



THE A.Q. KHAN NETWORK AND ITS FOURTH CUSTOMER

MONDAY, JANUARY 23, 2012
WASHINGTON, D.C.

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“The Secret Treachery of A.Q. Khan”

Transcript by Federal News Service
Washington, D.C.

GEORGE PERKOVICH: Good morning. My name is George Perkovich. I'm vice president for studies and director of the nuclear policy program here at the Carnegie Endowment. We're going to begin now, and then, I imagine, other people will be filing in because of the severe weather outside – (laughter) – which, evidently, thanks to Maddie (ph), I know was predicted last night. I was watching the football game and I was oblivious to all of that.

But welcome. It's a real pleasure to be hosting you here this morning, and especially to have Josh Pollack here to make his presentation on "The A.Q. Khan Network and its Fourth Customer." Those of you who have read the article will, you know, no doubt have an idea of the points that it makes and how interesting it is. But I was very eager to invite – (phone rings) –

MR. : (Off mic, inaudible.)

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DR. PERKOVICH: It's OK. Actually, I'm reminded – I'm supposed to – you know the thing about everybody's supposed to turn off their cellphone and BlackBerrys and all because it interferes with the microphones and all that, that was the cue. Not to worry, Mike (sp).

It is especially a pleasure to have Josh here because I think he's an outstanding researcher. I've always admired his research. He's – it's possible to be creative and a researcher at the same time, and I think to do that, you have to really want to dive into topics, and not go in with a closed mind and just assume certain things, but actually get in with data or historical experiences and then try to start pulling threads and see what unravels or see where things lead.

And in reading Josh's work over the years, I've really admired the energy of his research and the meticulousness of it, but also the open-mindedness of it. So he's not – he's not just following his hypotheses. And so when I read this, I immediately said, we've got to have Josh come give a presentation on it here. It happens to be a topic on – with which I'm familiar, so obviously, I thought there was a lot of plausibility to what he was saying, which made it all the more interesting to have him.

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And I also had a slight suspicion that where it was published was going to be a red herring and make people avoid coming to terms with what was in the text, which made it all the more appealing to me to have him come here, and hopefully get people to take it as seriously as it was warranted. So with those introductions, let me invite Josh to kind of take us through the research and the presentation, and then we'll be sure we have plenty of time for discussion.

I want to welcome the cadets coming in and others. Great to see –

JOSHUA POLLACK: They're midshipmen.

DR. PERKOVICH: What's that?

[00:03:45]

MR. POLLACK: Midshipmen.

DR. PERKOVICH: And the midshipmen too. I thought I saw some cadets. But so welcome, and there are some seats here in the front. Don't worry.

Anyway, so, Josh, why don't you take us through it, and then we'll open it for discussion.

MR. POLLACK: Well, thank you, George, for that lovely introduction and for the invitation. And thank you all for coming out this morning in the allegedly impossible weather. Since I know you'd all like to get to the discussion, I will try to make this as painless as possible. For those of you who don't know, the very basic facts about A.Q. Khan is that he was – thank you – he was the head of Pakistan's uranium enrichment program from the mid-'70s until the end of March in 2001.

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He had a remarkable publicity machine within Pakistan, and was and still is, in many quarters, celebrated as the father of the bomb. At the same time, he was controversial, because it was known since the late 1970s that he had acquired gas centrifuge enrichment technology from a European consortium through illicit means. This is the URANCO consortium.

What really brings him to our attention again is that in January of 2004, he was placed under house arrest, interrogated by the Pakistani authorities, and on February 4th, he got in front of a TV camera and confessed to reselling this same technology to other countries, which he didn't name. So that's the very basics about him.

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Now, since all this has taken place, there's been just a tremendous amount of research into Khan, tremendous amount of publications, at least seven serious books – so almost an average of one a year. And newspaper articles, magazine articles, scholarly works – there's now a tremendous amount of information out there. But there are still some unresolved questions, differences of opinion between those who have studied Khan and how he operated.

It's generally accepted that he built up a network of suppliers across the globe – in European countries, in South Africa, in Japan, to a lesser extent in North America – and used them to evade export controls, to supply both Pakistan's enrichment program and the enrichment programs of his customers, who were generally described in the media as being Iran, North Korea, and Libya. Although in his televised statement, again, he did not name them.

So the major points of dispute are what you see listed here on the screen. To what extent was he operating on his own? In his confession, he said it was all me. I did it. But he disavowed that as quickly as he could and said he'd been made a scapegoat by the military. So how autonomous was he from the military? There are differences of opinion among those who have followed this carefully.

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Second, why was he doing it? Even if you believe the "I was just following orders" version, which has been one of his versions over the years, it's also pretty clear that he got wealthy in the process. However, I think there's more to it than that, and we'll touch on that briefly.

And then, finally, how many customers and who were they? I mentioned Iran, North Korea, and Libya. However, there have been longstanding suspicions that there was a fourth customer. And that, of course, is a big part of the interest of my article, I think.

So how do we know all this stuff? How can we make any judgments about this stuff? Very quickly, there are four bins of evidence. One are reports by the International Atomic Energy Agency in its investigations of Iran, Libya, and to a lesser extent, North Korea, since they don't have any access there. They've provided a lot of detail about Khan. They directly investigated the Khan network for a number of years.

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Secondly, there are other investigations. I mentioned all of the journalistic and scholarly efforts there have been. I'm not going to recite all of them, but what you see here depends, in many ways, very heavily on them. Then there are official Pakistani accounts. These are few and far between. There have been presentations to the media by Pakistani officials. There have been documents circulated. Pervez Musharraf, who was the president of Pakistan in 2004, published a memoir in 2006 in which he gave an account of the interrogation.

And then there's what I'm calling the Khan dossier. During the period of the Pakistani investigation, Khan prepared a series of documents, which he then smuggled out of the country with his daughter and had her provide to a British journalist years later, once Pervez Musharraf was – had safely stepped down and gone into exile, and could no longer pay Khan back. And these give Khan's version, or rather versions, of the story.

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So what we can do is compare all of these sources of evidence and come to some conclusions, at least provisionally. Now, just so you know about the interrogation, as I mentioned, he was under house arrest for pretty much the duration of January 2004, and also thereafter for a long time. He was interrogated by the heads of the ISI, which is Pakistani's premier intelligence agency, and the SPD, which is their nuclear security agency.

In the background, senior figures at Khan Research Labs, which was the uranium-enrichment facility he had headed through the spring of 2001 – they had already been arrested. They were being questioned. One senior figure there was a man named Mohamed Farouq, who had been the head of the foreign procurement division at KRL, appears to have been talking.

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So Khan was in this situation of the prisoner's dilemma, a bit. He had someone else talking against him behind the scenes, and so he couldn't say whatever he wanted to. He had to say something. So we'll see how he handled that situation and how forthcoming he was. So basically, when we look at media accounts of the interrogation and we look at the Khan dossier, we find at least three versions, from a period of about two months, from A.Q. Khan.

The first version, as you can see, is the military made me do it. Second, the Dubai middlemen. These were key individuals in the Khan network, who he had worked with since at least the early '80s, perhaps the late '70s. And he put forward an argument that he had given them Pakistan's gas centrifuge designs so they could go out and buy parts from around the world to build these centrifuges. And then they went forth and sold the same thing to other countries.

And he just happened to witness this, so he was aware of it, dimly, but it was really their business. And, well, too bad about those centrifuge designs, but that's just how he had to do business – and that's the nuclear black market for you. That's just how things go. So that was one version.

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And then his most complete version is the most complex, and the longest of the documents we have from him, where he describes his absolute centrality to all of the achievements of Pakistan's nuclear programs, and then, when technology from this program started to go all around the world, he was just in the background. It was top military officers; it was dead or absent people, as we will see. That's one of my favorites. And it was, of course, the same Dubai middlemen again.

So very quickly, we'll just see some excerpts from these documents. This is from a letter to his wife, which he wrote for safekeeping when the fact of the arrests of Mohamed Farouq and others became public. You'll see he uses the word "bastards." It's one of his favorite words over the years. In this case, just from context, he means – he means senior military figures.

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So he's saying: They want to make me a scapegoat; they used us. They want to get rid of me to cover up all the things they got done by me in connection with Iran, Libya, and North Korea. So he's saying, yeah, I did all this stuff, but they were hip-deep in it, and I'm not going to let them get away with it. And the rest of this letter says, if they – if they start

messing with me, I want you to leave the country and take this to various journalists, and tell them my story. So that's what's in the rest of the letter. This was for safekeeping. He was not announcing to the world, at this point, that he had done these dirty things.

So then we get into the second version, blaming the Dubai middlemen. And this is particularly interesting. This is a newspaper account from February 1st. So this is really from conversations in late January, towards the end of his interrogation.

And what he told his biographer – who was one of his very faithful friends, and always relates Khan's versions of things – is, as you see in the second paragraph, that it was the Dubai guys, the middlemen. They -- when they came to know that Iran and Libya wanted this stuff, well, they just took Khan's documents and they used it to order parts and build centrifuge programs for Iran and Libya. Khan had little to do with it – nothing, really. He just, unfortunately, provided the designs, the blueprints.

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So that's how it all went down – you know, not me, these foreigners in Dubai. And the third version: Now, this comes from a document called “Statement by Dr. A.Q. Khan.” I don't believe it is identical to the so-called confession that is – that is sometimes mentioned in the media, but I think it's an edited version of it from about a month later. Because it's dated in March, and he probably signed the so-called confession in very late January or early February.

But it appears to be, as best as we can tell, virtually identical, just slight differences. But anyway, this is the version that he put out to the world, so this is his view of things. So first of all, he's responsible for everything. It could never have happened without me. I trained everybody; everyone was dancing to my tune.

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Second, not only did I create the enrichment program, but I'm indirectly responsible for the entire Pakistani nuclear complex. Why? Because there was this big Chinese-Pakistani nuclear cooperation deal in 1976, and because of my assistance to the Chinese, they, in turn, helped Munir Ahmad Khan, who was the head of the Pakistan Atomic Energy Commission and A.Q. Khan's archrival – at least in A.Q. Khan's eyes – they then helped him with all these things that he was incapable of doing. So me, me, me. That's basically what this means.

But then, suddenly, when the subjects of Iran, Libya, and North Korea come up – oh, not me. Not me. So 1989 or 1990, the chief of the army staff, General Beg, made this foolish promise to the Iranians – we'll give you nuclear weapons. So instead, General Imtiaz Ahmed, who was the – and who was in charge of the nuclear program, according to Khan, at the time, and the late Dr. Niazi – they sort of conspired and said, look, A.Q., let's just give them some components and drawings. And I gave them to Niazi, and so on.

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Now, who is Niazi? He did die a few years ago. He was a dental surgeon in Islamabad. So what does he have to do with this? I don't know, but Khan says he was a confidante of Benazir Bhutto, who was at the time the prime minister, and General Imtiaz Ahmed. So he's saying this dead guy did it. Benazir Bhutto did it – and by the way, she was in exile from Pakistan in 2004, so it was very easy to blame her for this stuff – and General Imtiaz. So it's dead people; it's people who are far from the scenes. You can't really talk to them, or they have no power here anymore. I'm going to pin it on them.

And then he says – and then we see the Dubai people again, in the second paragraph. Taheer and Farooq are the names of the Dubai operatives. So then, you know, they got involved in this Iran thing, and they contacted a different guy, Farouq – the Farouq from Khan Research Labs – and bothered him for some equipment for Iran. But I don't remember. So his memory is now failing, suddenly.

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Now – and so it goes on like this. I will not drag you through every detail, but he claims the same cast of characters were involved in supplying the Libyans as the Iranians. And, you know, basically, when he was in Dubai, he witnessed some of these discussions with a gentleman from Libya. But it was all business between user and supplier – not me, in other words. He just was a fly on the wall.

Now, when we get to North Korea, he says really it was the chief of the army staff, General Karamat, who wanted money from the North Koreans. The North Koreans wanted enrichment. So I told General Karamat; he said OK. I should note that General Karamat, who is alive and well, strenuously denies this. So this is Khan's blend of versions.

Now, when we lay this and everything else out on a timeline, what we see is – and you look at the boldface items – these are transactions that Khan says he was involved in. He puts them all in this – the band of time between the green bars, 1989 and 1996 – in other words, the Bhutto years – and again, Bhutto is out of the country. She's in exile. He's going – he's going to put it in this time frame. The red bar is when he lost control of Khan Research Labs.

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So that's his version. And besides this – you know, that – it's just in this narrow band, he had limited involvement, dah dah dah dah. Now, what do the IAEA and various other investigations have to say about Khan's activities? Well, it looks more like this.

Now, the blue bars are when he was shopping or providing nuclear technology to other countries. So up at the top is when, according to the IAEA, he first approached the Libyans, which was January of 1984.

And down at the bottom is when he supplied the Libyans, from 1997 through 2003, when the network's activities were disrupted – by far his largest and most important deal. But it appears he had probably two major agreements each with the Libyans, Iranians, and North Koreans over the years, and possibly some others. He also approached the Iraqis.

He also met with the Syrians. One of his close associates met with the South Africans and approached them. There was a lot going on, including a transaction with the Indians from some of his associates in South Africa. So it's much fuller on the timeline.

And what does that tell us about his autonomy? Well, it tells us that – it tells us that he was deceiving the military authorities, and that he was minimizing any of his activities. Well, if he was just serving them, why would he have to deceive them? Why would they interrogate him for a month?

I find myself largely in agreement with David Albright of ISIS, who has studied these questions pretty closely. And what he has to say about Khan's autonomy – pardon me while I – while I find this, so I can quote him accurately – was – is basically that he was – he was mostly on his own. He said: “While Pakistani military and political leaders came and went, Khan remained. He operated freely in a largely unregulated, sometimes corrupt political and military environment. Top leaders might have sanctioned a few specific proliferation acts but in general they tolerated or did not know of, let alone have the ability or motivation to stop, his and his associates' many proliferation activities.” So that's where I come out.

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Now the question is why. And we know about wealth and comfort. There was an internal Pakistani investigation that's been reported in some detail in books and articles. He had several houses; he had large bank accounts in several countries – you know, it was a few million dollars. But I think, more importantly, he was out for the admiration. He wanted the love and effective and – love and affection and honor that his countrymen could bestow on him. Why exactly that is, is sort of out of scope for this morning, but really that's what he was after. And to do that, he felt he had to spend a lot of money on philanthropy and things like that. And to spend a lot of money, you have to get a lot of money. So I think that's where the bulk of the money went.

Now what we can see very quickly is that, if you look at his curriculum vitae, which he's published on his website – a very interesting website; I really recommend it – what we can see is, he was awarded an extraordinary number of gold medals and other awards, starting in March 1984 and really picking up after 1997. And how it – how it seems to have worked is, he would make a large monetary gift to various civic organizations in Pakistan. And then that would be with the expectation that they would provide him with this very public honor. So the honors are the flip side of the philanthropy. Similarly, he got six honorary doctorates, five of them after '97.

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So what's the significance of '97 here? Well, that's the big Libya deal, when he started getting lots of money. I don't – I don't argue that his only source of money was proliferation. The Pakistani investigation found that he operated Kahuta, KRL, in a fairly corrupt manner. So he had more than one source of money, but this seems to have been an important one. And, you know, as for the philanthropy, he built a lot of educational institutions – particularly the Ghulam Ishaq Khan Institute of Science and Technology, where he seems to have put a lot of his own money into it. And again, you got to make

money to spend money, and he was doing this on a civil servant's salary. I've read some feeble excuses about his wife's parents had some land – you know, not very credible.

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So OK, how can you rationalize this? This is a guy who, in effect, is betraying his country so he can turn himself into his country's greatest hero, by – through his publicity machine, through his philanthropy. And one of the important rationalizations is: The stuff he was giving the Iranians and the Libyans, they couldn't use. I can go a little further – and this is where the research of Scott Kemp at Princeton University has been very helpful – he was actively cheating them. He was providing incomplete documents, incomplete components, broken components, used components, irrelevant components; he was giving them a working-over.

And this is, in fact, one of the reasons why they sold him down the river. It was the Iranians and the Libyans who brought him to the attention of the International Atomic Energy Agency when their own programs came to light in late 2003. They had a score to settle. Once they no longer had reasons to hide their programs, well, they were going to – they were going to give it to this guy who had been giving it to them for years.

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Then there's the North Koreans. This is a bit different. You know, the North Koreans had a plutonium production reactor. They had, according to Khan, rather advanced nuclear weapons designs – take that with a grain of salt. So what he argued in his statement was that, well, they were so advanced, they didn't need this for weapons. They had other things in mind; no harm done. So whether it's Iranians and Libyans – no harm done because they're incompetent and I'm not really helping them – or it's the North Koreans – they're so advanced they don't need my help, at least not for weapons – the bottom line is, no harm done. So he could rationalize anything.

Then we get to question of – now that we're done with motives and autonomy – how many customers? Media accounts since late 2004 have suggested that there was a fourth customer that never came to light. And they usually connect this to missing shipments: orders, invoices, manifests that the IAEA and other investigators found in the networks, records – particularly it had a factory in Malaysia that was assembling – manufacturing parts, buying parts from elsewhere, sending them on to Dubai and then from Dubai to Libya. But there were a lot of things in his records that could never be accounted for. Now is that really the reason to suspect there's a fourth customer? Maybe. Or maybe this stuff was going to North Korea, or Pakistan, or – who knows? But the media have made a lot of the question of the missing shipments.

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A recent book by Collins and Frantz dwells on this issue of the fourth customer quite a bit. They interviewed Urs Tinner, who was a technician – a senior technical figure in the Malaysia factory. And according to Tinner, he also had a relationship with a certain intelligence agency that – you know, C-I-A, certain intelligence agency – (laughter) – and was

feeding them information about Khan and was trying to sabotage Khan's operations – although, given the treatment that Khan gave to the Libyans, he probably was the best saboteur himself.

Now he suspected there was a fourth customer. He was given instructions by his handlers to ask Khan for information about who the fourth customer was, so they had a reason to believe there was a fourth customer. But he couldn't bring himself to do it; so when Khan was in town, when they met, he just couldn't bring himself to ask him. And they had a long-standing relationship. They – his father was a – had been friends with Khan for years. And the IAEA thought there was probably a fourth customer as well.

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So everybody thinks there's a fourth customer. Why? Well, I wasn't happy with this, so I interviewed Olli Heinonen, who was the head of the IAEA's investigation. And I said, why do people believe there's a fourth customer? What do these missing shipments have to do with it? And he said, yeah, the shipments could have gone anywhere. And then he said to me: The members of the A.Q. Khan network would refer to the fourth customer. It was their code language. We don't know who they meant.

So this seems to be the real reason that everyone thinks there was a fourth customer, because some of these guys were going around talking to each other about the next shipment to "the fourth customer." That's where the phrase seems to come from. Now – so this protected the identity of the fourth customer. And, indeed, this suggests that relatively few people within the network would have known who it was. That may have been the point; it was – it was a sensitive question, who was the fourth customer.

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So who was the fourth customer? Wow, you really can't see that. So –

MR. : (Inaudible.)

MR. POLLACK: Right, right. Well, what was supposed to be here is an excerpt from a South African court document – basically a prosecutor's brief from 2006 that describes how Gerhard Wisser, who was one of Khan's suppliers in South Africa, also supplied UF6-resistant flow meters to the Indian centrifuge program in the late 1980s and early 1990s. These are specialized components that are used in a centrifuge plant.

So this information has been out there a bit. I think many people assume that, because Khan portrayed himself as the great defender of Pakistan against the Indian archenemy, that he could not have done business with them, and that Wisser may have been acting on his own. And I think that's possible. But perhaps they're hiding in plain sight – the fourth customer is hiding in plain sight – because this is the only other country that the Khan network is known to have supplied – other than Pakistan, Iran, North Korea and Libya, the only one.

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Furthermore, it seems that the subject of India came up in Khan's interrogation. The day after Khan's televised statement, General President Pervez Musharraf gathered members of the Pakistani media around, announced that he was pardoning Khan – that was the deal – and he said, here are the findings of the investigation. And he started to talk about the nuclear underworld. And he – at first, if you look at the second paragraph, which I've boldfaced, he seems to be talking about the concept of nuclear black markets very much in general. And he says, everybody gets their start from the underworld; we got it – India got it from the underworld.

But then he shifts gears, and it becomes clear that he's actually not talking about nuclear black markets in general; he's talking about the Khan network. (Inaudible) – there's a route in Pakistan, Dubai serves as the transportation center – that's the Khan network; you know, European countries, Asian countries – which is a reference to Japan and Malaysia. So it's ambiguous at best; what is he talking about?

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Well, fortunately he gave us clarification a couple years later in his memoir. He's very much talking about the Khan network supplying India. He describes what Khan said: According to A.Q. – and he describes the network – these people included nationals of, blah, blah, blah. So several were based in Dubai and Europe. They were pursuing their own business agendas independently. Ironically, the network based in Dubai employed several Indians, some of whom have since vanished. There is a strong possibility that the Indian uranium enrichment program may have had its roots in the Dubai-based network and could be a copy of the Pakistani centrifuge design. So now we're getting beyond the supply of components, and we're talking about centrifuge designs.

Now, if you were paying attention, you will recognize this excuse. This is – this was Khan's second version when he was talking about Iran and Libya, so compare passages. At the top is the Musharraf memoir: All the individuals in Dubai and Europe were pursuing their own business agendas. And then Zabouad Zahid Malik (ph) told The Washington Post: Khan thought that these middlemen and manufacturers – you know, “middlemen” means Dubai; “manufacturers” means Europe – came to know of the nuclear ambitions of Iran and Libya, they approached them.

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So it's the same feeble excuse, but it seems that Musharraf was willing to accept it when it came to India. I think it – this whole issue may have been too hot to handle. He was under a lot of pressure not to arrest Khan, to treat Khan with respect, to pardon him once he confessed. This was a very contentious matter in Pakistan. So I think he was prepared to accept this same feeble excuse when it came to the Indians.

And we see the same techniques: Khan blaming the dead or the absent when it comes to India. Won't drag into this, because we want to – we want to get to the Q and A. But the point is that the magic vanishing Indians from Dubai appears to be a reference to actually a man from Sri Lanka, S.M. Farouq – who, some accounts say, was of Indian origin.

But the real point is that Khan says he was sending money to India, that he had independent access to the centrifuge designs.

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And – whereas David Albright alleges that Farouq retired and took a buy-out from Tahir, his nephew, who then ran the Dubai part of the network – Khan, in an interview in 2009 said: Actually, no, no, he stole the money and he vanished. He ran off, fled to Singapore. Two years later, he elaborated it: He didn't flee; he died of cancer, so you can't talk to him. Or maybe he did flee, but then he died of cancer. He's a blackmailer; he's a CIA agent; he vanished; he disappeared into thin air; nobody could find him – so, again, blaming the dead or the absent.

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But this – this doesn't tell us why India came up in the interrogation. And this is something that I didn't have in my article. Since then, it has come to my attention that there was a whole whisper campaign in Pakistan that Khan was in bed with the Indians. And it goes back to at least 1998. What you see here is a passage from an op-ed by Munarak Mitkhan (ph) from May 1998, in which he said: India restarted its centrifuge enrichment program in the late 1970s using strikingly similar technology to that which Pakistan had adopted, which is a strange coincidence. (Laughter.)

Now we have here an interview from June 1998, in which the first chief technical officer of the Pakistani enrichment program gave this interview to an Indian newspaper. And he describes how, sometime around 1980, the representatives of an unnamed Arab government approached Khan and tried to get him in their pay. And Khan turned around to his senior technical staff – according to this guy, Ghulam Dastigar Alam – and said, you know, guys, can – how can we respond to this? And he didn't talk to the government; he talked to his technical staff. So clearly he was contemplating it. And Alam claims that he, Alam, said: You know, they'll find out; we'll be traitors. And what if this country then gives it to the Indians? What happens then?

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Now, is this a faithful rendition of a conversation in 1980? I don't know. But it's an article that was – it was an interview that was given in 1998, so the issue was, at a minimum, on Alam's mind in 1998. So we can see that people who were involved in the Pakistani nuclear program had drawn this connection and were starting to talk about it. Khan, by the way, was so outraged by this interview that he threatened to resign unless the government investigated it. So – and again, we have a nice blank spot, which is probably all for the best.

So the question is, is this story about, maybe the people in Dubai gave centrifuge designs to the Indians – is that plausible? Is there anything to it? Is there anything else that would point to this? Well, maybe. In 2006 through 2008, ISIS – the Institute for – I'm sorry, I'm blanking –

MR. : Science and International Security.

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MR. POLLACK: – thank you – published a really striking series of reports on how the Indian centrifuge program supplied itself: that they used newspaper advertisements to buy components, and they were basically connected to suppliers all around the world; and that they put aspects of their centrifuge designs out there. They made them available to potential suppliers.

So when we look at the specifications from Indian newspaper advertisements, and we look at the pictures which appear in redacted form at the ISIS website – the pictures of the centrifuge design, the blueprints – what we can see is that in – around 2006, 2007, the type of centrifuges that the Indians were procuring were very distinctive. The rotor, which is the major component that spins in the middle; it's a – it's a tube, was made of margin steel. And it was flow-formed, thinned and then given a single convolution around the midpoint of its circumference. Now that convolution is called the bellows, and usually in a centrifuge the bellows is a separate component that joins two rotor segments – two tube segments. But in this design, it's formed directly on the body of the rotor.

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I spoke with two centrifuge proliferation experts about this. One was Scott Kemp of Princeton. He told me that he was not familiar with any other centrifuge that had a rotor design like that, except for the Urenco G2 centrifuge and Pakistan's copy of it, the P2. I also spoke with David Albright about it, and he said he was pretty – fairly convinced that it was, in fact, derived from Urenco technology. So he went a step further than Kemp.

Now, I should say that the Indian design is not identical to the G2. It is not. It is – the tube is narrower, its walls are thicker and there are some other differences as well. It appears to be more prone to failure. So it is actually something of a substandard copy of the G2.

Now there's more than one way that this centrifuge design could have come into existence. It may have had nothing to do with Khan. But its presence in India, at a minimum, appears consistent with Khan's half-admission to his interrogators. And a potential explanation for the deficiencies of the design – or let's say the apparent deficiencies – might be Khan's habit of providing incomplete and defective information to his customers, especially those whom he did not wish to succeed. And we have another blank slide.

[00:39:12]

Now, I will not dwell on this. I'll just say that we should bear a few points in mind about this. First, India's centrifuge program is indigenous. It actually started before Pakistan's, so it is not a copy of Pakistan's, at least not originally. Along the way, it appears to have incorporated some foreign origin design information and equipment. And third, it doesn't seem to involve any exact copies of foreign centrifuge designs.

Nevertheless, India appears to be the strongest candidate for the Khan network's fourth customer. Again, for these reasons, Khan could do anything he wanted. He could rationalize it. No one had control over him, really. Others in Pakistan who were knowledgeable in the nuclear field suspected it, although we could suspect them of having scores to settle with Khan too. There was the flow meter transaction from South Africa, so there was supply of components that may have been autonomous from Khan and maybe not. Khan's flimsy excuses – that raises a lot of questions; the centrifuge design information, which is consistent with those excuses at a minimum.

[00:40:26]

And then, I think a particular point – the identity of the fourth customer was sensitive. Khan did not acknowledge it existed, even in his letter for safekeeping to his wife. Within the network, everyone said, "The fourth customer," and didn't name it. Why is that? Why couldn't they name or admit to the fourth customer? I would suggest it would – it would damage Khan's paramount value, which is his image in the eyes of Pakistanis, as the champion of Pakistan and the savior of Pakistan against the Indian nuclear menace. And for all of these reasons, that's why it may be Indian. Now, do we really know? No, we don't really know. Let's not make too much of it. There's a lot that remains unknown, but this seems to be the most likely case.

Now, I will just end my remarks with two little things. A.Q. Khan reads everything that's published about him. He refers to it in his interviews all the time. He cites chapter and verse, well, practically.

My article appeared, I think, on December 19th online and on newsstands – not in Pakistan. On December 23rd, many Indian news outlets described it in their reporting, Times of India, a few other publications. And on December 31st, the following item appeared – this is just the lead, the first paragraph – following item appeared on the Kyoto newswire. Khan has a longstanding relationship with a Kyoto correspondent in Pakistan.

So Khan, who actually had had a major spinal surgery in early December and was at home recovering from it, called up the Kyoto correspondent in Islamabad and told him: Hey, did you know that the Syrians approached me in 1980 and 2002? Did I ever mention that? And so this seems to be the unnamed Arab government that Alam was talking about. So he denies supplying the Syrians with everything, but he just seems to have raised this issue out of the blue. Hey, what do you know? So that's interesting. What leads this to come up?

[00:42:58]

Also, Khan has a syndicated weekly column, which appears in Urdu and English. And on January 2nd, his column was devoted to the subject of selling of ethics and morality, and the country seller who sells the pride, respect, dignity, sovereignty, and assets of his country. It turns out what he's getting at is Pervez Musharraf, and specifically Pervez Musharraf's memoir. So he wants to knock down the memoir, which was published in 2006. It's now 2012. So he says that Musharraf got millions of dollars from the Americans to write this autobiography. It's full of false claims and outright lies. OK?

So I don't think he really wants to acknowledge the article. He often does that in his columns when he wants to attack something, doesn't really want to – you know, he likes to do without drawing attention to it. And this, by the way, was about a week before Pervez Musharraf announced his intention to return to Pakistan and run for the presidency, so this was not a response to that. That came later.

[00:44:09]

So I think that's what's going on here. I will leave you with the first two paragraphs of the same column, in which Khan talks about one of his favorite historical figures. And he really seems to be talking about himself, about this poet who had a guilty conscience because he felt he had sold his knowledge, but he really was a patriot. He had written rebellious poems against the British. He went to jail. But you see, he sold his knowledge because he sold some song lyrics to Bollywood. And he felt bad about it. He regretted having done it, and he never, never worked for pay again. Interesting.

(Inaudible.) I think we're done.

[00:44:52]

DR. PERKOVICH: Thank you, Josh. That was quite a(n) extraordinary presentation. (Applause.)

We've got a couple of comments, and then I want to open it to discussion. I just – one set is, Toby and I were recently, along with our colleague, Li Bin, in Pakistan. And since you had published this article, in discussions we had with senior people that they tended to affirm what you were saying, what they David Albright has said and what Musharraf in this instance said that, you know, the degree to which Khan was mostly on his own.

And in fact, one very senior former person who would have known, whose business is what – (inaudible) – said it was, you know, they did – there was lots of counterintelligence. They were very concerned over the years about security, but no one ever thought the boss would be the problem. And so then, after this, they had to rethink and redesign their intelligence and counterintelligence work, because it was the idea that the head of something would be doing this just never occurred to them.

[00:46:04]

Another thing that I would want to discuss and maybe some of the – our colleagues in the audience could add, is that my sense, when we raise this in discussions and the reaction we got was: Yeah, I mean, it's very plausible. There's a certain amount of satisfaction; I mean, this may not be the scandal in Pakistan that it would first occur, because there may be a certain satisfaction that the kind of self-righteous superior Indians were actually needing your know-how. And they're all hoi polloi and pure, and the Americans say they have an impeccable nonproliferation, but they're out in the alley kind of slumming around with the Khan network. There's a certain satisfaction in that, I think, amongst some.

So I mean, I could expect that there actually wouldn't be a huge backlash because the psychology of the Indians actually needing something from you is very important.

A third point – and I – and hopefully in the discussion you can bring this out – he didn't talk about the missile competition between the Khan Research Labs and the Atomic Energy Commission. So in the nuclear domain, you did talk about and you quoted Munir Ahmed Khan, who was the head of the Pakistani Atomic Energy Commission and was a bitter rival of A.Q. Khan, who ran the Khan Research Laboratory, and we can talk about that. But there was also two competing missile programs. And it used to be said – and I just want to get your views on this – that, I mean – and the Khan Research Labs' missile program was derived from North Korean technology –

[00:47:44]

MR. POLLACK: Correct.

DR. PERKOVICH: -- whereas the Atomic Energy missile program derived from Chinese technology. So one of the comments that used to be made about the Khan network transfer to North Korea was it was a return for missile technology and something related to the missile program, and particularly the gallery and – so anyway, I would love you to comment on it.

And the last point, again, is a question. I've been struck also by the Indian – the reaction in the Indian (press to ?) which, to what I've seen, mostly was – well, it was in Playboy. (Laughter.) But I don't know that anybody's actually asked the government of India to comment or if the government of India has made a comment. But did – if this is true, would the – would India have done anything wrong? It's not a member of the NPT. By my understanding, its enrichment is mostly to produce fuel for its nuclear power submarine. But – so perhaps address even if it was true, is, you know, is there is something wrong in what India did?

[00:48:55]

MR. POLLACK: OK. Fair question. OK. There are – there are three questions there or comments.

The Pakistani sense of quiet satisfaction over this story. Well, it's very quiet. They're not saying much at all. (Laughter.) The one thing I get just from reading Twitter and the like is a sense of incredulity from the netizens, so to speak. I think Khan himself would get some satisfaction out of it. He liked to talk about the superiority of the Indian plutonium program, because that was his way of bashing his rivals in the Pakistani Atomic Energy Commission. And he liked to talk about the superiority of the Pakistani enrichment program, because that was his way of underlining his own specialness. And so yeah, I think he would have been pretty pleased about it. And you don't know what's going through his mind, but the short – long-short is, yes, I think there's certainly grounds for a little schadenfreude.

[00:50:08]

Missile competition. This is an interesting story that actually gets to the whole self-glorification of Khan. Khan claims that the North Koreans came to KRL in 1992 or 1993 to begin training his staff in the production of liquid-fueled missile engines, rocket engines, that go in what the U.S. intelligence community and the press call the No-Dong missile. Khan named it the Ghauri missile. Why did he call it that? Well, he claims descent from one of the generals of Sultan Shahabuddin Ghauri, who was the medieval Muslim Afghan conqueror of what is now Pakistan and northern India. And he had a memorial tomb built for Sultan Ghauri, in which, according to some accounts, his portrait hangs side by side with Ghauri's. (Laughter.) So this was his way of sort of, again, making a statement of superiority over of the Indians.

Now, but this – there's this question of was there a barter or a swap involved with the acquisition of missile technology from North Korea and the supply of enrichment technology from Pakistan to North Korea. Well, basically, there are many competing versions. It's difficult to sort out all the threads. General Musharraf, the late Benazir Bhutto claimed that it was – that these transactions were done for cash. They were – they were separate. However, Bhutto also appears to have more quietly acknowledged to a journalist friend that, actually, she had carried some CDs to North Korea in, I believe, late 1993 – don't quote me on that – in an attempt to facilitate the missile deal, at the request of the military, because she had known Kim Il-Sung from her father's foreign travels when her father was prime minister of Pakistan.

[00:52:39]

So there's – it's murky. I think that there is some evidence to suggest actually that Khan's dealings with the North Koreans and his supply of enrichment technology to North Korea actually dates back not from the mid-90s, but back to the late 80s, at the latest. We know relatively little about it, but there's a little bit of information that's been published that points to this. And he seems to have given them the same poor treatment that he gave to his other customers at that time, and relations soured. But when the Pakistani military agreed to pursue this North Korean missile, the terms of the relationship changed. So when the North Koreans indicated that they were interested in the enrichment technology, according to Khan, he turned around and supplied it to them. And this may have been done in lieu of payment, because they couldn't make a payment on the missile technology. That's one possibility. It may have been something that the parties had in mind all along. That's another possibility.

But it does appear to have been an exchange to the point that in the mid to late '90s, the same aircraft would bring missile components and supplies from North Korea and leave, return to North Korea with centrifuge components or possibly other types of information. So it became pretty tightly coupled by, oh, let's say, 1998. But did it start off that way? It's murky. It's hard to say.

[00:54:21]

And then, there's this question of did India do anything wrong? Well, when India was outside of the global nonproliferation regime – and it's sort of caught betwixt in

between now – half in, half out – I don't think if this actually happened that they would have dishonored any of their international commitments. There may be some intellectual property concerns because these technologies, these designs were the property of the Urenco Consortium in Germany, Netherlands, and Britain. So that is a potential concern.

But in terms of nonproliferation agreements, I don't know. I would say that looking towards the future, the picture's a little more complicated. India seems to be interested in joining the Nuclear Suppliers Group. And the Nuclear Suppliers Group has its own standards for membership, including the idea that a candidate country is likeminded, that it has similar interests in the nonproliferation regime. Well, if India has centrifuge plans full of stolen Urenco technology that it's not acknowledging, well, at a minimum, it's embarrassing.

[00:55:50]

And this is also just a bilateral issue for nuclear cooperation. I'll give you two examples. The Australians recently in November and December became the latest of a series of countries to agree to supply uranium to India. This was controversial in Australia because they're members of the Southeast Asia Nuclear-Weapons-Free Zone Treaty, which says that basically you don't supply nuclear materials to countries that are not members of the Non-Proliferation Treaty and that don't have the safeguards that go along with that so-called full-scope safeguards. And India doesn't have that. So the Australian government has justified this shift by saying: Well, look, India has very good nonproliferation credentials. They're not like, you know, Pakistan, with all of its problematic – with its problematic proliferation record. Well, if it really is the case that India was on the other side of the same transactions that have damned Pakistan in the eyes of Australia and other countries, that makes that distinction a little harder to uphold. So at a minimum, that's embarrassing.

Now, the Indians, of course, have done some substantive things in preparation for a – the nuclear cooperation agreement with the United States. They've divided their facilities into military and civilian. All the civilian facilities will be under IAEA safeguards. So the Indians have taken a number of steps to bring themselves into alignment or at least, let's say, greater alignment with the nuclear nonproliferation regime. So this distinction is not purely based on Khan is bad and therefore Pakistan is bad, but India is OK, because they didn't do anything like that. There's more to it than that. But it – maybe the Australians should rethink their rationale.

[00:57:52]

Then, there's questions of other countries – countries whose technology was acquired by the Khan network. I'll give you an example – Japan, which is looking into a nuclear cooperation agreement with India right now. Well, A.Q. Khan looted Japanese industry for decades. He had a trading company partner in Japan that bought high-tech equipment from the – all over Japanese industry. So ring magnets and maraging steel and advanced machine tools all flowed from Japanese industry into the Khan network. So where did it all wind up? Nobody knows. (Is ?) some of that in India, as in Indian centrifuge plants; if I were the government of Japan, I might be curious about that before I sign that nuclear cooperation agreement.

Now, maybe their response would be “don’t ask, don’t tell” – I don’t know. That’s up to them. But I think it’s food for thought.

DR. PERKOVICH: Great. That was very interesting.

Let’s open it up for questions. I’m going to take several at a time, and then you can kind of weave together questions and answers, just because we don’t have a lot of time. But – questions – and then they’ll be some, I think, from people in the overflow room that are going to be brought in on paper – but anybody with questions. And if you do have a question – we’ll start with you, sir – please introduce yourself as well. Wait, the mic is coming. Right on your left side, there you go.

[00:59:34]

Q: Dave Isenberg, Huffington Post. Putting aside the issue of psychology, that supposedly superior Indians having to take their resources (from ?) the Pakistanis, wouldn’t the fact that the traditional trepidation, hostility of Pakistanis toward India, the archenemy, outweigh anything else, and thus give the Pakistanis every reason to no longer shelter Khan and protect them, you know, from, say, interrogation by Americans and other services?

MR. POLLACK: That’s a really good question.

DR. PERKOVICH: Wait, wait, wait. (Inaudible.)

MR. POLLACK: OK, go ahead.

DR. PERKOVICH: The guy with the beard. You have to introduce yourself.

Q: I’m Jonathan Pollack. I take some credit for this, but – (laughter).

DR. PERKOVICH: As well you should.

[01:00:27]

Q: (Chuckles.) Thank you. Josh, a question that arises in light of these various and sundry supply networks, do they persist? Do we have any kind of basis to draw conclusions how – in the absence of the great man? Or is there enough of an imbedded set of relationships here that, even indirectly, we still see a lot of activities on the part of some of those who were involved in these – in these propositions?

DR. PERKOVICH: Another great – another great question. I – we’ll take one more in this first round. Yes, sir. He’s right here, Zoe.

Q: Midshipman 2nd Class Robinson, U.S. Naval Academy. Hypothetically speaking, say Iran obtains the bomb. Do you think it’s likely that Saudi Arabia may want to obtain the bomb as well? And if so, how long do you think it would be before they acquired one?

[01:01:23]

DR. PERKOVICH: Great. All right, those are three good questions.

MR. POLLACK: OK. Well, let's start with David Isenberg's. That's a really good question. Lieutenant General Kidwai – who is retired lieutenant general now, is the head of the strategic plans division, which is Pakistan's nuclear security organization – told the Pakistani news media in 2008, when Khan was starting to give interviews again, was being very outspoken and was changing his story and blaming the military for everything again, he made a point that Khan's pardon from Musharraf was conditioned on two points: One was that he not say anything to damage national security. The other was that no evidence of a fourth customer emerge.

[01:02:15]

So he was clearly talking about Khan's big mouth. And what was – he's saying things that could damage national security at the time. In the end, they – the military and Khan – fought to a draw in the courts, and that leaves us with the current stalemate where he's not exactly under house arrest, but he's not exactly free to move around either. And he talks a lot to the media, even though he's not, strictly speaking, supposed to.

Well – are you asking me, is this grounds to revisit his pardon? Could be. That's up to – that's up to the Pakistani authorities. I think it's a very fair question, as I'd say there's plenty of evidence that there is a fourth country – fourth customer.

Now, Dr. Pollack asked about the persistence of supply networks. Well, we don't know about the Khan network specifically. But there's every reason to think that the Pakistani centrifuge program is alive and well. They don't produce everything they need domestically, so they continue to procure. The question is, is that being diverted elsewhere? You know, is Pakistan still a proliferator after Khan? I see no evidence of that, but how would I know? I don't think so. I think they're probably very cautious about this stuff. I certainly hope not. I don't see any reason to think so but, you know, that's subject to amendment, I suppose.

[01:03:47]

And they're not the only ones. Everyone has their own procurement network. The Indians, I think, are a little more cautious these days. I don't know if they're still using newspaper advertisements. But everyone has their way of getting things who's not exactly on the inside of the – or who's not a member of the nuclear suppliers group, let's just say. And that includes, of course, the North Koreans and the Iranians as well.

And that leads us to Midshipman 2nd Class Robinson's question – if Iran gets the bomb. You know, I think it may be not necessarily the right question. For a decade now they have been hedging, where they seem to be saying, through their actions: Look at what I could do. I could get the bomb. And through their words saying, oh, we don't want the bomb. So they seem to be engaging in a posture of nuclear opacity, which is similar to what the Israelis do. It's similar to what the Indians and Pakistanis used to do – until the nuclear

tests of 1998 – similar to what the South Africans used to do, until they gave up the bomb in the early '90s.

[01:05:05]

They're doing it inside the nuclear nonproliferation treaty, which raises all kinds of complications and difficulties. I would suggest that with Iran doing this hedging, the Saudis and others in the region have every reason to start doing the same hedging themselves, without waiting for Iran to break out of the treaty and test a nuclear bomb. So what maybe we want to think about is not a nuclear arms race, but a nuclear hedge race – not my phrase, I've heard that many times before – where there's a lot of acquisition of nuclear technology, supply arrangements, in an attempt to create options for the future.

[01:05:45]

Now, if the Iranians were to pull out and – of the NPT and test a device and declare themselves a nuclear weapons power – and let's not rule that out – yeah, I think the Saudis would want to consider their options. And what could they do to do it? You know, there are many ways that countries seek security in a nuclear era.

One is to get the bomb yourself; the other is to form relationships with those who have it. You could look at how the Germans and others in NATO have done it. They've brought U.S. nuclear weapons onto their soil, even though they're inside the NPT. That's one possibility. There are a whole variety of approaches. So they don't necessarily have to make their own. But we can't rule that out either. If Iran were to leave the NPT, I don't know what would happen to the NPT.

DR. PERKOVICH: And we've got two questions from outside the room. And so let me read both of them. One is from Nate Wilson from the U.S. Institute of Peace. And he asks: If it was proven beyond a reasonable doubt that India was A.Q. Khan's fourth customer, what kind of implications would this have for the U.S.-India relationship and the NPT regime more generally? So that's one.

[01:07:05]

And two is from Midshipman 1st Class Rathore (sp) – if I'm – I may be mispronouncing it, in which case I apologize. He says: Is there evidence that would dismiss the possibility that the fourth customer is a private organization or even A.Q. Khan himself?

MR. POLLACK: Well, we'll start with implications for the U.S.-Indian relationship. Well, I don't know that we're ever going to get to the point where it's incontrovertibly proven. The Indian centrifuge program is very secretive. They don't really allow looks inside it. They don't talk about it in more than very general and limited terms, just occasional details. They're more talkative about it now than they were 10 years ago, but still not much. You know, only if someone in the Pakistani nuclear complex were to confirm it could we – could we really get to that point perhaps, and I don't anticipate that happening.

But let's try on the hypothetical for size anyhow. I think it would be very embarrassing. I think it would be used by the opponents of U.S.-Indian nuclear relations to discredit the project. You're – it's – there's already – in a sense, there's already enough information here that I think you're going to hear about it in that context. People are going to say, well – in fact, we're already seeing early versions of that – saying, well, there's – you know, we don't know, but it doesn't look good. And this is not – this is – we would have to rethink.

[01:09:04]

So maybe the – maybe we shouldn't talk about incontrovertible proofs. Maybe we should say that the burden is on the Indian Department of Atomic Energy to deny it and to provide credible disclosures about the origins of their uranium enrichment technology, if they care to deny it, that is. And maybe they can't deny it. But that's what I'd like to see, is some sort of representation from the Indians about this, maybe just to clear this up, because they're certainly not the only possibility for fourth customer. I could name some others as well. In fact, I have, today. So – and I think there's a good opportunity for them to clear this up so we never get to that point, and that maybe is more important than hypotheticals about incontrovertible proof, which is probably not going to happen in this lifetime.

[01:10:03]

You know, evidence of private organizations – well, this is the nonstate actor question. There have been some concerns about al-Qaida certainly seeking enrichment technology. Before Khan was arrested, two Pakistani nuclear scientists were placed under house arrest for having gone to Afghanistan and met with Osama bin Laden. And one of them, in fact, was Khan's predecessor as the head of the Pakistani enrichment program for a year or so before Khan displaced him.

I believe it's George Tenet's memoirs – the former director of Central Intelligence in his memoir claimed that there was some evidence that al-Qaida had attempted to approach Khan and that he had rejected their advances – some evidence. It's unclear. So, you know, I – again, I don't think Khan is that irresponsible, to be honest. He – I don't think he would go that far.

If by private organizations you mean something different, well, I don't know. As for Khan himself, you know, he had control of kind of research labs for all the years between 1976 through early 2001. And, you know, he had all kinds of things there, and in effect, there wasn't much distinction between Khan the man and KRL for many years. So it's almost a distinction without a difference.

[01:11:50]

DR. PERKOVICH: I'm going to take a question from Tom Cochran, and this lady – you ladies here. But I would just point – put out back to the group or you, on the issue of would – if this were verified or otherwise, that India were the fourth customer, how would it affect, you know, relations with the U.S. and so forth?

My sense is, among the big advocates of the U.S.-India deal, not very relevant. I mean, the whole point is to help India to become a great power, major power. The argument would be, well, going to sea and building submarines to carry a deterrent stabilizing, that's what they're doing with the enrichment and, you know, I mean, so boys will be boys. (Laughter, inaudible.) But we'll see.

Tom and then the young lady here.

[01:12:39]

Q: If you're postulating a fourth customer, why wouldn't you postulate any number of intelligence agencies attempting to be the fourth customer, including India, simply to learn something about the Khan network, rather than to procure technology?

MR. POLLACK: All right, I think that's –

DR. PERKOVICH: Wait, wait, wait, wait, wait, wait, and then this lady here in the green sweater here. The microphone's coming and please introduce yourself, thank you.

Q: Rachel Oswald, Global Security Newswire. Do you think it's more plausible, assuming that India was the fourth customer, that Khan knowingly dealt with them or that it was, you know, these Dubai middlemen that were doing it unbeknownst to Khan, and that he would have drawn a red line at dealing with India?

[01:13:24]

DR. PERKOVICH: OK. Great question.

MR. POLLACK: Well, I think I can answer these questions together, actually. It's very nice. You know, I think there is every reason to believe that Pakistan and India were interested in each other's nuclear programs, and they considered each other's enrichment programs sensitive. When they began exchanging lists of nuclear sites as part of an agreement to not bomb each other's nuclear sites in the event of war, both sides left off their centrifuge plants. So that says something about the special sensitivity of this issue.

So, yes, I think it's plausible that their intelligence services were hunting each other. One of the very interesting things actually that's buried in here is Munir Ahmad Khan's remarks about the Indian centrifuge program in 1998. How did he know any of that? Well, you know, probably he was getting intelligence briefings of some kind.

[01:14:27]

So yeah, that's quite plausible. And the Indians may have – may have seen themselves as penetrating the Khan network and acquiring its technology, perhaps through some of the folks in Dubai, who may indeed have had Indian connections. I would not rule that out. But that leads us to the question of would this have been done through Dubai or would have Khan known about it? Well, he talked about it in his interrogation, so he knew about it, at a minimum, after the fact. And I think his excuses are rather flimsy.

You could spin scenarios where he was operating his people in Dubai as double agents to feed trash to the Indians. I mean, this is – we're deep in the hypotheticals here and almost spy-novel stuff. I wouldn't rule it out. But sure he knew, he was talking about it in his interrogation, so at a minimum after the fact and probably while it was going on.

DR. PERKOVICH: (Background noise.) Sorry. Another round and that – I'm assuming you don't have any more out there, and so let's try, before we wrap up, to take this gentleman, that gentleman, and that gentleman and I think we will have gotten every raised hand. So thank you. Yes, sir.

[01:15:42]

Q: Thank you. Justin Anderson, SAIC. Josh, I was wondering if you could provide a little further background on a couple of the components of this multinational network and their fate following A.Q. Khan's fall from grace. In particular, what was the outcome of the South African court case? Were any more details released as to the actual technology or components, perhaps beyond flow meters, that might have gone to India? That's one. And then the second, the very interesting components manufacturing factory in Malaysia: What happened to it later? Any further details you can shed on that part of the network?

MR. POLLACK: Thank you.

DR. PERKOVICH: Hold your fire. Could you just pass it to your right? Sorry – there you go. Thank you.

[01:16:24]

Q: Josh, terrific presentation.

MR. POLLACK: Thank you.

Q: Aaron Mannes, University of Maryland. You said something interesting, that it never occurred to Pakistani intelligence that the boss might be in on a scheme like this. And what I'm wondering is how credible is that, knowing how A.Q. Khan got his start? As I recall, was he not – I mean, just – double-check me if I'm wrong, but didn't he basically steal designs from European companies, and certainly the Pakistani intelligence knew this. So is it plausible that they didn't think maybe we should keep an eye on this guy?

DR. PERKOVICH: Yeah. And this gentleman. Sorry.

Q: Yeah, Jon Lindbergh (sp), U.S. Naval Academy. Do you believe him – believe Khan when he says he was – he was selling junk to the – and cheating the Libyans and the Iranians? And whether he – whether you do or don't, whether he was or wasn't, how does he explain his motives? Was he trying – was he – did he want to be a good global citizen or was he just trying to make some money?

[01:17:25]

DR. PERKOVICH: Great. We're going to have to – I'm sorry, we're going to have to cut it off there – with Josh's answers – but that's all the questions we can take.

MR. POLLACK: Well, we'll start with Dr. Anderson. In the case of the South Africans, actually the major thing produced in South Africa was the piping for centrifuge plants. They built rather elaborate sets of piping that was intended for the Libyan centrifuge program. And they had actually produced similar things for Pakistan previously – possibly for some of the other customers as well, but we don't know. The Libyan contract appears to have been far and away the biggest. Now, the – other than, again Pakistan, itself.

[01:18:14]

The Malaysia factory – very interesting question. This came about because B.S.A. Tahir, who was Khan's right-hand man in Dubai, was married to a Malaysian woman. And she was fairly well off, from a – is fairly well off, from a pretty prominent family. She was a minority investor in a company in Malaysia. And the majority investor was the son of the man who was, at the time, the prime minister of Malaysia.

So this was just an ideal place to situate a factory. Malaysia at the time had no export controls. It just – it was beautiful. It could not have been better. And one of the reasons that Khan was doing business in Dubai, in South Africa, in Malaysia, was lax or nonexistent export controls. So Tahir was interrogated by the Malaysian authorities. The Malaysian police published a statement very quickly describing his interrogation, in which he took the blame solely. Oh, it had nothing to do with Kamaluddin, the prime minister's son. He was not involved; he didn't know what was going on. It was me, me, me.

[01:19:35]

So at least in the official police version he took the fall, and nobody knew what they were involved in. They were just, you know, making things in this factory, and nobody knew what it was for – just industrial purposes. So not everything – in terms of shipments into Malaysia – not everything has been accounted for.

The Malaysian government apparently told the IAEA that some, you know, aluminum components were melted down – don't quote me on this, I don't remember the exact details. So there were some loose ends there, things that the IAEA could not verify. The Malaysians have been a little bit opaque about some of this, but I think, frankly, they were embarrassed by the whole thing – as well they should have been.

[01:20:26]

Aaron, you made reference to George's question about the boss. Well, this is a good question. I think Khan ran KRL as a fiefdom. He had military people around him, but they stayed with him their entire careers and they were loyal to him. So he had a lot of autonomy to move money and equipment around because he was acquiring stuff for Pakistan illicitly. And that seems to have given him a lot of liberty.

Again, this is why South Africa was so attractive to Khan, is they were acquiring stuff illicitly – (chuckles) – and so there were not a lot of controls on this stuff in South Africa. It's the same sort of logic. You can turn the intake valve, so to speak, into a two-way street if you're smart about this stuff. So yeah, I think – I think it's quite possible.

[01:21:21]

As for Khan's moral fiber, it's a good question. He built himself into a national hero, and he was built up by General Zia for his own purposes into a national hero, into the father of the Pakistani bomb, which is really just not the case. He had a role, but he wasn't THE man. He was running one piece of the infrastructure, maybe the most technically demanding piece, but still just one piece.

And he did not originate that program. And who is to say that it wouldn't have gone better under his predecessors if they had continued, we just don't know. That's a counterfactual. So his own claims to specialness and the willingness of the regime to endorse those claims for its own purposes and to turn him into a heroic figure made it difficult, I think, to question him or to control him.

To this day it is difficult. They've never made him available to any foreign agencies for questioning because you just can't touch this man who's become the symbol of Pakistan, who has found a way of accusing anyone who doubts him – turning them, even Munir Ahmad Khan, into some kind of traitor, CIA agent, this, that, the other. So I think it just became very difficult to touch him. He became very good at those kinds of manipulations.

[01:22:54]

Jon Lindbergh (sp) asked: Do I think it's true that Jon – that Khan was selling junk to most of his customers? Yeah, I do. I don't want to steal Scott Kemp's thunder. He's going to be publishing on this probably later this year and he's got a lot of detail. You can see hints of this in Khan's statement. You can see hints of it in the record of countries like Iran, which did its first supply deal with Khan in 1987, and I don't think spun any centrifuges until, hmm, 1999? That's a long time. But again, I don't want to go too far into this. It's really Scott's story to tell.

DR. PERKOVICH: Great. I want to thank all of you. I especially want to thank Josh. He – you see what I mean about a creative, deeply rigorous interesting researcher. I thought this was a tremendous presentation. I urge you to read the article. But so join me in thanking Josh –

MR. POLLACK: You can look at the pictures too.

DR. PERKOVICH: -- and (thanking yourself?). (Applause.)

(END)