Creativity.

These days, there’s hardly a mission statement that doesn’t herald it, or a CEO who doesn’t laud it. And yet despite all of the attention that business creativity has won over the past few years, maddeningly little is known about day-to-day innovation in the workplace. Where do breakthrough ideas come from? What kind of work environment allows them to flourish? What can leaders do to sustain the stimulants to creativity -- and break through the barriers?

Teresa Amabile has been grappling with those questions for nearly 30 years. Amabile, who heads the Entrepreneurial Management Unit at Harvard Business School and is the only tenured professor at a top B-school to devote her entire research program to the study of creativity, is one of the country’s foremost explorers of business innovation.

Eight years ago, Amabile took her research to a daring new level. Working with a team of PhDs, graduate students, and managers from various companies, she collected nearly 12,000 daily journal entries from 238 people working on creative projects in seven companies in the consumer products, high-tech, and chemical industries. She didn’t tell the study participants that she was focusing on creativity. She simply asked them, in a daily email, about their work and their work environment as they experienced
it that day. She then coded the emails for creativity by looking for moments when people struggled with a problem or came up with a new idea.

“The diary study was designed to look at creativity in the wild,” she says. “We wanted to crawl inside people’s heads and understand the features of their work environment as well as the experiences and thought processes that lead to creative breakthroughs.”

Amabile and her team are still combing through the results. But this groundbreaking study is already overturning some long-held beliefs about innovation in the workplace. In an interview with *Fast Company*, she busted six cherished myths about creativity. (If you want to quash creativity in your organization, just continue to embrace them.) Here they are, in her own words.

1. **CREATIVITY COMES FROM CREATIVE TYPES**
When I give talks to managers, I often start by asking, Where in your organization do you most want creativity? Typically, they’ll say R&D, marketing, and advertising. When I ask, Where do you not want creativity? someone will inevitably answer, “accounting.” That always gets a laugh because of the negative connotations of creative accounting. But there’s this common perception among managers that some people are creative, and most aren’t. That’s just not true. As a leader, you don’t want to ghettoize creativity; you want everyone in your organization producing novel and useful ideas, including your financial people. Over the past couple of decades, there have been innovations in financial accounting that are extremely profound and entirely ethical, such as activity-based costing.

The fact is, almost all of the research in this field shows that anyone with normal intelligence is capable of doing some degree of creative work. Creativity depends on a number of things: experience, including knowledge and technical skills; talent; an ability to think in new ways; and the capacity to push through uncreative dry spells. Intrinsic motivation -- people who are turned on by their work often work creatively -- is especially critical. Over the past five years, organizations have paid more attention to creativity and innovation than at any other time in my career. But I believe most people aren’t anywhere near to realizing
their creative potential, in part because they’re laboring in environments that impede intrinsic motivation. The anecdotal evidence suggests many companies still have a long way to go to remove the barriers to creativity.

2. MONEY IS A CREATIVITY MOTIVATOR
The experimental research that has been done on creativity suggests that money isn’t everything. In the diary study, we asked people, “To what extent were you motivated by rewards today?” Quite often they’d say that the question isn’t relevant -- that they don’t think about pay on a day-to-day basis. And the handful of people who were spending a lot of time wondering about their bonuses were doing very little creative thinking.

Bonuses and pay-for-performance plans can even be problematic when people believe that every move they make is going to affect their compensation. In those situations, people tend to get risk averse. Of course, people need to feel that they’re being compensated fairly. But our research shows that people put far more value on a work environment where creativity is supported, valued, and recognized. People want the opportunity to deeply engage in their work and make real progress. So it’s critical for leaders to match people to projects not only on the basis of their experience but also in terms of where their interests lie. People are most creative when they care about their work and they’re stretching their skills. If the challenge is far beyond their skill level, they tend to get frustrated; if it’s far below their skill level, they tend to get bored. Leaders need to strike the right balance.

3. TIME PRESSURE FUELS CREATIVITY
In our diary study, people often thought they were most creative when they were working under severe deadline pressure. But the 12,000 aggregate days that we studied showed just the opposite: People were the least creative when they were fighting the clock. In fact, we found a kind of time-pressure hangover -- when people were working under great pressure, their creativity went down not only on that day but the next two days as well. Time pressure stifles creativity because people can’t deeply engage with the problem. Creativity requires an incubation period; people need time to soak in a problem and let the ideas bubble up.
In fact, it’s not so much the deadline that’s the problem; it’s the
distractions that rob people of the time to make that creative
breakthrough. People can certainly be creative when they’re
under the gun, but only when they’re able to focus on the work.
They must be protected from distractions, and they must know
that the work is important and that everyone is committed to it. In
too many organizations, people don’t understand the reason for
the urgency, other than the fact that somebody somewhere
needs it done today.

4. FEAR FORCES BREAKTHROUGHS
There’s this widespread notion that fear and sadness somehow
spur creativity. There’s even some psychological literature
suggesting that the incidence of depression is higher in creative
writers and artists -- the de-pressed geniuses who are incredibly
original in their thinking. But we don’t see it in the population that
we studied.

We coded all 12,000 journal entries for the degree of fear, anxiety,
sadness, anger, joy, and love that people were experiencing on a
given day. And we found that creativity is positively associated
with joy and love and negatively associated with anger, fear, and
anxiety. The entries show that people are happiest when they
come up with a creative idea, but they’re more likely to have a
breakthrough if they were happy the day before. There’s a kind of
virtuous cycle. When people are excited about their work, there’s
a better chance that they’ll make a cognitive association that
incubates overnight and shows up as a creative idea the next day.
One day’s happiness often predicts the next day’s creativity.

5. COMPETITION BEATS COLLABORATION
There’s a widespread belief, particularly in the finance and high-
technology industries, that internal competition fosters innovation. In
our surveys, we found that creativity takes a hit when people in a
work group compete instead of collaborate. The most creative
teams are those that have the confidence to share and debate
ideas. But when people compete for recognition, they stop
sharing information. And that’s destructive because nobody in an
organization has all of the information required to put all the
pieces of the puzzle together.
A STREAMLINED ORGANIZATION IS A CREATIVE ORGANIZATION

Maybe it's only the public-relations departments that believe downsizing and restructuring actually foster creativity. Unfortunately, I've seen too many examples of this kind of spin. One of my favorites is a 1994 letter to shareholders from a major U.S. software company: "A downsizing such as this one is always difficult for employees, but out of tough times can come strength, creativity, and teamwork."

Of course, the opposite is true: Creativity suffers greatly during a downsizing. But it’s even worse than many of us realized. We studied a 6,000-person division in a global electronics company during the entire course of a 25% downsizing, which took an incredibly agonizing 18 months. Every single one of the stimulants to creativity in the work environment went down significantly. Anticipation of the downsizing was even worse than the downsizing itself -- people’s fear of the unknown led them to basically disengage from the work. More troubling was the fact that even five months after the downsizing, creativity was still down significantly.

Unfortunately, downsizing will remain a fact of life, which means that leaders need to focus on the things that get hit. Communication and collaboration decline significantly. So too does people’s sense of freedom and autonomy. Leaders will have to work hard and fast to stabilize the work environment so ideas can flourish.

Taken together, these operating principles for fostering creativity in the workplace might lead you to think that I'm advocating a soft management style. Not true. I'm pushing for a smart management style. My 30 years of research and these 12,000 journal entries suggest that when people are doing work that they love and they’re allowed to deeply engage in it -- and when the work itself is valued and recognized -- then creativity will flourish. Even in tough times.

A version of this article appeared in the December 2004 issue of FAST COMPANY magazine.
I think that creativity needs a wild imagination.
Weird that this article is linked to the fabulous story of the fishnet sculptures. That artist’s accomplishment was fueled by her passion to explore and create, not money. That kind of thinking is outmoded and part of what got us into this mess in the first place.

To be creative, I tell people, "LEARN TO LEARN." Creativity lies just a step beyond where you stopped learning.

A great article. You said, "people are most creative when they care about their work and they're stretching their skills. If the challenge is far beyond their skill level, they tend to get frustrated; if it's far below their skill level, they tend to get bored." The problem is that we do not really know how much skills we have until we confront real difficulties. My take is that taking on challenges beyond our (known) skills creates the challenge that is required for creativity. We have inate capacity to tackle challenges that ordinarily we would be too scared to take on had we known how difficult they would be. Albert Hirschman in his seminal book "Development Projects Observed (1967) stated that very often people take on challenges underestimating the difficulty of the task ahead but in the same vein they underestimate their capacity to tackle the problem when they are truly confronted with it.

Will like to know your opinion about standards and creativity. How do standards impact productivity? That question got me here. Robinson Akiri
A great article. From my experience, innovation is not something that is fostered very successfully amongst employees in China. This gives us Western countries a little breathing room only if we can continue to provide the right environments that cultivate innovation as mentioned in the article.

50 Homemade Gift Ideas

Excellent material here. There are two very difficult barriers to overcome. 1---Getting management to accept new ideas that are not their own. It’s cliche, but management ego is often the stopping point of new ideas. 2---In line with number 1, getting people to express creative ideas without fear. If your people think every new thought starts a round of the "Devil's Advocate" game, they won’t want to speak up even when they see problems and have simple solutions.

Get these these two under control and you’ve got a chance. Otherwise, forget it. Don’t even consider using a consultant for this stuff until management is ready to hear the painful truth: You’re Not Perfect.

Chris Reich, Sales, Marketing and Business Consultant
www.TeachU.com

I'm a designer and Creative Catalyst for a Fortune 100 company and would enjoy hearing more of your creative thoughts, quotes, process...mental floss. You can follow me to spread quality creative conversation.
CHRISTOPHER CHAPMAN > BILL BREEN 4 YEARS AGO

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http://twitter.com/ChapmanCata...

GAINTWEE GAINT > BILL BREEN 4 YEARS AGO

Most of the fluid solving code is straight from Jos Stam’s paper. I tried to wrap it up in an easy to use API to provide methods for adding & getting forces and color at any position. Also many thanks to Maa (www.lagraine.com) for some serious optimizations and contributing some ace features. Hopefully next version will be openCL ;)

Regards
must university

WILY WALNUT > BILL BREEN 5 YEARS AGO

Thanks for the great article and the research!

Myth#1 Creativity Comes From Creative Types
Human beings have evolved an intrinsic capacity for creative thinking. It just needs tapping in the right way. Deciding that you are creative and giving yourself permission to be creative are half the battle. Get that out of the way and you off to the races!
Myth#2 Money is a Creativity Motivator
I think the definition of "creativity" is called into question here. Creativity is a broad term for a range of activities. For many people, creativity is almost synonymous with productivity. If I’m getting things accomplished, then I feel like I’m being creative, because I’ve "created" some work that wasn’t there or hadn’t been done yet. On a practical level, money does act as a spur to action, which can initiate a sequence of events that lead to creative thinking taking place. Motivation for creativity is multi-faceted and the desire for more money may be one facet of it for some people (I agree that many people have little interest beyond comfort needs) -- it just doesn’t reside as high up the values list as many of us have come to believe. Creativity ticks the boxes on a lot of values.

Myth#3 Time Pressure Fuels Creativity
I agree with your second paragraph that given a "zone" in which to work undisturbed, a hot house climate of creativity can be generated. Without that focus funnel, and with too many other distractions, deadline pressure turns most minds to mush.

Myth#4 Fear Forces Breakthroughs
I agree, I feel most creative when I am happy and "full of myself". You can feel your energy is full and wanting to radiate out, to express, to create... That said, if you are basically a happy, healthy, easy going kind of person, or even if you've simply made the decision that you are a creative person and choose to live creatively, you can turn any emotion into a stimulus for your creativity.

Yes, creativity at its root is a joyous act but that joy is often tinged and tinted by other colors. You can take a joyous revenge in writing the downfall of a character in your novel who is based upon your real life nemesis, for example. You can take a vicious delight in plonking your rage upon a canvas in a carnage of color. You can feel a kind of joyous relief in sharing your grief in a melody or poem.
At the very least, creativity of a sorts can be engaged to help you transition more quickly from negative emotions. Expressing your feelings in print, paint, song, dance, or the way you sweep the front path can channel your negativity outward and hasten your return to a more optimum state of mind.

Whether you can use creativity to express and release fear is a tricky one, dependent upon the character of the person in question. Many of us freeze and lock up so tight that there’s nothing but darkness and terror. A few experience the fight response, and warfare has always engaged creativity in its lethal pursuits. And others engage great lateral thinking and lateral action in fleeing from fear. But for me, I no likee the fear! Fear is the great inhibitor.

Myth#5 Competition Beats Collaboration
The 'top that' mentality can fuel creative thinking. But collaboration exponentially multiplies the effect (and frees those otherwise turned-off by competing against the alpha voices). At the fundamental level, you are multiplying the possible computing power with the extra brains that you add to the work. Getting people fully engaged in a truly collaborative effort is the art. You need to create an environment where all voices can be heard (at times!) so that you don’t just create an environment where the alpha people assert their ideas as the best by the force of their will or charisma alone. At a core level, creativity is most free flowing when it is engaged in a work that benefits the most people or serves a high ideal or group vision.

Myth#6 A Streamlined Organization Is a Creative Organization
It would seem that today organizations are more in danger of outmoded systems and entrenched ways of doing things than from the over-abundance of potential computing power of their people assets. As mentioned in #3, the clutter is in what gets in the way of people performing and thinking at their best. That’s what needs streamlining.

There is a heirarchy of creativity. At the top are thoughts/actions of a truly inspired and innovative nature. They shake the ground. Then there are the more common and yet still impressive thoughts/actions that make small
improvements upon existing ideas. Some creativity is just a sequence of actions that take advantage of opportunities already present that others may or may not be already pursuing. And there is the creativity of expressing the best of oneself through artforms, hobbies or daily living. We probably need to invent or clarify some new definitions for the different interpretations for creativity.

Warmest Regards to All,
Wily

Michael Plishka > Bill Breen 5 years ago

Excellent Article! Should be copied and placed on your bulletin boards. Okay, maybe not. At least sit down with your team and leaders and discuss this. You won't be sorry.

Jay Thomas-Burrows > Bill Breen 6 years ago

A great article. From my experience, innovation is not something that is fostered very successfully amongst employees in China. This gives us Western countries a little breathing room only if we can continue to provide the right environments that cultivate innovation as mentioned in the article.

Jennifer Hofmann > Bill Breen 6 years ago

Outstanding article - and timely. The US economy will flourish if this research is put to good use.
Good article, and very relevant to me at this time. Will be reviewing it again definitely in the near future...