Evolution, Free Choice, Selfishness & Education

Dr. Michael Laitman Interview Series

With Dr. Gary Marcus, Director of the NYU Infant Center and Professor of Psychology at NYU, Editor of the *Norton Psychology Reader*, and Author of 3 books on the development of the mind; his latest book is *Kluge*.

Host: Hello and welcome to this episode of our series. As always, I'm joined by Dr. Michael Laitman, Professor of Ontology and Kabbalah, with a Doctorate in Philosophy. He is the founder and director of the Bnei Baruch Kabbalah Institute.

Joining us today is Dr. Gary Marcus. Dr. Marcus is the director of the NYU Infant Center and Professor of Psychology at NYU, as well. He is the author of three books on development of the mind, and also the editor of the *Norton Psychology Reader*. His latest book, now in paperback, is *Kluge*, and we're going to learn what "kluge" means here, and welcome Dr. Marcus.

Gary Marcus: Thank you very much.

Host: May I call you Gary?

Gary Marcus: Sure.

Host: Okay, great. For the uneducated like me, could you explain to me what "kluge" means?

Gary Marcus: Well, not that many people know the word. It's an old slang word from engineers, and what it means is a clumsy solution to a problem; something that gets the job done, but….

Host: Like a make-good, like a fix?

Gary Marcus: Kind of like a fix, yeah. Like duct tape and rubber bands; you get the job done, but not necessarily in the best way possible. The thesis of the book is that the human mind is a little bit that way. It gets the job done, but it's sort of duct tape and rubber bands; it's got its problems, and we need to work to address those problems.

Host: Why is that?

Gary Marcus: Well, I think that the reason it's that way is because evolution doesn't know how to look ahead. So if you imagine an intelligent designer, the intelligent designer could say, "I want to do these particular things." But evolution just builds new things on top of old things, and sometimes the new things don't really fit with the old things, so you get a clash between sort of newer technologies and older technologies. The problem is that evolution takes an old system, turns it around a little bit, and tries to do something totally new with it.

Michael Laitman: Well, the fact that there is evolution, that's certain; we see that everything evolves. But what I think is that it seems that nature knows in advance in which direction to develop us, but we're not trying to go along with what nature wants of us.

I think that within us, as we know, there are genes and hormones, and everything that is in us aims us toward evolution, toward evolution according to steps that are preexisting in us. But we, because we are evolving through our egos, we don't really agree with this right kind of development. So with our egos, we always disrupt this evolution; now, we are in a situation that we don't know what to do with ourselves next.

And what we do in every area of our engagement, we have come into many, many crises and many dead-end states. But if we, I think, look from the other side of nature, we can see that in nature there is a plan. Just as we see this amazing wonder of the cells, how they evolve, and how all parts of nature seem to us more and more connected into one global system, an integral system; I think that we have many revelations ahead of us, and we will have to discover that all of the future forms of ours are in nature already, inherent in nature.

Host: So looking at it almost algebraically, that you know the answer but you don't know the entire formula, yet?

Michael Laitman: We don't know it, but within nature these future states exist already; that's what I think. In the end, if we take our studies in quantum physics, in astrophysics, in what I find in biocybernetics, in research of integral systems in nature, and in the laws of the evolution of the universe, we really are more and more inclined to think that in nature everything is preexisting. But this picture evolves, unfolds before us, and as we perceive it, we grow. Hence, it is as if we are in a much more complicated and developed world, but through our evolution we discover it more and more.

Gary Marcus: There's an issue there of determinism, and whether there's sort of free will in anything, or whether you can predict. Laplace was the scientist who most famously talked

about this, the mathematician. Could you, if you knew where all the atoms are now and their trajectories and so forth, could you predict the future? That's a very difficult question and quantum mechanics enters into it. So there are arguments both ways, I think, in the scientific literature about the extent to which things are determined.

Michael Laitman: From what we learn from research, where is free choice? Where is it? If we take into account that a person is born with preexisting qualities, he is in an environment where he grows up to the age of, say 20, and then he goes out to life. And of course, with the qualities he was born with and the way society designed him in the first years of his life, it turns out that afterwards, he doesn't have any free choice. He's preprogrammed. He's built already and acting on what was instilled in him, on the one hand, and on the other hand, how the society he was in designs his values.

Gary Marcus: Well certainly environment influences development. My earlier book, *The Birth of the Mind,* was all about genes and the way that they interact with the environment. So even at the level of a single gene there is always interaction. So a single gene, people think, "Well, what does a gene do?" It builds a protein, but what it really does, if they know that much, but what it really does, is it has both conditions. Not only does it say, "build this protein," like collagen or keratin or something like that, but it says when and where it should do that, and that can respond to an environmental signal. So it might say, "If there is this kind of sugar around, then I will build the protein that allows me to metabolize this sugar, and otherwise, not." So, every gene is conditional in a way that potentially interacts with the environment, so there are certainly interactions with the environment all the way. So there will be a correlation, but it won't be a perfect correlation.

I think that's in general what we see with the gene - environment relation, is the genes sort of, you could think of it as specifying a range of possibilities, but which of those ranges of possibilities actually occurs, depends on the environmental input.

It's really built that way; that is how the system works, which is a good thing from the perspective of evolution. So for example, plants have ways of dealing with very dry seasons where they will hunker down and not do as much growth, and they have ways of dealing with rainier seasons.

There are different sorts of programs, almost, in the genes for coping with different kinds of situations, with different environmental situations. The genome is actually incredibly flexible; some people think of it as a blueprint that dictates exactly where every cell will go, and stuff like that. But it's not that way at all; it's really a set of programs for responding to all kinds of different circumstances.

Michael Laitman: Perhaps, we're just not seeing that there is an even higher program than the genes that are developing, that have several possibilities, as you were saying, that they can develop in several directions, and then there's the environment. But maybe there's a higher program that puts them one opposite the other, that causes them to develop the way they do? Maybe we're just seeing a small part of nature, and in this fragment we don't see the whole picture.

Gary Marcus: For me, the higher program, if you will, is simply random chance, and fitness, and survival, and so forth. I don't think that we need, scientifically, recourse to some sort of external agent. I think it is enough to say that sets of genes, that say, are very good at coping with bad environments, are going to thrive relative to the other one.

Michael Laitman: If I understand you correctly, then say in a child, there are many possibilities of growth, but in the end, the environment determines the direction of its growth?

Gary Marcus: The environment constrains things, and that includes your family, but also includes just random accident. You know the game of Telephone? I talk to you; you talk to him, and so forth. Even if we have the exact rules of the game, that doesn't mean that we perfectly execute those rules; we are not a hundred percent faithful. So the rule is I tell you something, and say exactly the same thing to him. But there are limits on your hearing, and how clear I articulate, and how well you remember it a minute later when you tell him, and so forth. So inevitably, if you play the game of Telephone with 20 or 30 people, you wind up with an ending message that is very different from the beginning even though the rule is very well defined: copy this information, and do this rule exactly.

But the biology isn't that precise; there is a lot of sort of fuzz in the biology, a lot of randomness about how particular molecules are diffusing at particular moments. It's sort of like predicting the weather. We can do a reasonably good job of this, but there is so much variation, but it's the same thing.

Michael Laitman: We don't know the laws yet, but the reality follows deterministic rules, or perhaps, there is something unknown here, incidental that is an exception to the rule, to the plan, and as much as we research, will always remain in this incident.

Gary Marcus: I think the analogy with the weather is actually pretty good, with meteorology. So people can get enormous amounts of data, but there is still kind of indeterminacies as far as we understand them. It could be that, sort of, nature is such that the weather three weeks from now, that it is going to be exactly 68 degrees, and it's going to rain for exactly 20 minutes, but nobody can actually figure that out because there are so many random variables. There is a famous, slightly exaggerated notion about a butterfly flapping its wings in Cincinnati.

Michael Laitman: Yes, but it depends on our lack of perception, not on the fact that there is no plan in nature, but just because we don't understand it.

Gary Marcus: That could be, but another possibility is there is quantum indeterminacy. There is some level of randomness introduced there that we just can't know about, and that nobody could know about. It is just there is randomness, and that leads things in one way or another. You could think about a drop of water that falls on the Continental Divide. Does it roll out to the east or the west? It's just not clear that there is enough knowable information to determine that for that individual drop of water. With the same mechanism… the reason we shouldn't…

Host: Forget about a drop of water, let's talk about…

Michael Laitman: It depends on man's limitation.

Host: Yes, but when you're talking about a drop of water falling left or falling right is one thing. Okay, that, I clearly think that is something that is chance.

Gary Marcus: I don't think it's so different in the fluid dynamic of an individual cell dividing.

Host: Well, but I think, from what I've read in your work in the science of Kabbalah, that there's a little deeper answer?

Michael Laitman: Well, of course, nature has its laws, and the more we know them, they become more accurate. In the end, science will discover them, but for now, we are in a state where we don't know these laws. So it seems to us like there are things that are unpredictable and unknown, and there are chances here. We are facing an ocean of information that you cannot compute; you cannot collect, and you cannot put into a formula. But in the end, the law exists in nature, but we always have a lack of information and control. I am researching a lot into the impact of the environment over a person. We take great interest in how to build groups of children that the group educates the child, not the grownups, not the teachers, or the guides. But around children in places that are kind of predefined like kindergartens and schools and colleges, where we can, perhaps, design a person towards life in a way that seems to us correct. If there are any kinds of discoveries on that in your work, I would be very much interested in hearing.

Gary Marcus: I think that the broader answer is that we need, as a society, to spend a lot more money on education. Not just sort of paying the teachers that are already there, but really doing deep, scientific research on what it is that causes children to have trouble.

I think that in general the way that the education system is set up is there's a curriculum of things we want children to know, and we sort of force-feed it to the children. There's not enough analyzing the child, and saying, "Well, where do they get into trouble; what is it they're having trouble understanding?"

Michael Laitman: We have to understand that school should not only turn children into engineers, or physicians, or economists, or maybe lawyers. First of all, they have to come out with values toward their environment, and here is where we run up against a problem that is not really up to the teachers.

Gary Marcus: I totally agree with that. I think part of teaching children about the broader picture is really to understand the limits of their own minds. We don't really teach them about what it is to be a human being, or the limits of the human mind, the ways in which we can be selfish, the ways in which - some of the things I talk about in *Kluge* like how we have confirmation bias, where we have a theory and we notice evidence for our own theory; we don't notice evidence that goes against those theories. So there's sort of a basic set of life skills, which is understanding that human beings are not perfect systems, but that we fail to achieve our goals for particular reasons, and so forth. That, I think, we certainly could teach children if we took away some of the emphasis on "These are the facts you need to know for the test at the end of the year."

I think that the global situation probably makes them more important than ever because, for example, the environmental crisis and the way in which if we don't act soon, we have problems.

So your notion of working through the peers, rather than through the teachers say, is a very good one. I think there's very good data to show that kids learn more from their peers than

their parents or the teachers. You can think, for an example, about linguistic accent. You have immigrants and their children; the children will speak the accent of their neighbors, not the parents. That happens over and over again because kids are very sensitive to their peers. And I think that thinking about more ways to have, say, eight year olds teach six year olds, and ten year olds teach eight year olds, I think, would be a great idea.

Michael Laitman: We see that the crisis is a global one, and it's showing the integral connection between the whole of humanity that people are becoming interdependent, that all the civilizations, the nations, the cultures, and the religions are kind of becoming all mingled and included in one another. So my question is this: Does it seem to you that at the basis of the crisis is the same problem of the lack of the right connection between people? And this problem reflects in other areas that we engage in, that we connect in, like the financial system, the cultural system, the education system, in science and psychology, in family, in drugs, in ecology? But is this really people's attitude toward each other that is the basis of the whole issue?

Gary Marcus: I think there are a number of sort of basic psychological themes that undercut a lot of these crises, and some of it is sort of awareness for other people. We do have some. So human beings, for example, will leave tips at a restaurant that they're never going to come back to. They're not doing that out of pure selfishness; they're doing that out of some sense that other human beings matter. But that sort of core concern for other people could certainly be fostered more than it is.

But, so, there's a general issue in humanity that we're relatively self-centered, not entirely self-centered. There's a general issue that we're pretty self-delusional; we come up with theories and we notice evidence for those theories, and we ignore evidence for other theories. And that makes everybody think that they have the unique access to the truth, and that everybody else is foolish. And so, that creates friction because people aren't very good listeners to other people. They don't evaluate other people's arguments as well as their own.

And then there's certainly intrinsic greed, which leads people to think that they can perpetually make money with houses, for example. The fact that human's fall into pyramid schemes over and over again reflects a certain lack of self-awareness about our own cognitive limitations.

Michael Laitman: Maybe the solution is on a psychological level, on the educational level, and not on the political level - looking for a regulator, looking for other kinds of valves, our attitudes toward nature, to ourselves, to society. It's really psychologists who are the ones who are supposed to provide the answer. They should put things in order and fix it up.

Gary Marcus: I think psychologists can help a lot. I think that you need both short-term and long-term solutions. So, short-term solutions are: You need the banks to start lending each other money, and that's not really a job for psychologists; although, even there, psychologists can contribute a little bit.

Host: Psychology plays a huge role in that, actually.

Gary Marcus: It does play a role in it, but there are also...

Michael Laitman: That, too, is a psychological problem, a lack of trust.

Gary Marcus: Yeah, I mean, lack of trust matters a lot, too. Psychologists can't write the checks, 780 billion dollar checks; so there are limits to what they can do.

Host: They might do a better job.

Michael Laitman: That's a shame.

Gary Marcus: So there are short-term solutions and there are long-term solutions. The long-term solutions are about keeping us from winding up in the same places over and over again. Why do we keep having recessions? Why do people keep falling into pyramid schemes? Why do we keep using up our natural resources?

Host: Why do we keep going for bubbles?

Gary Marcus: Why do we keep going for bubbles? And those are psychological questions. And education, I think, is the best way to address those.

Michael Laitman: Is there awareness of that in the government, in authorities, that here you have a psychological problem in human nature that first needs to be addressed so we don't fall again?

Gary Marcus: It's growing a little bit, that knowledge; so the place where it's growing most, I think, is in the field of behavioral economics. Economists are starting to be aware that people don't always make rational decisions, and there's starting to be some measure of that reflected in the government. Obama actually appointed a guy named Cass Sunstein; he's actually a law professor, but he's very well-versed in behavioral economics, and he's sort of, not policy maker, Chief Regulator, I guess is his title, or something like that. And so, there's starting to be a little bit of these ideas from psychology filtering into government policy. But I think it's still relatively small compared to what the impact should be. I mean, I think that government really should, the cabinet really should have a counsel of psychological advisors just as it has a council of economic advisors, for example.

Michael Laitman: So, there is no real research or studies on the fundamentals of the crisis being basically psychological and only with it, can we resolve it?

Host: Well, can you explain your view of when you say the crisis is basically psychological? Could you expand on that a little?

Michael Laitman: Well, I think that if today we have a problem that the whole world, our whole civilization is integral, and we're all interconnected, say like cogwheels in a machine, then it turns out that all the problems of today are because of the lack of the right connections between people. We've grown with our egos to the point where the world has become all connected, and in that interconnection, we're still working with our egos or with our insights toward each other.

Gary Marcus: One of the things that I wrestled with when I wrote *Kluge,* and that I think about a lot is there's a notion of humans working in their own self-interest. And particularly, Richard Dawkins has talked about the idea of the selfish gene: that each thing that we would do would sort of maximize our own inclusive fitness, how many copies of those genes exist, and so forth. But there are lots of things we do that aren't even consistent with our own self-interest. So for example, and I hate to say this on television, but people watch too much television.

Many people watch four or five hours a day of television, and it has an immediate reward. It's fun to watch the television. It turns out that people that watch a lot of television are actually less happy than people that watch a little bit of television. The empirical data show that people are less happy if they watch four hours a day. Why are they doing that? They're not actually doing it in the interest of their selfish genes, which is kind of the way that economics is setup. They assume that you will do things in your self-interest. They're actually doing it because there's this glitch in the brain that says, "what happens in the next thirty seconds is really important," and the next thirty seconds is, "it's easy to turn on the television." It would be harder to spend twenty minutes to get in the car and go visit a friend, but you might actually be happier building social relationships.

We make decisions that at an individual level seem to make sense. There's something called "the tragedy of the commons," where everybody does something that individually seems good, but winds up being bad for everybody. The famous example is fishing. Everybody fishes the crabs in the Chesapeake Bay; it's good for everybody for a little while, and then the crabs all disappear, and then it's really bad for everybody in the long-term. We often don't have the collective will or the self-reflection to realize that we get into these problems of the tragedy of the commons.

Host: How do we create that collective will?

Gary Marcus: We've got to have a very broad attack. You have to go after the Congress; you have to go after the Executive Branch; you have to go after individual human beings to raise awareness. I'm not sure it's something that we can do in the next two weeks, but we might decide, "Hey, we're in this situation now, we're going to have to lick our wounds, but we should really think forward as a society; how do we do that?"

Michael Laitman: What is the immediate solution, with hope to approach the real correction afterward?

Gary Marcus: The immediate solution, I think, is we have to give people a little bit of optimism. Like when I read in the New York Times everyday lately, it's become very sensationalist. There will be stories like stockbrokers who have become nannies, or there was a story about some parent selling her daughter's tricycle for five dollars while the daughter was riding the tricycle. And these stories are true; I don't doubt that they're true, but they're very vivid and they make people very pessimistic. And the problem is, it is partly psychological, so why won't people spend money now? Because they're pessimistic; they think they're going to lose their jobs, and so forth. There's some rational self-protection there, but there's also fear, and it happens at the individual level and the corporate level.

Michael Laitman: It's good to give people hope and maybe some light in their lives, but on condition that afterward we will actually correct from the basis; this patch is good only to stop the leak, but you really do have to approach the expert.

Gary Marcus: I agree with that. I think that one thing that we ought to be looking towards is more sort of deals that commit the future. People are pretty happy to commit their futures; they don't want to commit their immediate present. So I think that one thing that we can try to do, the government can try to do, is to make deals that essentially say, "We'll do this now, but

down the road, you've got to make this extra investment in education, or expand the research in education, and things like that."

Host: I want to thank Dr. Gary Marcus and Dr. Michael Laitman for joining us today. Thank you.

Gary Marcus: Thank you very much.