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the Emergence Explorer

Questions for the Week of May 7, 2007



"On Falling in Love With Math"



- Can information be learned if it is not personally relevant?
 - Is not knowing things inherently shocking to everyone? Or just some of us?
- How is it possible, at forty something, that I am just now learning to love math for the first time?

Do you know?

This Week's Questions

[These questions were posed by John F.]

Recently, I realized that arithmetic, algebra, geometry, physics, calculus are all ways in which math connects us to our world. Prior to this realization, I saw these studies as independent disciplines. In other words, I used to see these studies as separate from both me and the world, as if they existed without having a direct relationship to our world.

This is probably why, before this realization, whenever I tried to learn math, I just plodded along and tried to memorize what I had to as best I could while guessing at what I could not recall. In the end, until I connected math to the world in which I live, I had no real understanding of any of these courses. Or any

way to value what I learned.

My questions are:

[Question 1] How is it possible, at forty something, that I am just now learning to love math?

[Answer] Intellectually, giving you an answer is easy; you fell in love only after being surprised at the beauty you saw in math and it took you until forty something to do this. In fact, whether we are talking about a romantic partner, a child, an intellectual pursuit, or a sports car, the essence of falling in love is always this same experience. You fall in love after being surprised by seeing the beauty in something or someone.

The thing is, what I've just said will emerge in you only if you can picture what I'm saying which, in essence, is the *sine qua non* of falling in love. What is the *sine qua non*? Literally, it's Latin short hand for "that without which." *That without which a thing would not be a thing.* The old Greek method of defining things. Subtract everything not unique to this thing, and what you have left is the essence of the thing.

Why answer your question in this way? Because any question involving something as complex as love cannot be answered without first knowing the *sine qua non* of the thing. No essence. No personal knowing. Thus if you can't easily recall this experience happening, you will struggle to understand what I've said personally. Even if you've fallen in love many times.

What makes us think we can know things without this access? Most human beings mistakenly think they can know things based on facts. In other words, we believe we can define things based on being able to recognize some of the qualities of a thing. For instance, take rum and vodka. Both literally have the same chemical essence; ethyl alcohol. Yet most people see them as quite different, this based almost entirely on the fact that they look, smell, and taste quite different.

What makes them different. Only the small amount of impurities in them. On this alone, they look, smell, and taste very different. Moreover, these impurities, while a very small difference by volume, turn out to make a very big difference in look, smell, and taste.

Not getting what I'm saying? A second example would be the difference between rusting iron and a candle flame. Very few people realize that the essential process happening here is the very same process; oxidation. Why don't people know this? Because what they can see; rust and flame are so visually and physically dissimilar.

So back to what I first told you; are falling in love with a puppy and falling in love with learning math the same essence? At the level of the *sine qua non*, yes they are. And yes, obviously there are a great many differences. Even so, underneath it all they are the same basic experience. And this experience can happen at any age, with any person, place, or thing. All that is necessary is that you suddenly witness the beauty in some person, place, or thing, after which you find it hard to believe there ever was a time wherein you did not feel this love.

[Question 2] Can information be learned if it is not personally relevant?

[Answer] Interesting question, John. So can information be learned if it is not personally relevant? Yes and no. You see it depends on whether you are asking me this question before or after you learn

something. What's the difference?

Before you learn something, the thing you learn will all feel irrelevant. Not really important at all. But after learning this something, it and all related information will feel important and personally relevant to you.

In a way then, what we have yet to learn, we cannot know is relevant to us as human beings. Why not? Because getting to know something personally relevant to us as human beings is the same as saying, "we learn it." Thus while we may feel a strong desire to acquire some certain learning, and while these feelings are definitely personal feelings, they are not about the information itself. Rather, they are only about what we believe we will gain after having learned this information.

My point? Before we learn something, we cannot feel a meaningful connection to it. At best then we will feel a personal desire to get to know what it will do for us, and what may feel personally relevant will be how this lack of knowing affects us. After you learn something however, this all changes, and what you have learned now becomes not only personally relevant but also personally meaningful.

Stated more simply, everything you seek to learn things will seem personally irrelevant before you learn it. These feelings only come after you learn something. This in fact is one of the main things to like about learning; we make personally irrelevant things personally relevant.

[Question 3] How did my Learners' Block in and around the concept of fractals trigger my love of math? In other words, before I understood what fractals were, I felt angry at Steve for requiring I learn about them. Somehow, though, my defiant attitude transformed into a personal desire to explore fractals. How did this happen?

[Answer] John, at this point, the details of this how this happened to you remain a mystery to me, as you've not actually shared much of what happened to you here. The process itself. Only that it happened and how this happening to you surprised you. What I can say though is this. The basics of what changed in you are in my previous two answers. To wit, before you learned to see the beauty in fractals, you felt like there was nothing personally relevant for you to know there. Afterwards, this changed, and the idea of fractals became very personally relevant. Why? Because the beauty I had been seeing in fractals became visible to you too.

Interestingly enough, the easiest way for you to see that this is indeed what happened to you is to notice how you were previously blaming me for your inability to see this beauty. As if I created in you this struggle in and around your learning about fractals. Thus while I did encourage you to come and see this beauty for yourself, I did not prevent you from seeing this beauty. Thus I could not have made you struggle.

At the same time, as you now know, fractals as a concept is one of the most difficult ideas in all of nature to learn, both with regard to knowing their physical nature as well as their psychological nature. Somehow though you expected that if you tried hard enough to grasp these admittedly difficult concepts, you could master them all within the space of a few hours or so.

Good luck, John. Many of the smartest minds in the whole world do not yet understand fractals. This despite the fact that many of them can literally quote back the most accepted descriptions of said idea in spades and in some case, are even seen as world experts on this subject. Parroting facts does not a knower

make.

You on the other hand now do have a personal sense of fractals. Moreover, of this, I am sure. How? Because of the way in which you now love talking about them.

This then is the only true test for learning; do you now love talking about this thing you are being asked to know. In other words, it turns out that the old saying, *to know me is to love me*, is true. To know something is to love it.

And if you do not love something? Then you cannot truly know it. And this holds true no matter how many facts you can quote about this something, including having written whole books on the subject. In fact, many teachers have even spent whole lives teaching people things when in fact, they've never themselves ever fallen in love with what they teach. Which means what exactly? Which means they cannot know it and so, cannot teach it.

What is equally important here is how you can use peoples' defiance to know if they've actually learned something. You see, when people feel defiant with regard to being asked to talk about something, this defiance indicates they do not know it. Thus, when supposedly learned folks get defiant when asked to explain what they know, they do not know what they claim to know. Imagine that! And while an absence of defiance does not necessarily indicate that someone has learned something, the presence of it in a person when asked to tell another what he or she knows very much does indicate that this person does not know what they are talking about. Just as when this defiance was present but then disappears means the person has indeed finally learned this something.

Perhaps the relevant thing to know here then is that when you feel defiance in response to being asked to learn something, you do not know it. And either you never knew it or your access became blocked. Either way, to know something is to love it. Just as the song says.

[Question 4] Is the experience of not knowing things inherently shocking to everyone or just some of us?

[Answer] As best as I can tell, the sudden realization that we do not know something is inherently shocking to all of us. On the other hand, this shocking experience is also a normal part of the cycle of learning we must all go through in order to learn something. It is, in fact, the part of this cycle we call, "dead stops."

What is being in a dead stop like?

Essentially, we feel very stuck in not knowing. No where to go and no curiosity to fuel the search.

We also feel things like that we will never come to understand this thing we do not know, and that no matter how hard we try, what we do learn will never mean much to us personally.

In a way then, we could say that the essence of being in a Dead Stop is we feel forced to some degree to learn something. Moreover, like all experiences wherein we feel forced to do something, being forced to learn feels pretty bad. Terrible even.

Interestingly enough, this feeling differs markedly from it's sister state, the state of learning called, the Unknown. This despite the fact that in both cases, we cannot see an answer to something we are trying to

understand. What is the difference then?

The difference lies almost entirely in which Layer these two states occur in. With Dead Stops, we are in Layer Five; symptoms. And with Unknowns, we are in Layer Seven; pure needs.

Thus, when we are in the State of Unknown, the essential quality is that we feel an unsatisfied curiosity. This is a Layer 7 experience and is the default state of young children. Thus it is a good feeling in that we feel free to explore. With Dead Stops however, we feel the *symptoms* of an unsatisfied curiosity without the visual knowledge of what it is we are not getting. Thus, with dead Stops the essence is that we feel compelled to get out of the pain of not knowing.

This then is what makes being in a Dead Stop a Layer 5 experience. We feel shocked into the symptoms of being forced to learn something we do not know. Whereas, with Unknowns, we feel drawn by curiosity to explore what it is we have yet to discover.

[Question 5] Why is it so hard for me to connect whenever I do not understand something?

[Answer] John, answering this question is simple. No one can connect to anything else while in shock, and your not understanding simply sends you into shock. Moreover, your going into shock very much stems from what I discussed in the previous answer, wherein the essence of this shock is that you've tried too hard to find an answer.

What am I saying? I'm saying that when we do not know something, it is simply a part of our nature to seek this answer in what we already know. However, because we all know a myriad of things, this process very quickly spiders out our beyond our minds capacity to contain this process. And when it does, we go into shock and lose our ability to connect to anything else. Including to any other persons.

This in fact is what makes us feel so alone when we try too hard to know something. Moreover what might make understanding this a bit easier would be to picture a deer caught in the headlights of a car.

Has you ever had this happen to you? Years ago, it happened to me. And when it did, I stopped my car and tried to get the deer to move off the road.

To my surprise, the deer wouldn't move. Or more accurately, couldn't move. How could I tell? Because I could literally see the deer's body ticking as it tried to move its muscles. Despite these efforts though, the deer still could not move. Why not? Because the light from my car headlights was still overloading the deer's optic nerves and exceeding the capacity of the deer's mind to hold this process.

What I'm saying is, the deer's brain simply had too much data to process, and at some point, its mind went into overload. Literally, it couldn't understand what was happening to it. This, in fact, is very similar to what happens to computers when they lock up. And in both cases, while it appears the source object is frozen, in reality, their CPU's are working at maximum plus capacity as they try to find an answer to their stuckness.

We do the same thing when we try to force answers. We exceed our minds capacity to process all the data and get suck in a "trying to find an answer" loop. Moreover while all our processing power is focused on finding an answer, we have none left over with which to connect.

This is the essence of shock. All our processing power is focused on finding an answer, we have none left over with which to connect.



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