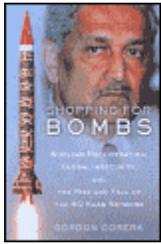




Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of A. Q. Khan's Nuclear Network

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Shopping for Bombs

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Introduction

JOANNE MYERS: Good afternoon. I'm Joanne Myers, Director of Public Affairs Programs. I am delighted to welcome so many old as well as new faces to the start of our new season at the Carnegie Council.

We have a very exciting fall planned for you, as evidenced by this, our first program, which is a spellbinding account of the rise and fall of one of the deadliest business empires in recent times. Gordon Corera is our speaker, and he will be discussing his book, [Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network](#).

Who is A.Q. Khan? Well, until very recently, his existence was only known to a select few. In Pakistan, where he has his home, he is revered as the "father of the bomb," the one man who delivered the sense of security and prestige that his country so desperately desired. But in the West, he is known as the world's leading black-market dealer in nuclear technology. He has been identified as not only the mastermind behind the theft and the sale of centrifuge designs that allowed Pakistan to build a nuclear arsenal, but as the one who was also responsible for erecting a global clandestine network that sold enrichment equipment and nuclear bomb designs to Iran, North Korea, and Libya.

For democratic nations, the spread of nuclear weapons is a nightmare. Proliferation heightens global insecurity and makes it more likely that a nuclear weapon will be used. Yet for many countries that face their own particular challenges, the bomb may represent the notion, real or imagined, of security. As the A.Q. Khan network has shown, when unstable and undeveloped nations find ways of acquiring the ultimate arms, the stakes of state-sponsored nuclear activity can soar to frightening heights.

In *Shopping for Bombs*, our guest this afternoon presents a chilling and riveting story of the rise and eventual fall of A.Q. Khan and his role in the devastating spread of nuclear technology over the last thirty years. This inside account is unique, as it provides a window into the challenges of stopping a new nuclear arms race, a race that Abdul Qadeer Khan himself did more than any other individual to promote.

Mr. Corera is one of those rare journalists who is not only a superb investigator, but one who is able to write about his findings in a compelling way. While his work is nonfiction, it reads like a page-turning mystery novel, or perhaps even a horror story, with each new revelation making us acutely aware of the frightening speed with which further proliferation could occur in the 21st century. For A.Q. Khan's network, far from being the exception, is likely to prove closer to the rule of how states will try to acquire nuclear, chemical, or biological weapons and related delivery systems in the coming years—which is to

say that rather than slowly developing their own technology, countries who seek such weapons and believe they can save time, money, and diplomatic capital by buying complete production facilities, as well as the know-how, will turn to those who are only too eager to sell the same.

Gordon Corera joined the BBC as a world-affairs researcher in 1997 and later became the foreign-affairs reporter on the Today Programme, which is BBC Radio 4's flagship news program. For the past two years, he has been the security correspondent for BBC News. In this role, he is responsible for covering counterterrorism, counter-proliferation, and international security issues. His insightful reports can be listened to on BBC TV and radio, and read online.

Our speaker has also served as a State Department correspondent based in Washington, D.C., as well as the U.S. affairs analyst for BBC News. He has reported from across the United States, Asia, Africa, and the Middle East, which included coverage of Iraq before and after the 2003 war, Guantanamo Bay, the Madrid and London bombings, and the September 11 attack.

Please join me in welcoming our guest today, Gordon Corera. We are delighted to have you kick off this program year. Thank you.

Remarks

GORDON CORERA: Thank you very much. And thank you very much for having me here to talk about the book.

In February 2003, a small team of officials from the International Atomic Energy Agency made their way across the plains of Iran to a place called [Natanz](#). It's a place we all know about now, but then it wasn't very well known, known mainly for its juicy pears, which are grown nearby. They were on their way to a site which the Iranians claimed was involved in studying agricultural desertification, but which an Iranian opposition group recently had said was the site of a secret Iranian nuclear program.

When those inspectors were taken into the site for the first time, they walked past a glass box containing a single centrifuge and then into a hall which had a cascade of these centrifuge machines set up. They were also shown a much larger hall nearby, with room for something like 50,000 centrifuge machines. One of the inspectors on that visit, a Finn called Ollie Heinonen, who had worked on Iran and nuclear issues for many years, was stunned by what he saw. The Iranians had moved far faster than anyone had ever suspected in their nuclear program. He asked his escort from the Iranian Atomic Energy Agency how they had managed it. "How have you done it?" he asked. "With information off the Internet," his escort replied. Ollie knew pretty quickly that that was impossible, to master that kind of technology off the Internet.

When a British inspector called Trevor Edwards saw the centrifuges for himself, he immediately knew how the Iranians had done it and how they had made this huge advance. Every single detail of the centrifuges he saw, down to the millimeter, down to the exact tolerances of the different parts, was identical to models he remembered from nearly thirty years earlier, when he had been working at a place called Urenco, which is a uranium enrichment facility based in the Netherlands, run jointly by a number of European countries. Trevor Edwards knew exactly, as well, where Iran had got its help from, because at the same time that he had been working at Urenco, in the early 1970s, so had a young Pakistani scientist called Abdul Qadeer Khan. As other people at the time knew, Khan had stolen those designs, from Urenco and used them to build Pakistan's own nuclear program.

Now, as these inspectors were inside Natanz for the first time, it was also clear to them that Khan had done much more than build Pakistan's own program. He had been selling or passing on that technology to other countries as well.

That visit to Natanz was one of a number of events which led to the downfall of A.Q. Khan. The most important would come in December of 2003, a few months later, when Libya's [Colonel Gadaffi](#) surprised

everyone by giving up something most people didn't know he had, which was an active nuclear weapons program. The finger again pointed directly at A.Q. Khan as being responsible for that.

A few months earlier, here in New York, CIA director [George Tenet](#) had confronted [President Musharraf](#) of Pakistan in a hotel room nearby with the details of Khan's activities, to try to persuade him to put Khan out of business. A few months later, at the end of January 2004, a phone call from U.S. Secretary of State [Colin Powell](#) to Musharraf would signal the end of Khan's career and put him out of business.

It was the Libya announcement in December 2003 which got me interested in A.Q. Khan. I remember watching it on the TV news on the BBC that night and being mystified, frankly, by the Libyan announcement. All of a sudden, here out of the blue was [Tony Blair](#) saying, "Well, the Libyans are giving up their weapons program." As I said, most people didn't even know that they had an active nuclear weapons program. So I started to do some reporting on how they got that program, how they put it together, and why they decided to give it up. That really led me into investigating the subject of A.Q. Khan and eventually to writing this book.

I realized, in doing that, that you could actually tell a large part of the story of the spread of nuclear weapons over the past thirty years through the story of A.Q. Khan: Pakistan's own program, North Korea, Iran, Libya, the emergence of a black market in nuclear technology. In so many of these stories, you find A.Q. Khan either center-stage or lurking in the shadows.

Khan's story also speaks to wider questions which relate to the future of nuclear proliferation and the options of how to stop it and deal with it, questions like:

- Why states seek nuclear weapons and how they might be persuaded to give them up.
- How good the intelligence on nuclear weapons is.
- The relationship between civilian nuclear technology and weapons programs.
- The question of how likely of being realised are the fears of nuclear weapons getting into the hands of non-state actors like terrorists.
- Whether the spread of nuclear weapons can be stopped, and whether the current system to restrain their spread is close to collapse.

All of these issues can be told in part through A.Q. Khan. Khan has really, in my mind, wreaked havoc on attempts to restrain the spread of nuclear technology. He has lowered the barriers of entry for the nuclear game. He has irreversibly changed the mechanics of supply and demand, and left a really damaging legacy.

What I would like to do is provide a brief overview of Khan's story and then quickly try to examine some of the key themes which come out of it.

So what is A.Q. Khan's story? At its inception, it's really a story of remarkable opportunism, of a man who from his perspective, was in the right place at the right time. He is a young scientist. He comes to Europe

to do his Ph.D. in metallurgy—not actually a nuclear science, specifically—and he lands a job at Urenco translating documents, just at the point at which Urenco is moving towards a new centrifuge. The centrifuge—just briefly to explain—is the machine which enriches uranium gas by spinning it at high speeds, in a very technologically precise process, to enrich it. If you enrich it to around 5 percent, you can use it as fuel for nuclear power. If you keep enriching it, it can become weapons material. The same centrifuge can do both tasks.

Urenco was introducing a new centrifuge, and Khan was translating some of the documents that went into it.

Just at this time, as he has got this job, back home in Pakistan the country is going through a crisis. In December 1971, it is defeated by India in a war, and the eastern part of Pakistan is ripped apart and becomes an independent Bangladesh. Pakistan feels its very survival is at stake. It feels it has no allies it can depend on. It feels that it's under threat from India and feels that the nuclear bomb is its only potential means of survival, particularly because it fears India might be developing its own bomb.

So the prime minister of Pakistan, [Zulfiqar Ali Bhutto](#), summons together his scientists and says, "I want you to build me a bomb." Khan doesn't necessarily know this at that point, but realizes that through his job at Urenco, he has access to something incredibly valuable—the most secret advanced designs that Europe has on centrifuge technology—and he writes a letter to Pakistan's prime minister saying, "I have something for you. I can help you." As simple as that. He writes a letter, goes to Pakistan, and is told, "We're interested. Go back and become a spy. Find the plans, get what you can."

So Khan goes back to Europe. He steals the centrifuge designs. His supporters and Khan himself would reject that idea, that they were stolen, and just say that he learned a lot of the expertise. But he didn't just take the designs; he learnt who made the parts for the Urenco centrifuge, who made every component, which business was supplying the different parts.

Khan returns, after a year, to Pakistan. He and his associates basically begin a purchasing campaign across Europe, tapping up Urenco's supplies. They would go to these businessmen in their homes, with the drawings, literally, taken from Urenco, and say to them, "We're quite interested in this part for a centrifuge. How much would it be?" Arbitrarily they would quote—let's pick a figure out of the blue—\$1,000. Khan and his people would say, "Okay, we'll give you \$1,500 for it," which is a pretty good way of getting businessmen on board and also getting them to realize that they might be on to a good thing and it might be worth keeping quiet about what they are doing.

So Khan builds this business network, primarily in Europe, of businessmen willing to supply these parts. This is all at this point going into Pakistan, into its own nuclear program. Khan builds a global procurement network, which is evolving, shifting, trying to evade export controls, evade the prying eyes of intelligence agencies. By the mid-to-late 1980s, Pakistan effectively had the technology up and running to make its own bomb. It doesn't test until 1998, of course, but it effectively has the bomb from the late 1980s. When Pakistan does test in 1998, Khan is a national hero. He is a hero because he has brought security to his people by bringing them the bomb.

By the time of that test in 1998, Khan has also been doing something which very few people would have known about, which is also becoming a salesman rather than just a procurer for Pakistan's own bomb, twisting that network he has built up for procurement from importing into Pakistan to exporting out to other countries and customers. That was a process that really started in the mid-1980s, as he began to offer some of these designs and the expertise.

The first major deal that we know about was with Iran and took place in a hotel room in Dubai in 1987. Iranian officials paid around about \$3 million for a set of designs. Iran then tried to buy the parts to build its own centrifuges, but it struggled and, around 1993, got back in touch with the Khan network and this time signed up for a bigger deal of actual centrifuge machines and parts. The relationship with Iran continued on and off until about 1999. That was the last known contact. From 1995, the Iranians moved

their centrifuge research to a place called the Kalaye Electric Company, which is a kind of semi-state, hidden front company in the suburbs of Tehran, where they started building these centrifuges. That becomes the foundation for what is discovered in Natanz and what really is the focus of the current tension over the Iranian nuclear program.

Khan was also offering the designs to others. He offered them to Iraq. Interestingly enough, in 1990, he offered to Iraq and the Iraqis didn't bite on his offer, in part because they actually seemed, we think, to believe that it was a sting by Western intelligence agencies. He was also in touch with Syria, where the contacts are murkier.

In the early 1990s, Pakistan and Khan are in search of missile technology, and he begins to travel to North Korea and, in this case, seems to do a trade of North Korean missile technology, the Nodong missile, in return for the centrifuge technology that Khan has. That barter, that trade, picks up pace, particularly as the 1990s go on.

Also in the mid-to-late 1990s, he cuts the biggest deal, from his point of view, which is with Libya—a huge program, completely different, really, from the Iranian and North Korean deals. Those were for parts, designs. What the Libyans want, what Colonel Gaddafi wants, is everything, from beginning to end—the turnkey program, thousands of the most advanced centrifuges, designs, machines to build more centrifuges, everything.

The Libya deal marks a step up for the Khan network. The network expands in scope and becomes more globalized. It sets up factories and production points in Malaysia, in South Africa, in Turkey. Dubai becomes a hub to which parts from around the world are routed and then sent on to Libya. That growth, that ambition, that hubris of Khan really leads to his downfall.

The CIA and MI6, Britain's intelligence agency, begin to spy that something is up in the late 1990s, for a variety of reasons. They begin to target aggressively the big business network around Khan and realize something is going on, with Libya and, particularly, North Korea. From about 2000, they have a reasonably good idea that there is a deal going on between Khan and Libya.

But there is a problem: How to bring Khan down. He is a national hero in Pakistan. He is well-protected by the Pakistani government and has a huge reputation. Also 9/11 transformed the relationship between the United States and Pakistan. Islamabad becomes hugely important in fighting al Qaeda. The buildup to the war with Iraq also serves as a distraction, to some extent, from Khan and his customers. Of course, it is in 2002 that the Iranian nuclear program is first revealed at a press conference in Washington by an opposition group. The North Korean proto-enrichment program, which is supplied by Khan, also is revealed in late 2002. But, of course, they are overshadowed by the buildup to the war in Iraq.

There is a very vigorous debate over this period between the U.S. and the U.K., between intelligence officials and between diplomats, about exactly how to stop Khan. The problem is, knowing something is not the same as knowing how to stop it. Lots of options are looked at: Should they try covert action in Malaysia and blow up some of the plants? That's one thing they look at and rule out. How do they make sure that they actually stop all the businessmen everywhere? How do you persuade governments around the world that this intelligence, this time, is real and is worth acting on?

The debate gets pretty stuck, until they get a lucky break, when one of the network's customers, Libya, decides, for its own reasons—and maybe we can go into that later—to give up the program, to come clean. That starts a very complicated process, eventually leading to that declaration in December 2003 and, as I said, eventually to the end of Khan, in a deal in which he is forced to confess his sins. But in return, he receives a pardon. A deal is struck in which he is put under house arrest in Islamabad, but it is agreed that he is not going to be handed over to anyone else, particularly to the Americans. It is in that house in Islamabad that he remains to this day.

That's a brief overview of the story. I will quickly just look at a couple of the questions which come out of

this.

Why did Khan do it? A very interesting question, one I kept asking people who knew Khan, had met him, had worked for him. Why did he do it? One answer would be greed. Was it simply money? That's partly true. Particularly for the businessmen around Khan, you might think money was the main reason. But for Khan himself, I don't really buy that. I think he was getting rich and he could have gotten very rich purely on the kickbacks of building Pakistan's own program. He didn't necessarily need to take the risks of selling it.

I think he was motivated, to a large extent, by resentment against the West and the nonproliferation system. This began, really, in the late 1970s, when Western nations tried to stop him building Pakistan's own bomb and led him to really hate the idea of there being an exclusive club or cartel of nuclear nations, nuclear weapons states, telling others that they couldn't have the bomb, even if they believed they needed it for their own security. He hated that system, and I think he wanted to break it. In his mind, spreading the bomb, as well as serving other tactical advantages, helped break that system. That's part of what he wanted to do.

Did he act alone? Was he a rogue actor or was it the case of a rogue state? The first thing I would say is it's very much the story of a network, not just one man. As I said, the businessmen are very important. For instance, that 1987 deal in Iran. Khan wasn't actually at the deal. Some of his representatives were. Actually, it was a number of European businessmen who were there. Khan actually received less than a quarter of the proceeds of that deal in 1987. The businessmen looked like they were actually driving the deal, to a large extent. They had worked out that there was money to be made in selling this technology. They had made it supplying Pakistan. They had worked out, "Why not find some other customers, some other countries, where we can make some money?" Khan was, effectively, a dealmaker for these businessmen. Some of these businessmen do look like key figures.

Was he a lone actor? Was he an agent for Pakistan? That's a very controversial question, particularly the Pakistan government. On the whole, I do think he was a lone actor. Each deal was different. Some, like the North Korean barter, I think Pakistani officials had a pretty good idea about. In other cases, like Libya, it's much more of a private-sector model. But often the relationship between some of these individuals and the states is quite ambiguous.

Khan operated within rings of proliferation which operate between rogue states, who share, swap, sell, barter missile technology, nuclear technology. You often have individuals given license by their state, who have ambiguous relationships with different parts of the state and who are sponsored by one part and not the other. I think that continues. Khan fits into that category, where it's quite hard to always pin down who knew what. Was he ordered to do it? Was he doing it himself? Did he exceed, maybe, the authority he was given, in a move to enrich himself or to fulfill his own priorities through an existing state relationship?

Was there an intelligence failure? Could he have been stopped earlier? Some say this was a huge failure, because he operated for so long—thirty years, nearly. Others say it's a success, because, actually, he was put out of business pretty effectively.

I think you have to break down the answer. I will try to do that briefly. There are a few different failures and successes.

There was a failure at the start in the Netherlands of security, of lax security, and underestimating A.Q. Khan and what he could do—generally underestimating, actually, what developing nations could do with the technology. People simply didn't believe these countries could ever make a bomb or master enrichment technology. It is also suspected that a number of the security agencies in the Netherlands—as well as the CIA—had their eye on Khan at this point, but never really thought it was worth stopping him.

Secondly, there was a general European failure of intelligence. I think everyone always assumes that an

intelligence failure must be a U.S. failure. I think there was a pretty big European failure here, because the businessmen, the Khan network, were primarily European. They were primarily European businessmen who were also well-known to Europe's authorities and intelligence services. Their phones were monitored. Their order books were monitored. I spoke to one who said he knew that every deal he did with Khan was watched. I think the authorities should have been better at spotting that these people weren't just supplying Pakistan but were spreading outwards, and have done more to put them out of business. Some of them are still not entirely out of business.

In the 1980s, there was a U.S. failure. The U.S. knew a lot about Pakistan's program—not necessarily the selling to other countries by Khan, but they knew about Khan's network that he had built for Pakistan's own bomb. But the problem was that, just at the point at which pressure was being put on Islamabad about its bomb, in the late 1970s, suddenly the U.S.-Pakistan relationship was transformed by the Soviet invasion of Afghanistan in 1979. All of a sudden, Pakistan became this indispensable ally in fighting the Soviet Union. So proliferation was pushed way down the agenda, and basically, the intelligence was ignored or it was twisted.

If you speak to a lot of people who were in Congress at the time, they feel they were lied to about the intelligence in Pakistan's program, because there were laws in place which said the government had to certify every year that Pakistan did not have the bomb—and the administration did so. Basically, they continued to certify that Pakistan didn't have the bomb, even though it was pretty obvious that they did, because they wanted to continue the aid program through Pakistan to aid the mujahideen.

So this, in some people's eyes, was a missed opportunity, when, during those years, when quite a lot was known about Khan's network, it could have been put out of business. As I said, even though they didn't know, necessarily, that he was selling to other countries at this point, it's possible that by acting then, it would have potentially stopped its evolving into what it later became.

In the 1990s again, there was a bit of a failure, in losing track of Khan, as his selling was gathering pace. Then in the late 1990s, the intelligence agencies become much more successful at seeing some of the warning signs—and, as I said, they launched a very successful operation in penetrating the Khan network, very widely.

Where does this story leave us? There are still a lot of unanswered questions about Khan's story. It's one of the frustrations of writing a book. You actually think you will get to the bottom of things, and you don't. You hope you will, partly because some of the things are so murky, partly because they are the focus of so much interest at the moment.

For instance, what did he provide to Iran? Did this include a nuclear weapons design? The Iranians obviously say that their program is entirely peaceful. Centrifuges can be used, as I said earlier, for making nuclear fuel. But if they received a weapons design, that would obviously imply something else. Of course, Khan did provide a weapons design to Libya.

The Iranians have done a lot to conceal their program, but some of the documents that inspectors have found in Iran, including last year, look very similar to the documents that were handed over by Libya and relate to their weapons program, which were also given by Khan. They look like they come from the same family of documents. So that has raised some suspicions.

There have also been reports that Khan transferred more advanced centrifuges—the so-called P centrifuge machines—to Iran. The Iranians deny this, although recently the president said Iran was doing some work on the P2.

Why do all these details matter? They do matter, because without really knowing what Iran received, all these estimates you hear about how far Iran is from the bomb—is it two years or five years?—they are all guesswork, effectively, if you don't really know what Iran received and what it has and what it has been working on.

Another question unanswered is whether the Khan network had more customers. He had contact with a lot of other countries and traveled widely. Towards the end of its life, the intelligence agencies eavesdropping on Khan picked up talk amongst the businessmen, saying, "We hear Khan's got another customer." Who was that? They are still not entirely sure. So there is guesswork as to who that might be.

Answering these questions is particularly hard, because there is no access to Khan. He is under house arrest.

So what is the legacy, and where does it leave the nonproliferation regime? I think Khan has done, as I said at the start, huge damage to attempts to prevent the spread of nuclear weapons. He has increased supply. He put a huge amount of not just material, but knowledge into the marketplace—those secret designs he first stole from Urenco in the 1970s. From 2002, the members of the network started burning them onto CDs, in Dubai. Where have they gone? This was the foundation of Khan's career, these secret designs. How far have they got to? Where are they now?

It's that knowledge that he has put in the marketplace which is important. Any new network that might want to move into the space left by Khan might find it much easier to do so, given what is already out there. And there is the fear of other new A.G. Khans emerging from other programs. As well as increasing supply, he has increased demand for nuclear weapons.

Now, Khan, obviously, alone, isn't responsible for that. It's partly a function of the global insecurity that we see now, that many countries at least want to have the option of going for the bomb. But some of the countries that Khan sold to and passed technology on to, particularly Iran and North Korea—that has created concerns. If Iran does develop a bomb, if North Korea, for instance, tests, it could create cascades of proliferation; other countries in the Middle East and East Asia will look at their options.

There is also the problem that the value system underpinning the nonproliferation regime is collapsing. Non-nuclear states are resentful of the failure of existing nuclear states to disarm. They are angry at attempts to deny them civilian nuclear technology. Nuclear states, including the United States, feel that the old bargain of the nonproliferation regime doesn't hold and that Iran, particularly, is gaming that system by saying it wants civilian nuclear technology while trying to acquire the technology for weapons. As a result, the middle ground which held together the nonproliferation regime is disintegrating. As a result, in 2005, the five-year review conference that was supposed to look at the NPT treaty couldn't even agree on an agenda.

I close by saying that having looked at the Khan story, it has left me pretty pessimistic. In the past, people have been concerned that suddenly we were going to see a new wave of nuclear weapons countries. People worried about it in the 1960s, and it didn't happen. So it's not inevitable. But I think if you take all the factors together, we are at a warring point. If the nonproliferation system does collapse and if we do end up in a more dangerous world, where many more countries have the bomb, then I think A.Q. Khan would be more responsible than any other single individual for bringing that about.

Thank you.

Questions and Answers

QUESTION: Where is Kahn under house arrest? Who put him under house arrest? Are the businessmen that he dealt with out of business now, or are there businesses that are taking their place?

GORDON CORERA: Kahn is in his house in Islamabad. I was in Islamabad in February and drove past it. But, unfortunately, you can't stop and walk in. He is denied contact with the outside world. Security has

recently been increased. This was part of the deal that he cut with Musharraf, which was negotiated by friends of Kahn.

Why did Kahn get a deal in which this happened, is a good question. It's partly because people think he knew a lot about Pakistan, knew a lot about who might have known what he was doing, knew a lot of the secrets, and had some evidence on them, some information, which he managed to smuggle out of the country. As a result, he had a kind of insurance policy if this ever happened. So he was able to cut this deal that he would be placed under house arrest.

But he is pretty much denied contact with the outside world. So I think he is out of business, himself, in that sense—although, as I said, the problem with that deal is that it leaves some of these questions unanswered.

The businessmen, I think, are one of the more worrying aspects. Actually, one of the trials that had been going on in Germany recently of a man called Gotthard Lerch, who was a very important associate of Khan—he was on trial for supporting the Libya program—basically, the trial collapsed.

A Swiss man called Urs Tinner has also been due to stand trial. But nothing is happening.

Some of the South African businessmen—well, they are based in South Africa; some of them are German and Swiss—again, the trial delayed.

Very few of them have actually been convicted. It's very hard to get evidence on this, partly because a lot of the evidence is intelligence, which the intelligence agencies don't want to share. There have been complaints that the U.S. hasn't been passing on some of the intelligence.

Generally, one of the problems is that export-control laws are pretty weak. It's quite hard to prove that someone knew that that particular part was destined for a weapons program and not for something else. So they will claim, "Oh, I thought it was for the Libyan oil company. I just was manufacturing what I was told." Proving it was something else is quite hard.

I think it is a concern, that export-control laws are weak and that many of the businessmen in the past who might have been convicted for associating with Khan got twelve months, a year, two years, that's it. They are out pretty soon. It is not much of a disincentive, when the rewards are potentially millions of dollars for this contract.

So there is a problem with prosecuting these men and with actually creating a disincentive to become involved in this business.

QUESTION: I want to thank you very much. That was fascinating. I look forward to reading the book.

There's a very strong body of opinion that believes that Khan did this with Musharraf's approval and knowledge, and perhaps his benefit as well. Also I hear that Khan he is dying of cancer.

It seems to me that the most dangerous possibility was the proliferation of these weapons to individuals, to cells and to individual terrorists, who cannot be controlled—where there are no government controls, and where no sanctions can be imposed. What knowledge do you have about that, if any? Was there any indication or evidence that there were sales to individual terrorists, ad al Qaeda, and so forth?

GORDON CORERA: There's no evidence that Khan ever sold to al Qaeda or had contacts with them. There is evidence that other Pakistani scientists did, and other scientists within Pakistan's nuclear program did meet with bin Laden and his aides just before 9/11, in Kabul, and discussed with some al Qaeda associates possibilities of nuclear bombs. But those scientists weren't actually part of A.Q. Khan's network.

But that does raise the bigger concern of the security of Pakistan's program, the security of Pakistan's arsenal, the security and instability of the nation as a whole. I think that is a genuine concern. As I said, even though there is no evidence of A.Q. Khan ever actually passing on any technology or material to terrorists, clearly the fear is that the more dispersed this technology becomes, the more dispersed the material becomes, the more it gets into the hands of a country like North Korea, which has shown itself willing to sell missile technology to the highest bidder, the fear is that eventually this will make it more likely that terrorists do get their hands on a weapon.

QUESTION: Given the extraordinary complexities of this situation, what would you do if I gave you a magic wand and you could solve the problem with Iran? What would you tell our own government and the European governments? How would we proceed, at least for the time being, on a diplomatic level?

GORDON CORERA: It's a difficult territory. As a journalist rather than a policymaker, it's difficult to provide prescriptions about it.

One of the dangers, I would say, though, is to get into a very polarized position in which it's either attack Iran or let it have the bomb. The danger is, you narrow your options until those are the only two options, neither of which, frankly, is a very pleasant option, and both of which have pretty serious consequences.

So it's a search for other policy options which allow, perhaps, Iran to definitely not have the facility to have a bomb, but that constrain its nuclear ambitions in a way in which people can feel comfortable that it isn't actually going to be able to divert the technology towards a bomb. Finding some options towards doing that— people have been trying, frankly, and it hasn't been working. The longer it doesn't work, the more the mistrust grows and the more the options narrow towards those two very unpleasant options, to which, I think, we are heading. I don't think there is that much more time before people feel that those are the only two options on the table—let Iran have the bomb or, effectively, attack Iran. As I said, I don't think either of those is a very happy option.

QUESTIONER: Is there any question in your mind that they do want to have the bomb? They say it's only for peaceful energy purposes.

GORDON CORERA: Of course, it's very difficult to prove, because it's exactly the same technology you use for peaceful purposes as for a bomb. Obviously, you need to weaponize it and other things, but in terms of centrifuges and so on.

Is there any doubt in my mind? I think the only thing I would say is that—and this is guesswork—if the Iranians are smart, what they might do is develop a technology so that they could go for a bomb when they wanted, rather than necessarily going for one now—but keeping the option open. I don't know if that's what they are trying to do. But my guess would be that they are seeking to have the option of quickly going towards a bomb, should they ever make that decision, which is slightly different from going for one right now. That's a possibility. As I said, because of the nature of the technology, it's possible to divert it quickly towards a bomb, but not necessarily go for one at this moment, and keep within the constraints of what is legal, but then aim to switch it. That may be what they are doing—keeping the option open, if you like, rather than going for one now.

But as I said, you can do that and very quickly go down the weaponization option, if you have the right facilities and configure them correctly.

QUESTION: You have spoken about Khan pretty much as an individual. Just looking back, how far would you say he was driven by the need or the desire of the Pakistan government to have a bomb to match the Indian bomb? Was it Bhutto who was driving him? When did he become an independent agent, if ever? Was he really an agent of the Pakistan government throughout?

GORDON CORERA: That's It's a really interesting and important question. When he starts off, his motivation is nationalistic. It's fear of India, his own country's survival, and he is an agent of Pakistan. No

doubt about that. Throughout all the period, he is in part an agent of Pakistan and developing Pakistan's bomb and keeping it going.

How far is he independent? As I said, I think it is difficult to answer. I don't think it is a question of simply saying he is either completely independent or completely an agent. It would be nice to put him into one of those boxes.

To give you one example, the deals with North Korea. There are actually two parts to Pakistan's nuclear program. There is Khan Research Laboratories, his base, and there is something called the Pakistan Atomic Energy Commission, which is the overt official institution. But they are in huge competition, actually—quite vicious bureaucratic competition.

During the 1990s, Khan wants to remain preeminent and wants to develop his own missile system, because he wants to remain as the preeminent scientist and to get all the funding and prestige associated with that. So he and the Pakistan Atomic Energy Commission engage in competition to develop their own different missile systems, one solid-fueled and one liquid-fueled.

The Pakistan Atomic Energy Commission is working with China; Khan starts working with North Korea and starts trading some of those nuclear secrets with North Korea for that missile technology. As I said, that's partly about internal bureaucratic battles within the Pakistan system. He wants that missile technology.

How far are people in the government going, "Okay, do what it takes. We want you to develop a missile system. You do what it takes. You have complete autonomy and freedom to do what it takes"? They may well have known what he was doing in terms of "doing what it takes."

But that is slightly different from saying, "We are ordering you to go do a deal with North Korea and trade that enrichment technology." You see what I mean? The distinctions can be quite subtle, and the ambiguities in his relationship between states and how he fits. That's why it's quite hard to interpret it and put him into one box or the other, even though I think there is always a temptation to do that.

QUESTION: You have explained the difficulties in exposing some of Khan's proliferation activities. What are the prospects that he will ever be formally and fully debriefed by the multilateral agencies or national governments?

Secondly, what pressure can be brought to bear to make that happen?

GORDON CORERA: I think the chances of it being done publicly are close to zero. Pakistan has said that it is a matter of national sovereignty, that, "We will not hand him over. We will not allow anyone to access him." Khan is hugely popular still in Pakistan, despite all of this. You cannot underestimate how popular he is.

I have been reading the Pakistani papers in the last few days. As someone mentioned, he has prostate cancer. It has just been announced. At the moment, he is flying to Karachi for surgery, one of the few times he has been let out. There are all these petitions and people in parliament saying, "We must free Dr. Khan. We must free him. He is a national hero. Why is this man, who is ill and has done so much for our country, imprisoned?" So he still has this huge base of support.

So the idea of officially allowing him to be handed over to the United States or to the IAEA [[International Atomic Energy Agency](#)] for questioning, for interrogation, would be political suicide. Frankly, President Musharraf has enough on his plate without inviting another problem.

I have always had my suspicions that perhaps things might be done quietly, without us knowing. Everyone is adamant that that is not happening. So far, if the CIA or IAEA has questions, they have to filter them through Pakistan's intelligence agency to put to Mr. Khan and then return with the answers.

People clearly don't feel that this is a satisfactory position.

I am not sure I can see that changing, actually. I just think the political dynamics are pretty hard. I think he will, frankly, one day die with many of those secrets. We will see if some of them come out afterwards. He kept diaries. No one quite knows where they are. It's sort of an interesting story. I think a lot of people are suspicious that maybe once he passes away, some of his secrets might emerge then. So we might know some of the answers. But who knows?

QUESTION: Two questions. One, you mentioned Libya coming forward with the information, and you said you would give details in terms of what it was. That's one question.

The other question is, in terms of moving forward, have you any ideas of how the Western intelligence agencies could work together to prevent similar problems in the future?

GORDON CORERA: I lightly sketched over Libya. The story of Libya's negotiations is a chapter of the book. It's absolutely fascinating. It goes to a lot of other questions about why they did it. Was it due to Iraq or not? What was Gadaffi up to? It's quite difficult to summarize.

It's fair to say that it was far from easy. I spoke to a lot of people who did some of the negotiating with Gadaffi. It was a very tricky process in which there were lots of stops and starts, and people didn't trust each other. Both sides didn't trust each other, actually. The U.S. and the U.K. felt that the Libyans weren't coming clean. The Libyans thought they were, frankly, going to be done over, that the U.S. and the U.K. wanted to find out all they could and then suddenly declare Libya part of the axis of evil, without doing a deal, and invade. So it was a very bumpy process by which Libya agreed to give up its weapons program.

The key was the process which allowed a team of CIA and MI6 inspectors to go into the Libyan program secretly—there were two visits, one in September and one in December—to go and explore. Even on those visits, they found it very difficult to get the Libyans to own up to everything they had.

But eventually they managed to do it in a way which also preserved their operation against A.Q. Khan. It was exactly at the same time that they were trying to track A.Q. Khan. They had to try to dovetail getting Libya to own up with not tipping off Khan's network, and getting the diplomacy right with Pakistan. So it was a very complicated, intricate process.

Preventing future proliferation problems: In terms of the intelligence agencies, they obviously have a pretty mixed record when it comes to WMD. That is clearly the case. The Khan operation is a success case, in the end, of penetrating the problem through good human intelligence—something which they clearly failed to do, for instance, with the Iraqi program and they don't appear to have done with the Iranian program. So I think they have a mixed record on this subject.

You talked about cooperation. I think that is important. Particularly, the fear that these business networks are now transnational or international—they may well locate themselves in parts of Asia or Africa, and so you need to be able to work with governments there in order to find out what they are doing. You need to work with the International Atomic Energy Agency, who have their own experts and repositories of information and the ability to do things others can't do.

That process has been difficult. It has not been entirely happy, some of the cooperation between countries and with the IAEA. That is partly, frankly, due to the political context surrounding the subject. That has made it hard. So I'm not sure I have the solution.

QUESTION: Is there any evidence that, not Khan, but some of his business people gave information to India so it got its bomb?

GORDON CORERA: Not so much for India's own bomb in its genesis. In fact, there are lots of these shadowy networks. The Khan network is probably the most famous and the most important, but there

are other procurement networks out there in the world. There was one that was rolled up in South Africa recently, which actually had been supplying both Pakistan and India with parts, which is bizarre when you think about it and just shows how non-ideological it can be at the business level. It's about making money.

So there are networks out there which have been supplying some of the parts for the India's nuclear program—particularly because, of course, India, like Pakistan, is outside of the nonproliferation treaty. It has never signed up to it. Because of that, it has to do stuff clandestinely, to some extent. Of course, that may change with this India nuclear deal which the U.S. is discussing. So yes, there are networks out there, but not the Khan network itself. Some of the businessmen may have been tangentially working with Indians, but not too directly.

QUESTION: What Khan was doing certainly was not a secret to the political and military establishment in Islamabad. Could you elaborate a bit on the political implications of what was going on? Was this a kind of shadow agenda of the government, a kind of declaration of independence from Washington—in retrospect, exporting the Taliban to Afghanistan, and what's going on now? What is the political meaning of what Khan was doing?

GORDON CORERA: That's a very good question. I think, essentially, there are people within the Pakistan elite, within the Pakistani military and intelligence services in the state, who are pretty much opposed to a policy of cooperating with the United States and who, historically, have seen the United States as an untrustworthy ally and who have their minds more focused towards alliances with China, and with other Islamic countries, and who have pushed their own agenda within the Pakistani state.

To go back to the Iran deal in the 1980s, it's interesting. Just at the time Khan is selling to Iran, a man called General Aslam Beg becomes chief of the army staff, who is viciously anti-American and pro-Iranian, and wants to create a kind of alliance of Muslim states against the West, and talks about democratizing the proliferation order. So a lot of people have surmised—"surmised" being the word—that General Beg was supporting Khan in his dealings with Iran and pushing him forward, not necessarily as official government policy, but at least using Khan and his covert channels to fulfill that policy agenda.

So I think there are people in Pakistan who think in those terms, for different reasons. Some have ideological reasons. Some, for instance, are scarred by the experience of the 1980s, when at the end of the Afghan War they felt the Americans abandoned them. I think that is open to debate, but as a result, they fear, for instance, now, that as soon as bin Laden is caught or al Qaeda is crushed a bit further, America will walk away from Pakistan and move much closer to India strategically. So they are basically hedging their bets and thinking, "Maybe we need to make sure we can still have the option of the Taliban, for instance, in Afghanistan as a proxy force for us in case that should happen."

So there is definitely that school of thinking within the Pakistan establishment, but it's not necessarily all the Pakistani state, nor the view of President Musharraf himself, who I think is quite a complex figure, a fierce nationalist figure, who is very adept—I met him a couple of times—at speaking to the United States and speaking to the West. I think the whole Pakistani state is pretty complex. That's one of the reasons why it is quite hard to necessarily divine who is backing Khan and who is not.

QUESTION: It was my understanding that part of the pressure on Gaddafi, before Gaddafi came to an agreement with the British and American intelligence, had to do with the interdiction at sea of a shipment. This you never mentioned.

In that connection, there is the [Proliferation Security Initiative](#) that brought together a number of Western countries and South Korea and Japan. To move from your big question to the question of how you can prevent such things in the future, to what extent do you see that as a useful tool?

GORDON CORERA: You're absolutely right. The *BBC China* was the ship that was stopped in the Mediterranean, carrying parts from Dubai into Libya. It was interesting. The motivation for stopping that

ship was that at that point the Libyans weren't coming clean about what they were doing. They weren't allowing MI6 and CIA teams to go into Libya. MI6 got a tip-off that this boat was coming with a big shipment, and they said, "We're going to force the Libyans' hand. We are going to show them what we know about their program and that we know where it's coming from, by intercepting this boat." So they intercepted the boat, and the next morning a senior MI6 officer called up Musa Kusa, who is the head of Libyan external intelligence, and said, "What are you doing? We thought we were negotiating with you to come clean, and we just picked up this massive shipment of parts heading your way."

Without wishing to paraphrase the conversation too much, the phone was put down, and very soon after, the teams were allowed to come into the sites, because it was made clear just how much they knew about what was going on, and there was no point in the Libyans holding back.

So it was a very important interdiction. It was actually kept secret, precisely because they didn't want to tip off the Khan network that they knew where this stuff was coming from. Actually, the boat was allowed to continue. It was just stopped for a few hours in the Italian port of Taranto, and it was only announced later what had happened.

That wasn't actually under the PSI. This is one of the interesting things. It's often retrospectively claimed that this was part of the Proliferation Security Initiative, the system of stopping ships and intercepting cargo. But actually it wasn't. It was a kind of ad hoc thing done as part of the Libyan negotiations. But it later somehow became shifted to be a great example of the success of the PSI and is often cited as such, even though, as I said, it wasn't technically under the auspices of the PSI.

The PSI is potentially a very effective tool for intercepting these shipments, precisely if you have these transnational networks, shipments going all over the place. Obviously, intercepting them is a very powerful tool.

I think the only question some people have is, who is deciding what to intercept and when? What is the framework, the legal framework and the decision-making framework, for PSI? It is clearly run primarily by the United States and its allies, even though more and more countries are coming into it, but not through an international legal institution. Arguably, if it was, it wouldn't work. But that's a slightly different matter. But there is this kind of legal question about who has the right, when, to intercept shipping at sea.

It is a powerful tool, but there are just those questions about how it's done.

QUESTION: It's rather inconceivable that the international intelligence agencies didn't know what was going on. Certainly [Mossad](#) knew. Certainly China knew. Certainly India knew, and the Western services. But there long was a policy of knowing, tracking, but non-intervention. Only after 9/11 did things happen in Pakistan where they rolled up the Khan network. Essentially, the ISI [[Pakistan's Inter-Services Intelligence](#)] was very well aware of what Khan was doing because of the pervasiveness of the ISI in Pakistan, and in most of those other countries similarly with the intelligence establishments.

So I think there is the big problem in terms of why would they not do it at the time. Somebody had to benefit from it. It had to be the ISI.

GORDON CORERA: I agree, the ISI clearly knew what was going on. In fact, the first ISI reports on Khan were written in the late 1980s. They started investigating him through the 1990s. They knew what was going on. It's not quite the same as saying they were ordering him, but they knew what he was doing, no doubt about that.

As for other intelligence agencies, as I said, from the 1970s, people were aware of Khan. The CIA knew about Khan in the early 1970s. As I said, they underestimated him. I think this was one of the problems. They kind of thought, "Well, we know about him." They saw him as one of a lot of different networks working for Pakistan, maybe doing bits and pieces here. I think they didn't quite appreciate, until around

2000, just how ambitious he was, just how effectively he brought together all these production sites, just how willing he was to pass everything on.

I just don't think they quite got it until very late, which was a mistake. Then they began to get it and they began to have this problem: How far do you watch it? How far do you stop it?

You are right that there were voices, including in Washington, who said, "Let's keep watching this. Let's find out who that fourth customer is. Let's find out a bit more, for instance, about the North Korean missile program, because we want to know a bit for our ballistic missile defense." It was quite useful, watching what Khan was trading and having eavesdropped on it, to know all this stuff. So you did have voices saying, "Let's keep watching, keep learning," and others who said, "No. Let's wrap this up."

9/11 did change the debate, because it made it more urgent to stop these kinds of networks. But at exactly the same time, it complicated the relationship with Pakistan in dealing with Khan, because all of a sudden—a bit like the 1980s—Pakistan is very important for other reasons. Obviously, dealing with al Qaeda was more important than Khan in those early years. It increased the pressure to do something, but it also made it more difficult.

So those debates were pretty heated and vigorous about when you should act, how you should act, how fast, and what would actually be effective in stopping Khan and putting him out of business.

QUESTION: It was just incompetence.

GORDON CORERA: There was some of that.

QUESTIONER: But also wasn't it true that the Pakistanis revealed the situation before [inaudible]?

GORDON CORERA: I think the Pakistanis didn't really want to talk too much about it. They were pretty careful about what they wanted to talk about.

QUESTIONER: So they didn't want the whole thing to be wrapped up and pretty, the way Western intelligence may have wanted.

GORDON CORERA: Definitely. They had a completely different agenda.

JOANNE MYERS: Obviously, this is a very important issue that raises a lot of questions, with far-reaching consequences. Thank you very much.

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