who have developed new media skills are poised for individual success. Ⓜ

Compiled by Brian Monahan from sources including brainyquote.com and marshallmcluhan.com.

MCLUHAN PHOTO: AP

GUEST EDITOR

Brian Monahan

EVP; Managing Partner, MAGNAGLOBAL Intelligence Practice

What did you learn from editing this magazine?
I don't know if "learning" is the right word, but I was inspired. Certainly, you talk to Tim Kring about how some of the top Hollywood storytellers are thinking. I was inspired to talk to David Pescovitz, talking about, "You ain't seen nothin' yet," as far as the information barrage goes. I was inspired by talking to Howard Rheingold about how we develop new norms of reciprocity when we're working in all these horizontal groups. It just makes you so excited to see what the future actually holds.

What was the most surprising thing about doing it?
It was surprising how few people were comfortable with the idea that media is impacting human evolution. Everyone sort of characterized it as tools. But, Darwin, if you read his work, was really talking about the ability to adapt and adopt the tools as the key to natural selection.

Are you more optimistic or pessimistic now about the future of the human species?
Oh, I am far more optimistic. Now, I feel like the technology, in terms of how it's being applied to storytelling, and commerce, and organizing into tribes, seems to be being driven more by the need to live a fuller life. And

that just makes me more optimistic about what it is to be alive, and to adopt these new tools and, yeah, to lead a fuller life. So, I'm definitely more optimistic about where things are going and humans' ability to adapt to the new conditions. Can I throw it back on you, dude? What do you think?

Fair question. I'm actually pessimistic about the long-term future of the human race, because I think media is hyper-accelerating the evolution of mankind, and that we're going to become the missing link very soon. We're go-

ing to move through this faster than any other species ever did before. We will become something else, because media is accelerating who we are so quickly.
Yeah, well Pescovitz, said, "You know, you can always just close your eyes."

What was the most disappointing thing about doing this?
The most frustrating thing was trying to organize the available data to quantify the arguments. Specifically, we were trying to prove "Monahan's Law": that personal media creation is correlated with personal media consumption. We spent a lot of time talking about that in the issue and how that is impacting and changing us. And the point we wanted to make was: "Hey, don't forget, as people are sort of moving through media, they're creating ripples of content and trails and signals of their own persona, that are then being published to others."

I wish we had somehow talked more about the implications of data on the future of media and marketing. I think we chose a device that was very human-centric, but so much of what seems to be impacting the craft of media and marketing is how people capture and harness data. If I had to do it over again, I would have found a way to touch on that topic somehow. Ⓜ

PHOTO: JJ MACK

AND NOW, THE FUTURE OF *MEDIA* MAGAZINE
Or At Least Our Next Project

Sometimes, things just sort of fall into place, and one of those things came together as we were working on the tail-end of this issue, and it seemed to make such good sense, that we figured we'd use it to tease the next Spring's "Screens" issue of *MEDIA* magazine, and to introduce you to guest editors (our first duo) Adam Broitman and John Swords, the founders, partners and ringleaders of an unbelievably cool, next-generation shop called Circ.us. If you activate the QR code on this page, you can link to a video where you can hear it straight from them. But that's kind of the point: figuring out ways of activating a static medium like this printed magazine to make it come to life on various screens. It's something that Broitman and Swords specialize in at Circ.us, and they've used all sorts of cutting-edge technologies that turn static media into digital screen experiences for some pretty cool brands. When they explained that to us, we couldn't resist asking them if they can do the same thing with this magazine. They agreed, and we've been having fun riffing on ideas for using a variety of technologies that can generate some creative storytelling that otherwise might not have been possible with a printed page. So yes, QR codes are an obvious one, but what else is out there?

Broitman

Swords

In the end, we decided the idea was too big to contain just among the Circ.us and *MEDIA* staffs, so why not open it to the entire industry — other agencies, independent creators, students, you name it — to see what technologies and stories they could come up with to turn *MEDIA* into screens. So if you haven't figured it out by now, this page, the QR code and what it links to, are a call for entries to submit ideas and executions to own a page (or several) in the Spring issue of *MEDIA* magazine. Guest editors Broitman and Swords will be the judges, with some consultation with the *MEDIA* team, and a few of our friends.

Why should you do it? Aside from the fact that we asked, and I even threw in a "pretty please?" Well for the same reason any creative mind would: to create something brilliant, bring it to life, expose it to your friends, peers, and hopefully, a few prospective clients. Or as Broitman suggests, "to show off your creativity."

The page this QR code links to will initially show a video explaining that in more of his and Swords' own words, but over time it will morph to showcase some of the ideas we're working on and submissions we've received. Because if there's one thing we always want to prove with this magazine, it's that pages can contain ideas that are not bound by print. **JOE MANDESE, EDITOR**

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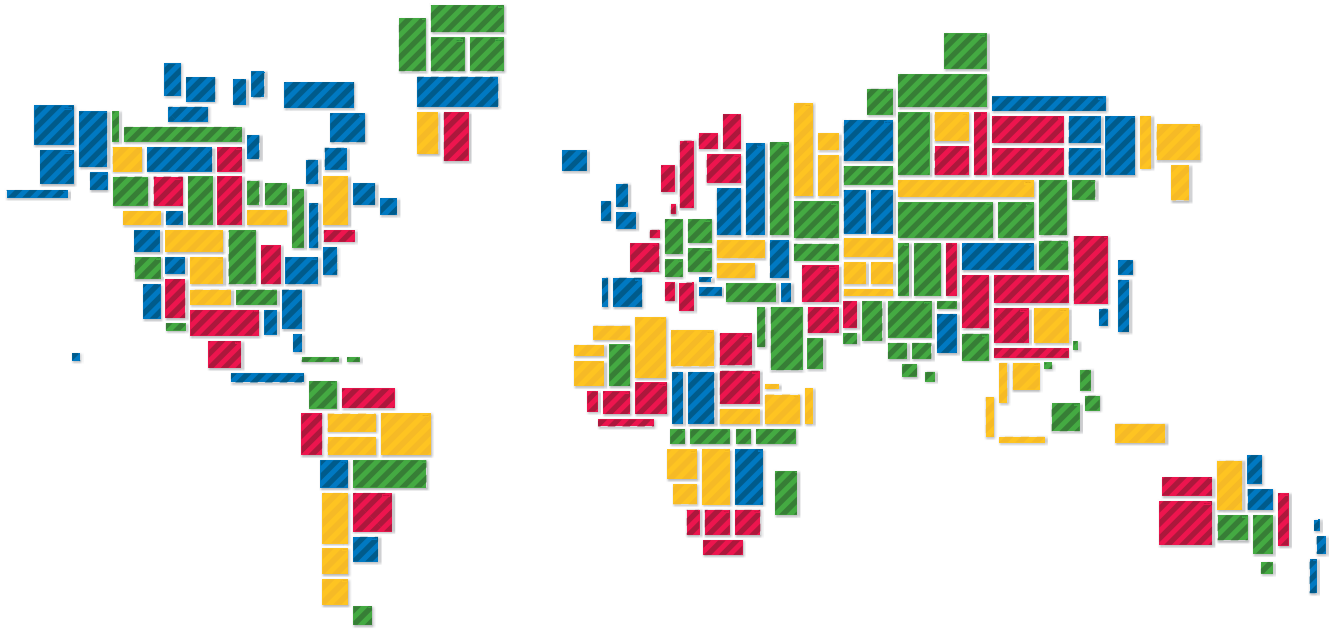
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