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# Connect The Dots

Mark Rosewater  
 Making Magic

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So, I was given the task of coming up with two favorite columns of the year. I chose the first one because it was what I thought was my best design column of the year. Today's is my personal favorite. This doesn't mean it was the best just the one that I liked the best.

To refresh your memory, here were my five-pointers from 2007 (as graded in my [Three Hundred and Counting](#) column):

- [Nights of the Round Table](#)
- [Fatty Fatty. Two By Four](#)
- [Connect the Dots](#)
- [Melvin and Vorthos](#)
- [Design Language](#)
- [State of Design 2007](#)
- [Topical Blend #3: Sessions](#)

Last week I selected [Design Language](#). The candidates for this week's column were: [Nights of the Round Table](#), [Connect the Dots](#), [Melvin and Vorthos](#), and [Topical Blend #3: Sessions](#). And the winner is... (drum roll—as I pointed out last week, the drum roll is kind of superfluous with the title listed above, but I'm a sucker for drum rolls, and hey, what's the fun of writing your own column if you can't use superfluous drum rolls?) [Connect the Dots](#).

The reason I chose this column was that it was about a topic that I feel very connected to: creativity. This was a column I wanted to write for years and 2007 was finally the year I got to it. I hope it resonates as much with you as it did with me.

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I believe that every person has a topic of passion. That is, for each person there is some subject that fascinates them to such a degree that they feel compelled to continually learn more about it. With knowledge, this topic of passion becomes a recurring theme that the person keeps being drawn to. Eventually, the person begins looking inward to see how this topic interacts with their own life. Finally, the person comes to find a way to put their own stamp on the topic to demonstrate how it has affected them. Today's column is about my topic of passion – something that I believe is fundamental for good game design. In fact, I believe it is fundamental for art of any kind. What is my topic of passion? Creativity.



Here's what I have in store for you today. I'm going to talk a bit about how creativity came to be my topic of passion. Then I am going to walk you through some of the basics about it. Next I will explain my theory behind what I believe creativity is. Then I will give all of you some tips on how I believe anyone can become more creative. Sound good? Then let's get this column started.

## Thought For Food

All my life I've been very creative. It's come very natural to me. From as young as I can remember, I've had the ability to think of things in ways that most other people don't. As a child I didn't really think about it much. It was just the way I was. But as I got older and started realizing that the way I processed things was different, I became interested in learning why. Why did I seem to approach problems differently from most people? Why did certain leaps of logic come faster to me? Why did my train of thought tend to confuse other people? Why did my brain function the way it did? In short, why was I the way I was?

I believe the quest to understand oneself is a normal part of growing up. I was a creative guy, so I wanted to better understand what made creativity tick. Little did I know the hornet's nest I was stepping into. You see, creativity is one of these topics that has enthralled many over the years, but it is not exactly something that has ever been figured out. In fact, I think the exact opposite has happened. The more people that look into creativity, the more diverse the answers about it seem to become.

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The topic has been approached from just about every angle you can imagine. Psychologists, chemists, artists, businessmen, philosophers... the list goes on and on. Everyone in the conversation seems to feel that it is an important quality, but exactly what causes it, or even what exactly it is, is in constant debate. There are a few general agreements, but I'll get to those in a moment.

## Making Up My Mind

Before I dive headlong into the topic, I'd like to explain how creativity went from a curiosity to my topic of passion. I've talked in my column before (most notably in my column [Life Lessons, Part I](#)) that I had a bit of a rough childhood stemming mostly from the fact that I was different and quite headstrong. (None of this has changed; I've just learned to surround myself with people who see it as a positive.) One of the things that most set me apart in my youth was the fact that I very clearly functioned differently from most of the other kids.

While I have always seen my creativity as a blessing, it did have a side effect when I was young. It made me appear weird to the other kids. It was clear that I just thought about things differently. And as a kid, being different is not exactly the way to enhance one's social standing. I never minded being different (actually I quite enjoyed it), but being shunned is never a pleasant experience, especially in the free-for-all, Lord of the Flies existence of childhood.



I think a big part of my desire to understand creativity, and in turn my own creativity, was my quest to understand why I thought the way I did. Ultimately, it was my understanding of my own creativity that has led me to having a better understanding of creativity in general. After reading numerous books by various experts I realized that each person that studied creativity approached it from their own vantage point. While this did lead to a few universal truths (once again, more on those in a minute), mostly it created lots of contradictions.

That's when I got the idea to jump on the bandwagon. What if I investigated creativity from my own vantage point? What if I figured out how and why I was creative and used that insight into understanding creativity in a larger sense?

## Why, Oh Why

I began with a simple question. People constantly told me I was creative. What did they mean by it? What was I doing that was evoking this response? Upon further study I found that people used the term "creative" when I did one of several things:

1. **I had an original idea.** That is, I thought of something that others haven't heard before.
2. **I was imaginative.** That is, I came up with a concept that, while not new, was used in an unfamiliar way.
3. **I was good at problem solving.** That is, I was quick to find unique solutions to problems.
4. **I excelled at finding many ways to make use of a new idea.** That is, I found more avenues than normal to exploit a new concept.

Once I examined these four categories, I realized that they had a lot of common ground. In each case, I made use of an idea in a way that did not seem obvious to outside observers. Something about the idea was new. In definition #1, the idea was new to the observer. In definition #2, the execution of the idea was new. In definition #3, the application of the idea was new. In definition #4, the volume of the idea was new.

Okay, I was creative because I had the ability to generate and execute upon new ideas with regularity. This led to the next big question. Why? Why was I able to do this?

## Covering The Basics

This is the point where I dived back into the research. I wanted to have a firm grasp on what others thought so that I could come to my own conclusions. There were numerous theories each hypothesizing on what attributes lead to creativity. After a lot of reading, I came to the conclusion that while there was a lot of disagreement, there also existed a few points that the majority of the researchers agreed upon. Here they are:

**#1 – Creativity Is Tied to Intelligence** – The connection here is one way. Not all intelligent people are creative, but the vast majority of subjects that exhibited strong creative tendencies also exhibited high intelligence.

**#2 – Creativity Is Not Conscious to its User** – What this means is that creative people don't tend to be conscious about their creative process. When you ask an artist how he was able to express an idea in such a manner, he or she usually replies with an answer that approximates "it just felt right." For Jungian fans out there, this means that the



most creative people tend to lead more towards being intuitive rather than speculative (for non-Jungian fans this means they are more likely to follow their gut than their head).

**#3 – Creativity Tends to Have Peaks and Valleys** – Creativity doesn't stay at a constant level. Creative people tend to go through cycles where their creativity rises and falls. Research shows that while creative people have some ability to influence this, the rising and falling is mostly out of their conscious control.

**#4 – Creativity Is Somehow Connected to Mental State** – Creative people tend to be most creative in certain emotional states. The most interesting part of this is that different people are more creative in different emotional states. For example, some artists work best when unhappy while others require a sense of peace. The common link is that for each individual certain states yield the most creative output.

**#5 – Creativity Can Be Strengthened through Use** – The best indicator of strength of creativity is how much the creative person uses it. In short, there is some kind of "muscle" behind it that tends to improve with use.

This research did two important things. One, I felt connected to it. Each of the five conclusions clearly resonated with me. And two, it gave me a jumping off point to learn how my creativity worked.

## Looking Within

I don't know if any of you have ever tried to study how you think, but if you haven't, let me fill you in. It's very hard. Why? Because it's all you know. You've never thought any way other than how you think so it feels like the only way to think. I spent some times trying to understand how others think, but once again, with no frame of reference it was hard to latch onto. Finally, I figured out way to get a toehold in. I thought of times where how I thought confused someone else.

The most common example is this: I tend to talk stream of consciousness. Basically, I talk about what I'm thinking as I think it. Often when I'm doing this I confuse the person that I'm talking to. Why? Because I seem to jump around topics at random. I've been told that this is very disconcerting and makes following the conversation quite hard. Often when this happens, I'll back up and walk my conversation mate through the connections in my head that got me from A to B. When I walk through the connections slowly they usually follow my train of thought, but they always say that they never would have had any ability to follow it had I not walked them through it. At normal speed, with some of the connections un verbalized, it is literally impossible to understand my train of thought.

Another common problem I've encountered is when I get into an argument with someone and I realize halfway through the argument that we're not arguing about the same thing. I've interpreted something that's completely different from what they've intended. The interesting thing is that often the miscommunication stems from each of us hearing the same sentence. I seem to have a habit of finding the less obvious interpretation.

This led to another quirky problem I had in high school. I've always been very verbal. I'm very good with words. I'm a huge fan of metaphor. Yet I had a big problem when studying the SATs (for non-American readers, this is a standardized test that's required to get into college/university). One part of the verbal portion of the test uses analogies. That is, A is to B as C is to D. (Puppy is to dog as kitten is to cat.) My problem wasn't that I couldn't find the analogy. No, my problem was that I found a connection between each answer and the word in question. The test for me wasn't finding the connection but figuring out which connection the makers of the test intended for me to find.



As I studied these different interactions, I started getting a sense of how I thought differently. And from this I began to get a sense of why I was creative. Which, of course, leads me to my major topic of the day: what I believe creativity is.

## The Missing Link

Let me begin this section by stressing that what follows is my hypothesis on creativity based on my own creativity. It is quite possible that there are multiple types of creativity and that I am expanding upon just my own type. Nonetheless I am going to take the bold (and yes, not so humble) assumption that there is one basic underlying principle to creativity. It's my theory and I'm sticking to it.

I believe that when you boil everything down to its essence, creativity stems from the following trait: the ability to see connections between things that others do not. Yes, all my years of study have led me to believe that creativity boils down to one basic skill. Here's how my theory works. The human brain is excellent at absorbing information, but people tend to compartmentalize that information. That is, when they learn about thing A it goes into mental box A and when they learn about thing B it goes in mental box B. But A and B never commingle, because the brain sees them as distinct entities.

Creativity, I believe, is the ability to mingle box A with box B. It is the skill of seeing how box A can mean something to box B or vice versa. In my theory, creativity is not creating new ideas out of whole cloth. No, I believe creativity is a way to optimize thinking, allowing you to create new ideas out of combinations of old ones.

Note that this can be used in many different ways. Maybe it means seeing how two things combine to make something new (like chocolate and peanut butter). Maybe it's taking the lessons learned in one field and applying them in another (more on this later). Maybe it's bringing the vantage point of one thing to another, allowing you to see it in a new light. Regardless of how the link is used, it stems from the person seeing the link in the first place.

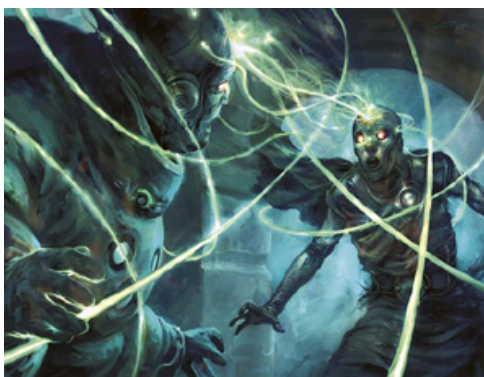
What about what I call "blue sky thinking" – coming up with something no one has ever come up with before? My answer to this is that I don't believe most "new" ideas are truly new. The human race has been around for a long time. Most concepts have been stumbled upon. (In much the same way, the writer in me believes most story archetypes have been hit upon.) I believe most "new" ideas are finding interesting ways to combine old ones. Yes, truly original thoughts happen, but I think they are very rare and in my mind a special exception to my creativity theory.

The biggest value of my theory is twofold. First, once you have an idea of what creativity is, it makes it easier to find ways to help improve it. For example, once I came up with my theory, I've tried the following exercise as a way to work out my "creativity muscle." Pick two items at random. Then find a connection between them. This leads to the second perk of this theory. If it is true, it means, I believe, that it is a skill that can be worked and improved upon – that anyone can be more creative if they set their mind to it. Yes, some people's brains have a natural affinity for it and thus it comes easier to them, but I think that anyone can learn this skill and with work can improve upon it. Why do I believe this? Because having come to this hypothesis, I have tried hard to work on this skill and I believe that I have gotten more creative over time because of it.

This, of course, leads to the question, how can seeing connections between things be a skill? Don't you either have the ability to do it or not? I believe everyone has the ability to do it (and yes, some come at it more advanced than others). The reason many don't see connections isn't because they can't but because they never bothered to look.

I have talked many times in my column (to the point of it becoming almost a running joke along with my stint as a "Roseanne" staff writer) that my favorite book is a book on creativity named *A Whack on the Side of the Head* by Roger von Oech, PhD. The main contention of *Whack* is that people keep themselves from being creative because of ten mental locks – that is, they stop themselves from being creative by how they think. This ties exactly into my point, which is that people keep themselves from being creative by not taking the time to learn when and how to look for these connections.

I plan to take the rest of today's column to walk you through things you can do to be more creative. Which leads to...



## 10 Things You Can Do To Be More Creative

**#10 – Get a Copy of *A Whack on the Side of the Head* and Read It** – Seriously, if the topic of becoming more creative is remotely interesting to you, you have to read this book. (Note that it has a follow-up called *A Kick in the Seat of the Pants*, which while not quite as good is still well worth reading.) I've read a great number of books on creativity and, in my opinion, no other book holds a candle to "Whack" on practical advice to becoming more creative. It's well written, it's entertaining, and it has great examples crafted through years of the author's business creativity seminars. I have zero investment in the book selling. I praise it because few books have had an impact on me like *Whack* has. Trust me, read it.

**#9 – Play Games** – Okay, this one's a freebie (for my regular audience at least). Games are great because they force you into places you'd never naturally go. Games push you out of your comfort zone. The best games (of which **Magic** is particularly good) force you to reevaluate things you might have previously taken for granted. They make you evaluate things from new vantage points and force you to problem solve. In short, games test many of the skills needed for thinking more creatively.

**#8 – Do Puzzles** – Many people tend to lump games and puzzles together but they are, in fact, fundamentally different. Games push their players out in different directions, encouraging them to think differently from one another. Puzzles, on the other hand, push all their users in the same direction. Puzzles (the vast majority of the time) have a single answer. Each person solving the puzzle is striving to end up in the same place with the same answer. The reason puzzles are good for creativity is that by their very nature they tend to force people to break through mental logjams. The best puzzles have answers that aren't obvious but rather have to be reached by reevaluating basic precepts one has about the puzzle.



**#7 – Read (Especially Non-Fiction)** – In order to see connections between disparate items, you have to first learn about the individual items. Many breakthroughs in science, for instance, have come when scientists moves from one study to another. They then enter the new study with the precepts of the old one. That is, they approach their new problems with the mindset of their old problems. This allows them to see connections that scientists more enveloped by the current groupthink are unable to see. Want to have a new insight into a problem you're having? Learn about how someone else solved a completely different problem. This will allow you to approach your problem from a new vantage point.

**#6 – Talk to Others** – This is an extension of the last item. With knowledge comes the ability to connect between a larger thinking pool. When I say talk to others, I'm not talking about people you normally talk to. Take the time to talk to people you normally wouldn't. The people you associate with are likely the most similar to yourself. If you want to get a different perspective take the time to talk to people that don't run in your circles. And when you talk

to them, don't be afraid to ask questions. Most people enjoy talking about themselves and things they know. Finally, make sure to take time to talk to children. No one talks as frankly as children do, and their vantage point is radically different from adults. Children have a very pure sense of the world and they often will point out things that adults have learned to tune out.

**#5 – Examine the Known** – A great exercise in understanding how things interrelate is to try and examine how a known quantity came to be. For example, why are the fork, spoon and knife the basic three pieces of silverware? What functions do they have that led to this dominance? How did the ice cream cone come to be? What problems existed that it solved? Why is a chair built the way it is? Why is this the simplest way to accomplish this task? The lesson here is that much as you learn from reading or talking, you can pick up a lot just by examining the world around you and taking the time to understand how it came to be.

**#4 – Appreciate Execution** – Remember when I listed the four activities I did that got me listed as creative? The last one was the ability to find a lot of ways to execute a single solution. It is very easy to think of creativity as solely solving the big picture. A lot of creativity is finding all the answers to the little questions. Next time you run across something that you feel is creative, take the time to examine all the small choices that were made. It is the tiniest choices that often hold the greatest creativity. As an example, when Aaron (Forsythe) and his wife Anne had their first daughter, my wife and I threw them a baby shower. We asked them to pick a theme and they chose summertime. They arrived at our house to find our family room covered in fake grass with a giant picnic blanket and basket. Someone commented that the set-up was very creative, to which Randy (Buehler), who was as the party, replied, "What impresses me most isn't the picnic, but rather the fact that the grass is filled with little tiny plastic ants."

**#3 – Assume that the Power to Change Things Lies Within You** – I said above that the number one thing that keeps people from being creative is a lack of trying. You'll never solve a problem if you don't see it as your problem. Remember that you can be the solution to a problem even if you're not the cause. In addition, approach problems with the mindset that your actions might have had some influence. If they did, this is the only mindset that will allow you to find them. If you didn't, harm will seldom come from trying to help fix it.

**#2 – Assume Every Problem Has an Answer** – When are people the most creative? When forced by necessity. One of my favorite scenes of the movie "Apollo 13" is when the ship has a problem and a roomful of scientists are given a box of the items the astronauts have and told that if they don't solve the problem in a certain number of hours, the astronauts will die. Guess what? They find an answer. Why? Because they weren't given failing as an option. This lesson is vital for creative thinking. If you force yourself to find an answer you will. If you allow yourself off the hook when things get tough, you won't.

**#1 – Use Randomness as a Tool to Problem-Solve** – I've read many books on creative thinking, and what I've learned is that in the end they always give the same piece of advice (although usually dressed in different clothing). The key to being more creative is learning how to use randomness as a tool. What do I mean by that? I claim that creativity comes from being able to see connections between things that others don't see a connection between. How do you see these connections? Force them. Make yourself find a connection. A great technique I use when I'm trying to be more creative is to force myself to connect something random to the problem I'm solving. For example, when I'm trying to design new cards and I'm stumped, I like to give myself random challenges. Design a card inspired by a donut. Design a card that doesn't have the letter "e" in its text. Design a card that would make sense if the Mona Lisa was the art. What this does is force me to approach the problem from a vantage point I've never had before. While not every solution is golden, it does free me up to think about the problem in a whole new way. Just remember point #2.



## The Thoughts that Were Think

I'm sure this wasn't what you were expecting when you got here today but I hope you've enjoyed it nonetheless. As this column demonstrates on several levels I tend to zig when people assume I'm going to zag. This is a topic I've been wanting to write about forever, and one of the joys of having a column like "Making Magic" is that I have the vehicle to do so. I'm very eager to hear any feedback either on the thread or in my email (both positive and negative). Do you like columns like this? (I know I like writing them.) Please give me more than a simple yes or no.

Join me next week when I not only talk about Magic but explore its future.

Until then, may you embrace your own topic of passion.

Mark Rosewater

*Mark Rosewater is Head **Magic** Designer. What this fancy title means is that he's in charge of **Magic** design. This gets him a lot of mail (which he actually reads). When not alternatively destroying and saving **Magic**, he likes to spend time with his family, do stereotypically geeky things (play games, read comics, watch a lot of science fiction, etc.) and write about himself in third person.*



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