



Lessons Learned Oral History Project Interview

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Introduction

Raghuram Rajan, the Katherine Dusak Miller Distinguished Service Professor of Finance, has taught at the University of Chicago Booth School of Business since 1991. His work has expanded public understanding of financial institutions and their effects on economic growth and development across countries.

At the Federal Reserve’s Jackson Hole Conference in 2005, Rajan delivered a paper—“*Has Financial Development Made the World Riskier?*”³— that warned about growing risks in the financial system and a possible crisis, and proposed policies that would reduce such risks. The paper was received with skepticism by some but came to be viewed in a different light as the events of the Global Financial Crisis (2007–09) unfolded.

Rajan has also held a series of high-level policymaking positions, including as chief economist and director of research at the International Monetary Fund (2003-2006), adviser in several capacities to the government of India (2007-13), and governor of the Reserve Bank of India (2013-2016). Rajan was recognized as a fellow of the American Academy of Arts and Sciences in 2009. His 2010 book, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*,⁴ addresses the underlying causes of the GFC.

¹ The opinions expressed during this interview are those of Raghuram Rajan, and not those of any of the institutions for which Dr. Rajan is affiliated.

² A stylized summary of the key observations and insights gleaned from this interview with Mr. Singh is available in the Yale Program on Financial Stability’s *Journal of Financial Crises*.

³ Rajan, Raghuram. 2005. “Has Financial Development Made the World Riskier?” 2005 Jackson Hole Economic Policy Symposium. <https://www.kansascityfed.org/Jackson%20Hole/documents/3326/PDF-Rajan2005.pdf>

⁴ Rajan, Raghuram. 2010. *Fault Lines: How Hidden Fractures Still Threaten the World Economy*. https://www.google.com/books/edition/Fault_Lines/HY1V19yWOJUC?hl=en&gbpv=1

This transcript of a telephone interview has been edited for accuracy and clarity.

Transcript

YPFS: Professor Raghu Rajan, thank you for joining us this morning.

Rajan: Well, thanks for having me.

YPFS: Noting your remarkable career experience in the academic sector as well as your having been head of the central bank of India, I wanted to mine your career a little bit. Because we're in such a remarkable time, it's good to think big. Starting with "Essays on Banking" in 1991, then looking backward, are there experiences in your earlier life you can point to that predicted your focus on the banking sector and then this broader concern with capitalism and democracy?

Rajan: Well, I think that a lot of academic life and career development more generally is serendipitous. It doesn't necessarily happen that you have a few incidents which would mark you for life and then you get carried on the basis of those incidents into a career in a specific way. But if I were to point to things that made me interested in economics more generally, I would say that it's the experience of growing up in a poor developing country.

My father was a diplomat. So, I had spent some of my earlier years in developed countries, in Europe. And so going back to India and then seeing that there's a fair amount of poverty and trying to understand why in a country that seems to have reasonably smart people—no different than the ones I had encountered in the West—why we were still stuck at such low levels. And those kinds of questions push you into trying to think about the way the world works. And I would guess that propelled me into studying economics. Of course, I took a winding path there. I first did the safe thing, which in emerging markets is to study engineering because there are lots of engineering jobs. So, I studied engineering. But somewhere in the middle I thought I wanted to think about how real people behave rather than about fields and waves. And so, I slowly shifted into economics and finance.

YPFS: During your time in India, it was a closed country that began to open at a measured pace, alongside China. How did that experience impact your views about economics?

Rajan: India was certainly quite closed in the mid '70s. When I went back to India from Belgium, where my father was posted, everything was rationed. There was very little, and the public sector dominated production. So, you got half a loaf of bread; you rarely got milk. And it was doled out based on the card that you had.

Then India started opening up and you saw magic happen; things started appearing in the shops. It was a measured opening, as you said. But it started taking place through the late '70s into the early '80s. And there were signal events. For example, we had color TV introduced around the Asian Games in 1982. Suddenly, you could see things that you'd seen only in black and white. Cricket matches, for example, now were green and white. You saw the green of the grass and the white that the players wore.

So, things were opening up, and you start asking the question, why did it take so long and what are we missing? What more needs to be done? And I had moved into a PhD by the time India really opened up, which was in 1991. Some of their opening up was a reaction to China. India had always made the excuse that it was a big country. It was not like Taiwan or South Korea or the Asian tigers. It was much bigger than them. But when China opened up and was quite successful in moving forward, India ran out of excuses. It also ran out of money, which was a positive coincidence in the sense that it propelled reforms.

YPFS: I'd like to fast forward a significant amount to the speech in Jackson Hole.

Rick Mishkin⁵ said, "Raghu Rajan was the one person who predicted the Global Financial Crisis, the US subprime collapse, and how that played out."

I'm not sure you'd say that. But I think you saw something that others did not see. And so, maybe it wasn't the right forum, but you made that point about the system's vulnerabilities—"the incentives give me concern"—in 2005, which proved to be only too true. What did you see that others didn't? And what does that reaction say to you?

Rajan: Well, first I don't think I saw anything that they didn't. I'll tell you specifically what I saw, but it didn't require any deep data science to get at it. It was all there in plain sight.

I think what you had to have was a skepticism about the system. This is where I say traversing systems helps. One of the things that my colleague, Luis Zingales who comes from Italy, and I who come from India, agree on is: The systems in a country are often so messed up that it makes us skeptical about the systems even in other developed countries. And you need that skepticism to understand how things may go wrong. If the systems always worked, then you forget that at the center of those systems are people. And people will go in the direction of the incentives the system creates.

I think that the difference between me and some of the people in that room at Jackson Hole was not that I saw anything different, but that they somehow had

⁵ Frederic S. Mishkin, now a professor at Columbia University's Graduate School of Business, was a governor of the Federal Reserve System from 2006–08.

the confidence that the problem we saw would be taken care of. There's a more sinister view I'll come to in a second. But what I saw were fairly strong incentives to take risk—what one would call tail risk, risk that has a small probability of happening.

YPFS: I understood tail risk as a collective-outcome-type probability. But an individual can have incentive to take tail risks. Is that what you mean?

Rajan: Well, it was both at the individual level as well as the bank level, right? So, basically if you're a trader rewarded on the income you generate, one of the most effective ways of generating income is to write insurance against catastrophes which don't come. There's a small probability it will happen, but before it happens, you keep collecting insurance premia. And since the risk is a tail risk, there's a small probability it happens; most of the time it won't happen. You look like a genius; you are collecting a lot of money. You're taking out your bonus. You're setting aside very little capital against the possibility that that catastrophe will occur.

Now this requires two things. One, you take on a tail risk. And two, the risk is very poorly measured so that your bosses don't really know you're taking on this risk, or they're going with the flow and saying, "Well, we don't require you to hold capital against this stuff." And so, it looks like you're making money out of your sheer genius. AIG is a classic example. The kind of insurance it was writing against default risk—the credit default swaps that it was issuing were basically a bet that things won't go sour. There was a small probability that they would go sour. But you ignore that, and you write the premia; you make a ton of money, and everybody's happy until the risk hits, in which case, things can go south very quickly.

So, I think that was the incentive, both amongst the individuals who were collecting large bonuses for the money they were making, as well as for the banks that had a bunch of these individuals; they were not measuring the risk and basically showing high profits.

And I remember in late 2006, early 2007, I was in a conference with a bunch of risk managers, and I said, "Aren't you guys worried about this stuff?" Because we were getting close to midnight on the crisis scale. And they didn't seem to be, and I was just trying to push them. And nobody responded. Then, in the break, a risk manager, who was a smart guy, walked over and said, "Look, you're asking the question to the wrong people. Anybody who was worried is no longer here. They were fired."

And so, the point I was trying to make is: The incentives in the system are such that you will be taking these risks. This was not about villains and heroes. It was about the system itself creating these incentives. And the belief in the room was that the system would take care of itself. It couldn't be that the

smartest guys in the universe were taking these risks and would succumb to them. The smartest guys in the universe knew that they needed to survive, and so they had checks and balances in place, and things would work out.

I remember at the end of that talk, we had a post-talk coffee break, and I spoke with two of the most powerful central bankers in the US. And they were unhappy because I'd raised the issue. But there were also two private sector people there. And the private sector people were saying, "You guys have to stop us." And the central bankers were saying, "You guys can take care of it."

Nobody was in charge. Central bankers believed that the private sector had the checks and balances in place. How could these smart guys not have those checks? While the private sector was basically saying, "We're competing with each other. We're going down this pretty dark road, but we can't stop ourselves because it's a kind of herd behavior. We're competing with each other. I can't be the guy to not take these risks and to show no profits." And so, it was a mess.

YPFS: That's really fascinating in a couple of ways. We're digging into these nuts and bolts on a side Yale-sponsored project with exactly this idea—that it wasn't heroes and villains, but it was a series of unique incentives and regulations that fueled the run-up in collateralized debt obligations and subprime. This theory has been addressed in a couple of widely read books, but we're trying to figure out how much of the story remains untold. Do you see anything there that still needs to be told?

Rajan: I would say that we focused a lot of attention on the bad incentives in the banking system and the lack of capital and the extreme leverage and so on. What gets a free pass and shouldn't is central bank policy. I'm not talking about the regulatory policy. That we understand was deficient, and people will throw the regulators under the bus. But regulators have very modest influence when you have huge risk-taking incentives in the system.

I think that central banks, or certainly the Fed, has to have more responsibility on two dimensions. First, and this is going to be a debate for a long, long time: Was the Fed too slow in elevating interest rates when things were really picking up in 2004, '05, '06? And the Fed would say, "That was what the pace of economic activity required. We were raising rates at a measured pace given that." And there are some monetary economists like John Taylor who said it was too slow. And that energized the kind of frenzy that we saw. I am in the camp that believes that hindsight is of course 20/20, but it certainly was slow relative to the financial risk-taking. Of course, you could argue that it wasn't the monetary authority's task to slow down the risk-taking. It was the responsibility of the supervisory and regulatory authorities. But, at any rate, the supervisory and regulatory authorities did not step up to offset the incentives created by the relatively slow raising of interest rates.

But the second thing, which was almost as damaging as the first, was what has come to be known as the "Fed put;" this was developing at that time. The history was: Late in 1996, 1997, Chairman Greenspan talked about the "irrational exuberance" that had been enveloping markets. And he got tremendous pushback from Congress and others who said, "Who are you to be talking about stock markets?" And he basically was foreseeing [things to come] but decided to keep quiet. And then we had the dot-com bubble and then the bust, right? And then the Fed came in and cut interest rates, and it was a relatively mild recession. But the belief then was that the Fed should not intervene when things are building up because it can intervene powerfully when things collapse and help the system revive.

And so, this one-way intervention, "I'm not going to resist the building up of risks, but I'm going to put a floor once it collapses," became the official mantra. In fact, Governor Don Kohn, when he was discussing my intervention at Jackson Hole, essentially said that. "We know how to fix it. Basically, we will pick up the pieces when it collapses." And I think that the danger of that statement was that it told the markets, not only are we not going to stop you from taking the risk with some intervention, but we'll be there to erect a safety net when things collapse.

That creates even more of a one-way bet. Again, I would not blame any individual official. I would blame to some extent the experience with the dot-com bust, which was taken as proof that the Fed could be very powerful. What they did not realize was that the dot-com bust was largely about equity markets collapsing. It could be quite different if debt markets collapsed, and that was the situation they were faced with in 2007, 2008.

YPFS: Can you spell that out for us? Equity markets get a lot of attention. What is different about a debt market collapse?

Rajan: Equity is: If I'm a pension fund and equity values fall, that's fine. I hate it; my assets are 75% of what they were after the equity market has fallen, but I don't have to pay my pensioners immediately. Basically, I will have to figure out a way to get my assets up over time or over time reduce the amount of pension that we pay out—some kind of a negotiated deal with my pensioners. But nothing happens overnight.

The problem with debt, however, especially short-term debt, is that it needs to be renewed. And if it doesn't renew, then I'm in default if I'm a borrower. And if I'm in default, then I can't pay my lenders, and some of my lenders go into default. Suddenly, there's a chain of defaults that people start worrying about. That chain can infect the entire system. So essentially what you have with short-term leverage is the classic features of a bank run through the system. If I see other people not lending or renewing their deposits, I have an incentive to go and get my money out also. And so, if I'm a hedge fund, which

has parked some money with its broker, basically let me get the money out fast before that guy collapses, because none of it is insured. And so, what you had as things started going south and there was a sense that some of these investments would not pay off, the short-term funding of these banks and financial institutions stopped rolling over that easily. And then you had contagion spreading through the system.

That won't happen with equity because, typically, mutual funds and pension funds either have long-term liabilities or their assets are liquid enough that they can be marked to market every day. That's the case with either a money market mutual fund or an equity mutual fund. And so, there isn't a run-like episode with these. Now that said, even with money market funds, it turned out that as liquid as they were, it was hard to sell some of their assets and some of them actually started breaking the buck. But that's a different story.

YPFS: What explanation of the cause or causes of the Global Financial Crisis is best? Professor Mishkin has a “rogue wave theory”—that it was a unique constellation of causes, many of which we've just talked about. What is your reaction to the “rogue wave theory,” and what do you think is the best explanation for the crisis?

Rajan: Some massive wave which comes out of the blue? I think there were some unique circumstances, but I think there were also some you can see in every crisis. I mean, just compare that crisis to what we see today. Take first, as the pandemic was building, suddenly the money market started tightening. You saw the Treasuries go out of kilter, et cetera, and then funding dried up. And the reality was that it did dry up, but a fair amount of leverage had been building up over the last 10 years, and easy monetary conditions were in part responsible for that leverage building up in the private sector. And this time, the leverage was not as much in the household sector as in the corporate sector. And so, suddenly in March 2020, you have panic spreading in markets, and the Fed comes in with all guns blazing and says, "Don't worry, the US Fed is here to rescue you."

And it may well be that the US Fed did what was necessary at that time, but you have to always ask: Well, what prompted the necessity? And you could argue it was the pandemic, a rogue wave again. But the pandemic came at a time when positions were stretched, when leverage had built up—things that Fed officials like Janet Yellen have been warning about. And so, the question is, why couldn't we stop this leverage from building up again? And we've come to the rescue of the system once again, but did it deserve to be rescued? Did it need to get back into this position of difficulty? Is there something deeper going on whereby the Fed is doing too much and ignoring the financial stability consequences?

Those are the questions I would ask. I think they deserve debate. I don't think there's a clear answer. But I think that all too often, central bankers get a free pass. And as a former central banker, I will admit to this. They get a free pass because they're supposed to be doing good stuff for the economy. And a lot of what they do is [good for the economy]. But are there some unanticipated or unintended consequences of their actions, which they claim they can't really do anything about, but perhaps we should pay more attention to?

YPFS: It's remarkable; the recurrence of massive interventions does raise a lot of questions for people. But do you think the 2007–09 US emergency actions by the Fed and also Paulson's Treasury-backed TARP bailouts for the financial companies were different from the interventions in this pandemic where it's health-driven?

Rajan: Yes and no. They were really very quickly crafted, a whole set of interventions. And given the state of the economy, given the state of confidence in markets, again, at that point, they were very necessary. I would not be one to dispute their need. And we don't know what worked, but something worked. I would argue it was the stress tests that worked, coupled with the capital support that they offered. But we can, again, have a good debate about what precise measures worked. Nevertheless, I think, the Fed under Ben Bernanke emerged as a hero for doing all of that, and I think deservedly so. There was a lot of cooperation between the Fed and the Treasury. It was great that Paulson and Bernanke had a good relationship. So, everything worked out.

The question, however, is, now that there is a playbook for intervention, from all the programs that were there [in 2007–09], what we see in 2020 is that playbook was brought out again, plus some. And so, you can feel happy that it was all available and the system was built out again. Or you can say: Well, this is the second time it's happening in maybe 12 years. And what's the message? Is it telling the markets we will always be around, and every time we'll do what we did the previous time, plus a little more to deal with any new circumstances? In which case, aren't you in danger of creating dependence?

YPFS: How do we know if we are creating dependence? How do we inquire? And what's going to tell us that?

Rajan: So, this is the post-pandemic attempt to tie the hands of the Fed. This happened the last time around also. Congress said, "Yes, what you did was really great, but we don't want to do it again. And so, we're going to tie your hands a little bit." But of course, the danger with tying your hands is that it's not credible. The markets will take the same kinds of risks. And when push comes to shove, there will be an emergency decree by Congress, and we will do it all again.

In other words, Pandora's box has been opened, and there's no way to push the evil spirits back into the box. Because the real magic was nobody knew how to open the box or knew precisely how the box would be once opened. And once we learned how to open the box, that unlocking stays with us. We can't unlearn it. And so, all the various acronym programs that were put in place, we know that they work, and now we can't forget it. And the market knows we know, and the market can rely on the Fed to come out with all guns blazing.

Take the extraordinary set of things that were done, the swaps with other central banks, the intervention into markets by partnering with investment banks and BlackRock and so on, the TARP itself, and the stress test. All these were innovated in the span of a few months; but now they're out there. That's the key to Pandora's box. And given that they're out there, and given that we have the key, it can be opened anytime. And it was—on March 23rd, 2020, the Fed used exactly the same techniques to reassure the markets.

YPFS: **Done much more rapidly this time because they had the playbook. The first time it took them a year to fine-tune it. This time, they just put it out there, and boom! Because they had it, like you said.**

Rajan: Exactly. And so how do we get away from this? I've been trying to say that we are using the wrong tool—monetary policy—for deeper structural problems in the economy. And when we do that, we invariably get into trouble.

YPFS: **That's really interesting because there is a current debate about whether monetary policy is used as a crutch for what fiscal policy should be doing, and that we should deficit-spend. You've written against that, and you point in a different direction here.**

Rajan: I'm not thinking: Once you give up on the monetary, the next is fiscal. What I'm thinking is that there are deeper structural problems in the economy—as reflected in factors like inequality, that you have large parts of the population which aren't earning significant amounts. They're not able to express their demand. And as a result, we seem to be in a situation of chronic demand weakness, what Larry Summers refers to as secular stagnation. But I think that emanates from some of the structural problems the economy has. What we have in many developed countries is large parts of the economy are obviously very well developed. But some parts of the economy are third world and falling further behind.

YPFS: **In 2015, I did a study on financial capability. One half of American households have zero retirement savings, practically no net wealth.**

Rajan: Right. I think the number was \$400; so many households have less than \$400 for an emergency. But it's not just poverty. It's the lack of skills, the abysmal

level of education, sometimes even the abysmal level of nutrition and health. Often this is an inequality of place, as much as it is of racial group or other.

So, unless we recognize that the real problem is a development problem, that we don't have these left-behind groups consuming and participating in a full way in the economy, it is going to be really difficult to run it in a sustained way. This is why you get monetary, fiscal, as well as credit excess. You need all that to boost demand, and it is unsustainable because too little flows into these segments of the economy and too much into other segments of the economy, and you have the rising inequality as the symptom. But the true underlying problem is very, very different capabilities in a first-world economy.

YPFS: I think it's commonly understood that these social conditions, inequalities create social problems and political manifestations. But financial stability and the performance of the country's economy—what we were talking about three minutes ago—in the common mindset, that's a different topic. How do you make that connection?

Rajan: Well, the simpler way to think about the connection is actually a very old Marxian point. Even while teaching at the University of Chicago, I believe Marx had a lot of useful stuff to say, some of which Chicago has appropriated. But one of the things that the Marxists used to say is, "Look, capitalism has embedded in it the seeds of its own destruction." They had different ways to try and get at that.

But one way which should resonate is if you have inequality for whatever reason, what happens is- Marx used to say the opposite of the capitalist is the worker. But let's say they are a bunch of really skilled workers and a bunch of not-so-skilled workers. And in the economy, the really skilled workers are the scarce commodity. They keep getting higher and higher wages. And the moderately skilled workers, basically the jobs get more automated, et cetera, et cetera. And they're earning less and less, or relatively less and less. Let's say relatively.

And what happens then is the poorer people are the ones who actually consume more of their income, because they spend it more on necessities. How many yachts can the rich guy buy, and how many mansions can she have? A very limited number. So, what happens then is you can argue that greater inequality leads to a lower aggregate consumption. Take a dollar from the poor guy, give it to the rich guy, consumption falls because the poor guy was consuming that entire dollar, and the rich guy saves 30% of it. Right?

So, inequality could be a reason for inadequate demand. And then you try and pump up that demand by giving the poor guy credit and say, go out and spend, and he spends himself into difficulty as we saw with the Global Financial Crisis. I wrote a book in which one of the chapters was entitled, "Let Them Eat Credit."

So, the idea was, their jobs really suck, but let them use their house as an ATM—borrowing against the equity rise. And they feel quite happy for some time.

And if you think about the pre-Global Financial Crisis, politicians from every hue, including Mr. Barney Frank—who was responsible for the Dodd-Frank Act post-financial crisis—were encouraging an expansion in housing. For good reason: It would give many more people houses. But it also was very convenient when house prices were going through the roof because it kept people really happy. I mean, politicians want that, and again, for good reason. But nobody wants to fight the ever-rising prices, but they can have bad consequences when they collapse. And that was what we discovered in the Global Financial Crisis.

So, I would argue that the inequality, the inadequate demand, the measures to try and boost it all create this unsustainable cycle where we go from boom to bust, to boom, to bust. And we need to get out of it. And it seems to me the way to do that is to see how we can really help the people in communities that are falling behind, which is where my book, *The Third Pillar*, comes in.

YPFS: **I see the motivation for your book. I'm thinking now of the experience of central banking you had in India. You run the central bank of India after advising the top politicians there, and you had to deal with the effects of another major initiative of the US Fed: quantitative easing. What do you say about US quantitative easing from the perspective of the Reserve Bank of India? Another one of these major US interventions with global effects.**

Rajan: Right. So post-financial crisis, again with central banks being the only game in town, the idea was, "let's flood the world with easy money," and that would be a way we get back to growth. Again, it's hard to diss the central bankers on this; it seems reasonable. But again, it creates a wave of leveraging elsewhere. The economies in the West were stuck and needed the "oomph" of easy money to try and get them back on track. You didn't want to have very tight money then. But the economies in the rest of the world were already doing quite well. And more easy money on top of that created its own difficulties. Lots of money flowing in made it harder to deal with those difficulties.

So, when the taper tantrum happened—that was when Ben Bernanke announced that they were thinking of normalizing US policy, ending quantitative easing, et cetera—for a few months you had panic in financial markets as the belief that there would be easy money forever vanished. And people started bringing money back from those emerging markets where it had gone, back to the industrial countries. And so, I went into the central bank in India at around that time with a major panic in these financial markets. The Indian exchange rate was down by about 25%. Lots of fears that there would

be a local crisis. And so, you have to come in at that point and try and build confidence. And that was really my baptism by fire.

YPFS: **You've covered a great deal with us and provoked our thinking a lot. Now if you could summarize, Professor Rajan, what would be your main lessons learned from the Global Financial Crisis, that we should note down?**

Rajan: Well, I would say, first, something of this magnitude is not about bad people. There are plenty of bad people, but bad people take advantage of circumstances. Something so big is systemic; it means there were a lot of good people carried by the circumstances of the time. And you cannot assume that you will fix it by putting the bad people in jail and bringing in a whole set of new, good people.

You need to ask what the underlying causes were; that's the second thing that I would say. The underlying causes seemed like a bunch of things coming together, which won't happen again, but I think that's the wrong diagnosis. There are deeper challenges which came together. And you may ask, "Were those challenges the same across industrial countries?" No, they were not exactly the same across industrial countries, but there were similarities.

You have to ask, in the same way as we have seen the rise of populism across the industrial world, were there factors that led to the rise of financial risk-taking across the industrial world? And I would argue that the similarities, in many cases, go back to the underlying circumstances of industrial countries. And what I emphasize is the effects of trade and technology have affected industrial countries in similar ways, exacerbated inequality, made macroeconomic management much more difficult, and have put undue weight or pressure on monetary policy.

Much of what we see on the financial sector side is really the consequences of all that. And if we are to fix them, well, we've done the fixes on the financial side to some extent, but we still couldn't prevent yet more massive intervention during the pandemic.

Now, it would be tempting to say, "this was that rogue wave which wasn't anticipated." But I think that would be, again, too easy. We have to ask, "Why didn't the world recover despite very, very easy money between 2009 and 2020? And what should we do to get a more sustained, stable macroeconomy?" I don't think the answer lies entirely in either monetary policy or the financial sector. It lies more with fixing the real sector problems.

YPFS: **Fantastic. Thank you for summarizing so clearly and for taking the hour-plus.**

Rajan: Of course. And good luck with the project.

YPFS: Thanks, you very much. Have a great day. Goodbye.

Rajan: You too. Bye-bye.

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